

MATERIALS SCIENCE AND TECHNOLOGY IN EUROPE

FEMS EUROMAT23

03 - 07 September 2023
Frankfurt am Main (Germany) & Online

PROGRAM

DGM

EUROMAT2023.com

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Status of printed program: 15 August 2023

Please note that:
- there might be last-minute changes in the program
- you will find the latest program with all last-minute changes on the virtual platform of FEMS EUROMAT 2023 and at euromat2023.com
- we keep up-to-date information about program changes at the counter

Important Phone Numbers in Germany and Frankfurt

Police: 110
Ambulance: 112
Local Taxi: +49 (0)69 230001 and +49 (0)69 230033

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President: Prof. Dr.-Ing. Martin Heilmaier, Karlsruher Institut für Technologie (KIT), Karlsruhe
General Manager (§30 BGB): Dr. Stefan Klein

Complimentary Public Transportation

Public transportation is the most efficient and eco-friendly way to reach the Goethe Campus Westend in Frankfurt for the FEMS EUROMAT 2023 congress. Your congress ticket includes a complimentary public transportation ticket valid from Sunday (3 September) to Thursday (7 September) for the tariff zones Frankfurt City and the airport zone. Please note that your ticket is only valid once you've picked up your congress badge at the registration desk.

If you travel without your name badge, you must purchase a ticket before entering the transportation vehicle. Your ticket is automatically immediately validated at the time of purchase.

The closest subway station to Goethe Campus Westend is Holzhausenstraße (served by subway lines U1, U2, U3 & U8). Depending on your starting location, you may need to transfer lines. Coming from most locations the transfer station is Hauptwache. The Rhein-Main-Verkehrsverbund (RMV) is the local transportation provider in Frankfurt. The RMV app (Apple App Store and Google Play Store) will provide you with the best route options. Upon exiting the Holzhausenstraße station, follow the exit signs to Campus Westend. The main lecture building (Hörsaalzentrum) on the Goethe Campus Westend is just a short 7-minute walk from the station. The address of the Hörsaalzentrum is:

Theodor-W.-Adorno-Platz 5
60323 Frankfurt am Main

App Store

Google Play Store

Explore the city of Frankfurt

Frankfurt, that is the financial center, the European city, the transport hub. The city is also called the smallest metropolis in the world. When you think of the city on the river Main, you think of Frankfurt Airport, Paulskirche and Goethe, the stock exchange, the new old town and the skyline. Frankfurt brings opposites together. A cosmopolitan city where international flair meets homey coziness. On the following page we have compiled cultural and culinary highlights of the region. Enjoy the city of Frankfurt am Main.

Social Events

The Social Events of FEMS EUROMAT 2023 are great ways to network, make new acquaintances, meet old friends, and get to know local specialties. Take advantage of the welcome reception to meet attendees and network in a relaxed atmosphere before the scientific program beginns. You can expect national and international food and beverages, good music, and conversations at the congress dinner. Look forward to other highlights such as the congress party, guided city tours, and a ride on the Ebbelwoi-Express.

More information and tickets are available at:

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Prof. Dr. Jürgen Stampfl (Technische Universität Wien)
Dr. Goro Miyamoto (Tohoku University)
Dr. Ugo Lafont (European Space Agency)
Prof. Dr. Pedro Rivera Diaz Del Castillo (University of Southampton)

Monday - 4 September 2023

8:30 AM

Official Opening of FEMS EUROMAT 2023 by the Congress Chairs

Zschech, E.[1]; Le Bourhis, E.[2]

[1]deepXscan GmbH; [2]Université de Poitiers

8:35 AM

Welcome Address of the FEMS President

Zervaki, A.

National Technical University of Athens

8:40 AM

Welcome Address of the German Materials Society (DGM) Presidents

Skrotzki, B.[1]; Heilmaier, M.[2]

[1]Bundesanstalt für Materialforschung und -prüfung (BAM); [2]Karlsruhe Institute of Technology (KIT)

8:45 AM

Plenary Lecture

Life and research on the International Space Station: The highlights of the 177-day Cosmic Kiss mission in space

German ESA Astronaut Dr. Matthias Maurer

European Space Agency (ESA)



Born in 1970, Dr. Maurer is renowned for his work as an astronaut and his academic background in materials science. He holds a doctorate in materials science and was officially selected as an ESA astronaut in 2015. His unique combination of space exploration experience and scientific expertise makes him an inspiring figure within the materials science community.

Participants at FEMS EUROMAT are set to embark on a captivating exploration spanning science, technology, and the mysteries of space. With his rich understanding and enthusiasm for space exploration, Dr. Maurer will offer insights that promise to inspire and stimulate deep reflection among attendees.

The lecture will take attendees through Dr. Maurer's landmark mission Cosmic Kiss. As ESA astronaut Matthias Maurer travelled to the International Space Station on 11 November 2021, he embarked on a journey that marked his debut in space. The mission spanned 177 eventful days, culminating in his return via Crew Dragon Endurance, which made a splashdown in the Gulf of Mexico on Friday, 6 May 2022. Joining Matthias on the Crew-3 mission were NASA astronauts Raja Chari, Thomas Marshburn, and Kayla Barron.

During his time in space, Dr. Maurer was at the forefront of scientific exploration, supporting over 35 European experiments along with numerous international ones. The research conducted during this mission promises breakthroughs across multiple fields, from human health to materials science. Such advancements hold profound implications for life on Earth and chart a promising trajectory for the future of space exploration.

Dr. Maurer's selection as the inaugural speaker is a testament to the organizers' vision of advancing the frontiers of materials science and fostering interdisciplinary connections. His insights and shared experiences from the Cosmic Kiss mission will undoubtedly stand out as a pinnacle of the conference, igniting the innate curiosity and adventurous spirit of those in attendance.

9:10 AM

Plenary Lecture

FEMS European Materials Gold Medal Winner

Biomaterials from human origin

Mano, J.F.

University of Aveiro

9:50 AM

Plenary Lecture

FEMS European Materials Gold Medal Winner

Circular Materials for the ultimate sustainable and waste-free circular economy

Weidenkaff, A. (Speaker)[1]; Ionescu, E.[1]

[1]Fraunhofer-Einrichtung Wertstoffkreisläufe und Ressourcenstrategie IWKS, Darmstadt

Tuesday - 5 September 2023

8:40 AM

Plenary Lecture

Learning from nature for sustainable materials design

Peter Fratzl

Director of Max Planck Institute of Colloids and Interfaces

9:20 AM

Plenary Lecture

Seeing is believing: Correlative time-resolved electron and x-ray imaging of materials behaviour

Withers, P.J.

The University of Manchester

7:30 PM

Congress Dinner

Fully booked

Location: Casino - Festsaal 2

9:00 PM

Congress Party

Tickets available at Registration Desk - For Dinner participants included

Location: Casino - Festsaal 1

Wednesday - 6 September 2023

8:40 AM

Plenary Lecture

FEMS Materials Science & Technology Medal Winner

The Emergence of Halide Perovskites: Past and Future

Stoumpos, C.C.

University of Crete

9:20 AM

Plenary Lecture

From simple to high entropy transition metals oxides - applications in electro-chemical energy storage

Molenda, J.

AGH University of Science and Technology Krakow

Thursday - 7 September 2023

8:40 AM

Plenary Lecture

Materials challenges for the next challenges a sustainable electronics beyond silicon

Martins, R.R.F.d.P. (Speaker)[1]; Carlos, E.[2]; Branquinho, R.[2]; Pereira, L.[3]; Barquinha, P.[2]; Fortunato, E.[2]

[1]NOVA School of Science & Technology, Caparica (Portugal); [2]Materials Science Department, CENIMAT|I3N and CEMOP/UNINOVA, Faculty of Sciences and Technology, NOVA University Lisbon, 2829-516 Caparica, Portugal; [3]Alma-Science, 2829-516 Caparica, Portugal

9:20 AM

Plenary Lecture

Quo vadis, special steel? – The transformation of the special steel industry

Schneiders, T.

Deutsche Edelstahlwerke Specialty Steel GmbH & Co. KG

4:40 PM

Closing

Zschech, E. (Speaker)[1]; Zervaki, A. (Speaker)[2]; Le Bourhis, E. (Speaker)[3]; Moreno, R. (Speaker)[4]; Klein, S. (Speaker)[5]

[1]deepXscan GmbH; [2]National Technical University of Athens; [3]Université de Poitiers; [4]Instituto de Cerámica y Vidrio - CSIC; [5]Deutsche Gesellschaft für Materialkunde e. V

Including

- Award ceremony for the best posters
- Presentation of the venue of FEMS EUROMAT 2025
- Closing remarks

PLENARY SPEAKERS

Monday, 4 September 2023, 9:10 - 9:50 AM



Biomaterials from human origin

Professor Dr.
Joao F. Mano

FEMS European Materials Gold Medal Winner | University of Aveiro | Department of Chemistry, CICECO | Aveiro Institute of Materials

Monday, 4 September 2023, 9:50 - 10:30 AM



Circular Materials for the ultimate sustainable and waste-free circular economy

Professor Dr.
Anke Weidenkaff

FEMS European Materials Gold Medal Winner | Director of Fraunhofer Research Institution for Materials and Resource Strategies IWKS and Professor of Materials and Resources at the TU Darmstadt

Tuesday, 5 September 2023, 8:40 - 9:20 AM



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Learning from nature for sustainable materials design

Professor Dr. Dr.h.c.
Peter Fratzl

Director of Max Planck Institute of Colloids and Interfaces

Tuesday, 5 September 2023, 9:20 - 10:00 AM



Seeing is believing: Correlative time resolved electron and x-ray imaging of materials behaviour

Professor Dr.
Philip J. Withers

Chief Scientist and Regius Professor of Materials | Henry Royce Institute Director of the National Research Facility for Lab. CT (NXCT.ac.uk)

Wednesday, 6 September 2023, 8:40 - 9:20 AM

The Emergence of Halide Perovskites: Past and Future

Dr.
Constantinos Stoumpos

FEMS Materials Science & Technology Medal Winner | University of Crete



Wednesday, 6 September 2023, 9:20 - 10:00 AM

From simple to high entropy transition metals oxides - applications in electrochemical energy storage

Professor Dr.
Janina Molenda

AGH University of Science and Technology Department of Hydrogen Energy



Thursday, 7 September 2023, 8:40 - 9:20 AM

Materials challenges for the next challenges: A sustainable electronics beyond silicon

Professor Dr.
Rodrigo Martins

Director of CEMOP/UNINOVA | President of European Academy of Sciences - EurASc | President of International Union of Materials Research Society - IUMRS



Thursday, 7 September 2023, 9:20 - 10:00 AM

Quo vadis, special steel? – The transformation of the special steel industry

Dr.-Ing.
Till Schneiders

Deutsche Edelstahlwerke Specialty Steel GmbH & Co. KG



PROGRAM OVERVIEW

Monday 04.09.2023

	ground floor / Audimax		1st floor		2nd floor		3rd floor						
	HZ 1	HZ 2	HZ 3	HZ 4	HZ 5	HZ 6	HZ 7	HZ 8	HZ 9	HZ 10	HZ 11	HZ 12	HZ 14
8:30 AM	**Official Opening of FEMS EUROMAT 2023 by the Congress Chairs** *Room HZ 1+2*												
8:35 AM	**Welcome Address of the FEMS President** Room HZ 1+2												
8:40 AM	**Welcome Address of the German Materials Society (DGM) Presidents** Room HZ 1+2												
8:45 AM	Plenary Lecture **Life and research on the International Space Station: The highlights of the 177-day Cosmic Kiss mission in space** Dr. Matthias Maurer *Room HZ 1+2*												
9:10 AM	Plenary Lecture **Biomaterials from human origin** Professor Dr. Joao F. Mano *Room HZ 1+2*												
9:50 AM	Plenary Lecture **Circular Materials for the ultimate sustainable and waste-free circular economy** Prof. Dr. Anke Weidenkaff *Room HZ 1+2*												
10:30 AM	Coffee Break												
11:00 AM	B07.01		B03.01	B05.01	B01.01	B06.01	H09.01	C01.01	C01.12	C06.01	C07.01	C10.01	B07.13
1:20 PM	Poster Session of Areas B & F and Lunch												Womens Lunch
2:50 PM	B07.02	B07.14	B03.02	B05.02	B01.02	B06.02	H09.02	C01.02	C01.13	C06.02	C07.02	C10.02	
4:30 PM	Coffee Break												
5:00 PM	B07.03	B07.15	B03.03	B05.03	B01.03	B06.03	H09.03	C01.03	C01.14	C06.03	C07.03	C10.03	
7:00 PM													

	ground floor					1st floor					
	SH 0.101	SH 0.105	SH 0.106	SH 0.107	SH 0.109	SH 1.101	SH 1.104	SH 1.105	SH 1.106	SH 1.107	SH 1.108
10:30 AM	Coffee Break										
11:00 AM	F01.01	F04.01	F06.01	F07.01	F08.01	D04.01	D02.01	E06.01	E03.01	E05.01	E07.01
12:40 PM	Poster Session of Areas B & F and Lunch										
2:10 PM	F01.02	F04.02	F06.02	F07.02	F08.02	D04.02	D02.02	E06.02	E03.02	E05.02	E07.02
4:30 PM	Coffee Break										
5:00 PM	F01.03	F01.04	E01.01	F07.03	F08.03	D04.03	D02.03	E06.03	E03.03	E05.03	E07.03
7:00 PM											

Tuesday 05.09.2023

	ground floor / Audimax		1st floor		2nd floor		3rd floor						
	HZ 1	HZ 2	HZ 3	HZ 4	HZ 5	HZ 6	HZ 7	HZ 8	HZ 9	HZ 10	HZ 11	HZ 12	HZ 14
8:40 AM	Plenary Lecture **Learning from nature for sustainable materials design** Professor Dr. Dr.h.c. Peter Fratzl *Room HZ 1*												
9:20 AM	Plenary Lecture **Seeing is believing: Correlative time resolved electron and x-ray imaging of materials behaviour** Prof. Philip Withers *Room HZ 1*												
10:00 AM	Coffee Break												
10:30 AM	B07.04	B07.16	B03.04	B05.04	B01.04	B06.04	H09.04	C01.04	C01.15	C09.01	C07.04	C10.04	
12:50 PM	Poster Session of Areas C & E and Lunch												Area G Panel-Discussion Education
2:50 PM	B07.05	B07.17	B03.05	B05.05	B01.05	B06.05	H09.05	C01.05	C02.01	C09.02	C07.05	C10.05	
4:30 PM	Coffee Break												
5:00 PM	B07.06	B07.18	B05.13	B05.06	B01.06	B06.06	H09.06	C01.06	C02.02	C09.03	C07.06	C10.06	
7:00 PM													

	ground floor					1st floor					
	SH 0.101	SH 0.105	SH 0.106	SH 0.107	SH 0.109	SH 1.101	SH 1.104	SH 1.105	SH 1.106	SH 1.107	SH 1.108
10:00 AM	Coffee Break										
10:30 AM	D04.04	D05.01	D07.01	D10.01	D08.01	D01.01	D02.04	E04.01	E03.04	E05.04	E07.04
12:10 PM	Poster Session of Areas C & E and Lunch										
2:10 PM	D04.05	D05.02	D07.02	D10.02	D08.02	D01.02	D02.05	E04.02	E03.05	E01.02	E07.05
4:30 PM	Coffee Break										
5:00 PM	D04.06	D05.03	D07.03	D10.03	D08.03	D01.03	D02.06	E04.03		E01.03	A07.01
7:00 PM											

Wednesday 06.09.2023

	ground floor / Audimax		1st floor		2nd floor		3rd floor						
	HZ 1	HZ 2	HZ 3	HZ 4	HZ 5	HZ 6	HZ 7	HZ 8	HZ 9	HZ 10	HZ 11	HZ 12	HZ 14
8:40 AM	Plenary Lecture **The Emergence of Halide Perovskites: Past and Future** Dr. Constantinos Stoumpos *Room HZ 1*												
9:20 AM	Plenary Lecture **From simple to high entropy transition metals oxides - applications in electrochemical energy storage** Prof. Janina Molenda *Room HZ 1*												
10:00 AM	Coffee Break												
10:30 AM	B07.07	B07.19	H05.01	B05.07	B01.07	B02.01	H10.01	C01.07	C02.03	C09.04	C07.07	C10.07	G01.01
12:50 PM	Poster Session of Areas D & H and Lunch												Area G Panel-Discussion Technology Transfer
2:50 PM	B07.08	B07.20	H05.02	B05.08	B01.08	B02.02	H10.02	C01.08	C02.04	C09.05	C07.08	C05.01	FEMS Master Thesis Award
4:30 PM	Coffee Break												
5:00 PM	B07.09	B07.21	H03.01	B05.09	B01.09	B02.03	H10.03	C01.09	C08.01	C09.06	C11.01	C05.02	G01.02
7:00 PM													

	ground floor					1st floor					
	SH 0.101	SH 0.105	SH 0.106	SH 0.107	SH 0.109	SH 1.101	SH 1.104	SH 1.105	SH 1.106	SH 1.107	SH 1.108
10:00 AM	Coffee Break										
10:30 AM	D04.07	D05.04	D07.04	D10.04	D08.04	D01.04	A05.01	A06.01	A03.01	A02.01	A07.02
12:10 PM	Poster Session of Areas D & H and Lunch										
2:10 PM	D04.08	D05.05	D07.05	D10.05	D08.05	D01.05	A05.02	A06.02	A03.02	A02.02	A07.03
4:30 PM	Coffee Break										
5:00 PM	D04.09	D05.06	D07.06	D10.06	D08.06	A01.01	A05.03	A06.03	A03.03	A02.03	A07.04
7:00 PM											

Thursday 07.09.2023

	ground floor / Audimax		1st floor		2nd floor		3rd floor						
	HZ 1	HZ 2	HZ 3	HZ 4	HZ 5	HZ 6	HZ 7	HZ 8	HZ 9	HZ 10	HZ 11	HZ 12	HZ 14
8:40 AM	Plenary Lecture **Materials challenges for the next challenges: A sustainable electronics beyond silicon** Prof. Rodrigo Martins *Room HZ 1*												
9:20 AM	Plenary Lecture **Quo vadis, special steel? – The transformation of the special steel industry** Dr.-Ing. Till Schneiders *Room HZ 1*												
10:00 AM	Coffee Break												
10:30 AM	B07.10	B05.12		B05.10	B01.10	B02.04	H10.04	C01.10	C08.02	C05.05 C09.07	C11.02	C05.03	C08.04
12:50 PM	Poster Session of Areas A & G and Lunch												Area G Panel-Discussion Strategy
2:50 PM	B07.11	B01.12	***14:00 DGM-Tag***	B05.11	B01.11	B02.05	H10.05	C01.11	C08.03	C09.08	C11.03	C05.04	C11.04
4:30 PM	**Closing Remarks**		Coffee Break										
5:00 PM			***DGM Tag***										

	ground floor					1st floor					
	SH 0.101	SH 0.105	SH 0.106	SH 0.107	SH 0.109	SH 1.101	SH 1.104	SH 1.105	SH 1.106	SH 1.107	SH 1.108
10:00 AM	Coffee Break										
10:30 AM	D04.10	D01.06	D07.07	D10.07 D10.08	D08.07	A01.02	A05.04	A06.04	A03.04	A02.04	A08.01
12:10 PM	Poster Session of Areas A & G and Lunch										
2:10 PM	D04.11	D01.07	D04.12	H03.02	D08.08	A01.03	A05.05	A06.05	A03.05	A02.05	A08.02
4:30 PM											

Room HZ 1

Opening Ceremony · Plenaries

B: Structural Materials

B07.01: Deformation mechanisms in structural materials

11:00 AM | Keynote Lecture

Twinning and antitwinning in body-centered cubic metals

Gröger, R. (Speaker)[1]; Holzer, J.[1]; Kruml, T.[1]

[1]Institute of Physics of Materials, Czech Academy of Sciences, Brno (Czech Republic)

11:40 AM | Lecture

Critical assessment of the dislocation densities in tempered martensitic steel by TEM and XRD

Gautier, R. (Speaker)[1]; Schmitz, A.[2]; Pohu, B.[2]; Jacques, P.[1]

[1]UCLouvain, Louvain-La-Neuve (Belgium); [2]CRM Group, Liège (Belgium)

12:00 PM | Lecture

Quasi-in situ study of deformation behavior of an α/β Titanium Alloy

Ranjan, A. (Speaker)[1]; Singh, A.[1]; Mishra, S.[1]

[1]Indian Institute of Technology Bombay, Mumbai (India)

12:20 PM | Lecture

Efficient estimation of the fatigue strength with instrumented cyclic indentation testing

Blinn, B. (Speaker)[1]; Görzen, D.[1]; Ostermayer, P.[1]; Lehner, P.[1]; Eifler, D.[1]; Beck, T.[1]

[1]RPTU Kaiserslautern-Landau

12:40 PM | Lecture

Strain-rate sensitive deformation behaviour of a quenched and tempered C75 steel in a wide range of temperatures

Bohne, B. (Speaker)[1]; Wagner, M.F.-X.[1]

[1]Technical University Chemnitz

Room HZ 3

B: Structural Materials

B03.01: High temperature behaviour (I)

11:20 AM | Keynote Lecture

Micromechanical modelling of creep resistant steel alloys

Andersson, T. (Speaker)[1]; Balobanov, V.[1]; Barbero, J.I.[2]; Barco, J.[3]; Biswas, A.[1]; Callejo, L.[2]; Lindroos, M.[1]; Ruiz Andrés, M.[3]

[1]VTT Technical Research Centre of Finland, Espoo (Finland); [2]TECNALIA, Derio (Spain); [3]Tubos Reunidos Group, Amurrio (Spain)

12:00 PM | Lecture

Influence of temperature and strain rate on the fatigue behaviour of fully ferritic high chromium steel

Lehner, P. (Speaker)[1]; Beck, T.[1]; Blinn, B.[1]; Fischer, T.[2]; Kuhn, B.[2]

[1]RPTU Kaiserslautern-Landau; [2]Research Center Jülich

12:20 PM | Lecture

Study of the creep properties for an enhanced T91 steel via small punch creep test

Hernández Pascual, R. (Speaker)[1]

[1]CIEMAT, Madrid (Spain)

12:40 PM | Lecture online

The influence of modified grain boundary morphology on the mechanical creep properties of 718plus superalloys

Alabbad, B. (Speaker)[1]; Tin, S.[2]

[1]Illinois Institute of Technology, Chicago (United States); [2]University of Arizona, tucson (United States)

1:00 PM | Lecture

Improvement of Oxidation Resistance and Creep Properties of Inconel 740H through Composition Modification

Yun, D.W. (Speaker)[1]; Jeong, H.W.[1]; Lee, H.[1]; Seo, S.M.[1]; Yoo, Y.S.[1]

[1]Korea Institute of Materials Science, Changwon (South Korea)

Room HZ 4

B: Structural Materials

B05.01: Functionality of High-Entropy Alloys

11:00 AM | Keynote Lecture

Functional high entropy alloys

Raabe, D. (Speaker)[1]; Gault, B.[1]; Gutfleisch, O.[2]; Han, L.[1]; Li, Z.[3]; Rao, Z.[1]; Souza Filho, I.R.[1]

[1]Max-Planck-Institut für Eisenforschung GmbH, Changsha (China); [2]TU Darmstadt, Changsha (China); [3]Central South University, Changsha (China)

11:40 AM | Lecture

Ab initio design of Laves-phase high-entropy alloys for hydrogen storage

Ikeda, Y. (Speaker)[1]; Edalati, K.[2]; Grabowski, B.[1]

[1]University of Stuttgart; [2]Kyushu University, Fukuoka (Japan)

12:00 PM | Lecture online

Investigation of high entropy alloys as thermoelectric materials by density functional theory

Xia, M. (Speaker)[1]; Boulet, P.[1]; Record, M.-C.[1]

[1]Aix-Marseille University

12:20 PM | Lecture

Chemical ordering and magnetism in CrCoNi Medium Entropy Alloy

Ghosh, S. (Speaker)[1]; Neugebauer, J.[1]; Körmann, F.[1]

[1]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf

12:40 PM | Lecture

Bulk magnetic studies of a single-crystalline nanocomposite Al28Co20Cr11Fe15Ni26 HEA

Koželj, P. (Speaker)[1]; Jelen, A.[1]; Dražić, G.[2]; Vrtnik, S.[1]; Luzar, J.[1]; Wencka, M.[3]; Meden, A.[4]; Feuerbacher, M.[5]; Dolinšek, J.[6]

[1]Jožef Stefan Institute, Ljubljana (Slovenia); [2]National Institute of

1:00 PM | Lecture online

Magnetic properties and potential applications of AlCoFeNiCux (x=0.6-3.0) High-Entropy Alloys for supersilent devices

Luzar, J. (Speaker)[1]

[1]Jozef Stefan Institute, Ljubljana (Slovenia)

Room HZ 5

B: Structural Materials

B01.01: Bainite Steels I

11:20 AM | Highlight Lecture

Effect of prior martensite on bainitic transformation of high Si hypereutectoid steel

Sourmail, T.[1]; Philippot, A.[1]; Collin, S.[1]; Masteri Farahani, S.[1]; Jimenez, J.A.[2]; Garcia-Mateo, C. (Speaker)[2]

[1]Ascometal, Hagondange Cedex (France); [2]National Centre for Metallurgical Research (CENIM-CSIC), Madrid (Spain)

11:40 AM | Lecture

Bainitic decomposition of retained austenite in hypereutectoid steels: influence of austenitising conditions and prior martensite fraction

Masteri Farahani, S. (Speaker)[1]; Collin, S.[1]; Garcia Mateo, C.[2]; Philippot, A.[1]; Sourmail, T.[1]

[1]Ascometal, Hagondange (France); [2]CSIC, Madrid (Spain)

12:00 PM | Lecture

Compositional effects on bainite kinetics below Ms

van Bohemen, S. (Speaker)[1]

[1]Tata Steel, IJmuiden (Netherlands)

12:20 PM | Lecture

Effect of prior austenite grain size on the morphology and kinetics of bainitic transformation in a medium carbon high silicon bainitic steel

Franceschi, M. (Speaker)[1]; Dabalà, M.[1]; Garcia-Mateo, C.[2]; Morales-Rivas, L.[2]

[1]Università di Padova; [2]Cenim, Madrid (Spain)

12:40 PM | Lecture

Synchrotron studies on bainitic transformation of high carbon steel

Singh, K. (Speaker)[1]; Singh, A.[2]

[1]Helmholtz Zentrum Hereon Geesthacht, Hamburg; [2]Indian Institute of Technology, Bombay, MUMBAI (India)

1:00 PM | Lecture

Modelling the effect of prior martensite on bainite formation kinetics

dos Santos Avila, D. (Speaker)[1]; Offerman, S.E.[1]; J. Santofimia, M.[1]

[1]TU Delft

Room HZ 6

B: Structural Materials

B06.01: Fatigue

11:40 AM | Keynote Lecture

Anomalous fatigue crack propagation behavior in near-threshold region of L-PBF processed austenitic stainless steel

Jambor, M.[1]; Vojtek, T.[1]; Pokorný, P.[1]; Koutný, D.[2]; Hutař, P.[1]; Šmíd, M. (Speaker)[1]

[1]Institute of Physics of Materials, Czech Academy of Sciences, Brno (Czech Republic); [2]Faculty of Mechanical Engineering, Brno University of Technology

12:20 PM | Lecture online

Directional fatigue behavior of additively manufactured Ti6242 with as-built surfaces

Nicoletto, G. (Speaker)[1]; Fortese, G.[1]; Riva, E.[1]; Uriati, F.[2]

[1]University of Parma; [2]Beam-It SPA, Fornovo Taro (Italy)

12:40 PM | Lecture

Effect of surface roughness on the high cycle fatigue behavior of near-net shape HIPed Inconel 625

Javadzadeh Kalahroudi, F. (Speaker)[1]; Sadek, M.[1]; Berglund, T.[2]; Bergström, J.[1]; Krakhmalev, P.[1]; Grehk, M.[1]

[1]Karlstad University; [2]MTC Powder Solutions AB., Surahammar (Sweden)

1:00 PM | Lecture

Enhancement in fatigue resistance at low temperature strain-controlled fatigue of SS 316L: Assisted by martensitic transformation

Maharaja, H. (Speaker)[1]; Das, B.[1]; Singh, A.[1]; Mishra, S.[1]

[1]Indian Institute of Technology, Bombay, Mumbai (India)

Room HZ 7

H: Materials for Circularity and Sustainability

H09.01: Recycling, Recovery

11:00 AM | Highlight Lecture

Circular materials characterisation and recycling process optimisation: free support to academia and industry from European project ReMade@ARI

Admans, G. (Speaker)[1]; Hirschmann, E.[2]; Lattanzi, V.[3]; Ossig, C.[4]; Schramm, B.[2]; Thiry, M.[5]

[1]European Synchrotron Radiation

11:20 AM | Lecture online

Recycling battery metals from different secondary sources

Sheik, A. (Speaker)[1]; Marandi, B.[1]; Sanjay, K.[1]; Sharmila, S.[1]; Tudu, B.L.[1]; Gulia, K.[2]

[1]CSIR-Institute of Minerals and Materials Technology, Bhubaneswar (India); [2]University of Wolverhampton, Telford (United Kingdom)

11:40 AM | Lecture

Investigation of phytorecycling methods for recovery of metal contaminants from soil

Choi, B.-K. (Speaker)[1]; Beck, G.[1]; Jelic, M.[2]; Meermann, B.[3]; Sarquah, K.[1]; Talwar, P.[1]

[1]SRH Berlin University of Applied Sciences; [2]ABCircular GmbH, Berlin; [3]Federal Institute for Materials Research and Testing, Berlin

12:00 PM | Lecture

Single-layer recovery from production offcuts of polymer composites using controlled impact-induced delamination

Strahringer, S. (Speaker)[1]; Imbert, M. (Speaker)[1]; Balle, F.[2]

[1]Fraunhofer Institute for High-Speed Dynamics, Ernst-Mach-Institut - EMI, Freiburg im Breisgau; [2]University of Freiburg, Freiburg im

12:20 PM | Lecture

Recovery of glass fiber reinforced thermoplastic composites - A novel approach towards Materials Circularity by power ultrasonics

Ragupathi, B. (Speaker)[1]; Bacher, M.[1]; Balle, F.[1]

[1]University of Freiburg, Freiburg im Breisgau

12:40 PM | Lecture online

Simulation-driven design for inclusion of highly variable recycled materials

Dykeman, D. (Speaker)[1]; Husek, M.[1]

[1]Ansys, Cambridge (United Kingdom)

1:00 PM | Lecture

Solid-state recycling of aluminium matrix composites by field assisted sintering

Hirsch, S.J. (Speaker)[1]; Grund, T.[1]; Lampke, T.[1]

[1]Chemnitz University of Technology

Room HZ 8

C: Processing

C01.01: Powder for AM

11:00 AM | Lecture

Additive manufacturing of metal matrix nanocomposites: a novel approach for powder feedstock preparation

Elsayed, A. (Speaker)[1]; Haase, C.[1]; Krupp, U.[1]

[1]RWTH Aachen University

11:20 AM | Lecture

Preparation of highly concentrated silver and copper oxide nanoparticle – based inks under microwave irradiation, for printing of electronics

Dimitriou, E. (Speaker)[1]; Michailidis, N.[1]

[1]Aristotle University of Thessaloniki

11:40 AM | Lecture

Properties of Powder for Metal Additive Manufacturing: from production to reuse

Hryha, E. (Speaker)[1]; Raza, A.[1]

[1]Chalmers University of Technology, Göteborg (Sweden)

12:00 PM | Lecture

Titanium powder reuse strategies in Laser Powder Bed Fusion

Löbbecke, M. (Speaker)[1]; Gussone, J.[1]; Haubrich, J.[1]

[1]German Aerospace Center (DLR), Institute of Materials Research, Cologne

12:20 PM | Lecture

Spreading assessment of stainless steel powders in powder-bed-based additive manufacturing

Soulier, M. (Speaker)[1]

[1]CEA, Grenoble (France)

12:40 PM | Lecture online

Tracking the Characterisation History to Evaluate Powder Reusability for Metal Additive Manufacturing

Rahimi, E. (Speaker)[1]; Birley, R.[1]

[1]Materials Processing Institute, Middlesbrough (United Kingdom)

1:00 PM | Lecture online

A critical review of the correlation of AlSi10Mg powder production methods and properties on its processability by Laser Powder Bed Fusion

Salomão Peres, L. (Speaker)[1]; Fernandes Ribeiro, L.[2]; Gargarella, P.[3]; Ferreira Batalha, G.[4]

[1]CBA/USP, Aluminio (Brazil); [2]CBA / Unicamp, Aluminio (Brazil);

Room HZ 9

C: Processing

C01.12: AM of novel materials

11:20 AM | Highlight Lecture

Fabrication of Copper-Steel Composites by Laser Powder Bed Fusion & Induction Melting

Baganis, A. (Speaker)[1]; Leinenbach, C.[1]; Maeder, X.[2]; Malamud, F.[3]

[1]Empa & EPFL, Dübendorf (Switzerland); [2]Empa, Thun (Switzerland); [3]PSI, Villigen (Switzerland)

11:40 AM | Lecture

Interfacial microstructure and properties of 316L /Al5083 multimaterial structure fabricated by laser powder bed fusion

Villa Vidaller, M. (Speaker)[1]; Schulz, F. (Speaker)[1]; Jägle, E.[1]

[1]Universität der Bundeswehr München, Neubiberg, München

12:00 PM | Lecture

In-situ (S)TEM investigation and hydrogen tolerance of additively manufactured particle-reinforced compositionally complex alloys

Devulapalli, V. (Speaker)[1]; Soares Barreto, E.[2]; Schulz, F.[3]; Ellendt, N.[2]; Jagle, E.[3]; Dehm, G.[1]

[1]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf;

12:20 PM | Lecture

Reaching for enhanced material properties of NiCu Alloy 400 by combining additive manufacturing and ODS-nanoparticle modification

Roth, J.-P. (Speaker)[1]; Krupp, U.[2]; Jahns, K.[1]

[1]Osnabrück University of Applied Sciences; [2]RWTH Aachen University

12:40 PM | Lecture

Impact of laser scan speed on structure-property correlation in selectively laser melted CoCrFeMnNi high-entropy alloy

Choi, N. (Speaker)[1]; Taheriniya, S.[1]; Yang, S.[2]; Yu, J.H.[2]; Lee, J.-S.[3]; Wilde, G.[1]; Divinski, S.[1]

[1]University of Münster; [2]Korea Institute of Materials Science, Changwon (South Korea); [3]Hanyang

1:00 PM | Lecture online

Metal powder-cored wire arc additive manufacturing of the high entropy alloy

Zavdoveev, A. (Speaker)[1]

[1]The Paton Electric Welding Institute NAS of Ukraine, Kyiv (Ukraine)

Room HZ 10

C: Processing

C06.01: Laser based processing

11:20 AM | Lecture

An open atmosphere nitriding phenomenon on metal surfaces triggered by laser induced plasma

Ohtsu, N. (Speaker)[1]

[1]Kitami Institute of Technology

11:40 AM | Lecture

Comparison of TiC, WC and TiB laser dispersed ceramic particles targeting reduction of feature size for surface texturing structures

Ettema, B. (Speaker)[1]

[1]University of Twente, Enschede (Netherlands)

12:00 PM | Lecture

Laser cladding solution for extreme environment: From laboratory to plant trials on continuous caster rolls

Kishore, K. (Speaker)[1]; Karani, A.[1]; Mishra, S.[1]; Mukherjee, M.[1]; Singh Arora, K.[1]; Thakur, R.[1]

[1]Tata Steel, Jamshedpur (India)

12:20 PM | Lecture

Deterministic processing of alumina with nanosecond laser pulses for energy applications

Feng, J. (Speaker)[1]; Herrmann, M.[1]; Reinecke, A.-M.[1]; Hurtado, A.[1]

[1]Technische Universität Dresden

12:40 PM | Lecture

In-situ synthesis of a new Aluminium-Boride Composite by Laser Powder Bed Fusion using a ball-milled precursor powder

Forget, B. (Speaker)[1]; Baffie, T.[1]; Chaffron, L.[1]; Dezellus, O.[2]; Flament, C.[1]; Jérôme, A.[2]; Soulier, M.[1]

[1]Commissariat à l'Énergie Atomique et aux Énergies Alternatives,

1:00 PM | Lecture

Titanium-based alloy surfaces microalloyed by gold for biomedical application

Bialas, O. (Speaker)[1]; Taratuta, A.[1]

[1]Politechnika Śląska, Gliwice (Poland)

Room HZ 11

C: Processing

C07.01: Tribological coatings

11:00 AM | Keynote Lecture

The fascinating world of 2D Materials - How novel MXenes push the limits in Tribology

Gachot, C. (Speaker)[1]

[1]TU Wien

11:40 AM | Lecture

Bottom-up design of solid lubricant coatings

Polcar, T. (Speaker)[1]

[1]Czech Technical University in Prague

12:00 PM | Lecture

Hydrogen-free amorphous carbon coatings and their tribological properties in various lubrication conditions

Makowski, S. (Speaker)[1]; Härtwig, F.[2]; Ojeil, M.[1]; Göhler, L.[1]; Lorenz, L.[1]; Kaulfuß, F.[1]; Weihnacht, V.[1]; Lasagni, A.F.[2]

[1]Fraunhofer Institute for Material and Beam Technology IWS, Dresden; [2]Technische Universität

12:20 PM | Lecture online

Influence of the surface geometry on the properties of amorphous carbon coatings prepared by Laser Arc Technology

Krülle, T. (Speaker)[1]; Kaulfuß, F.[1]; Hofmann, F.[1]; Weihnacht, V.[1]

[1]Fraunhofer IWS Dresden

12:40 PM | Lecture

The self-adaption for determining the low friction behaviour of self-lubricating coatings

Cavaleiro, A. (Speaker)[1]; Bin Yakub, T.[1]; Vuchkov, T.[2]

[1]University of Coimbra; [2]Instituto Pedro Nunes, Coimbra (Portugal)

1:00 PM | Lecture

Quantitative wear maps of hard anodized aluminium alloy in non-conformal reciprocating sliding conditions

Baroni, E. (Speaker)[1]; Fortini, A.[1]; Soffritti, C.[1]; Merlin, M.[1]; Garagnani, G.L.[1]

[1]University of Ferrara

Room HZ 12

C: Processing

C10.01: Additive Manufacturing I

11:20 AM | Keynote Lecture

Multiscale simulation of powder bed fusion processes and additively manufactured materials

Mergheim, J. (Speaker)[1]; Burkhardt, C.[2]; Herrnböck, L.[2]

[1]Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU); [2]FAU Erlangen-Nürnberg

12:00 PM | Lecture

Extended One-dimensional Model for Efficient Mechanical Computation in Directed Energy Deposition Additive Manufacturing

Preumont, L. (Speaker)[1]; Weisz-Patrault, D.[1]

[1]CNRS, Ecole Polytechnique (France)

12:20 PM | Lecture

Thermodynamics analysis and mechanical and diffusional behavior of an extended one-dimensional model for various additive manufacturing processes

Viano, R. (Speaker)[1]; Weisz-Patrault, D.[2]

[1]Institut Polytechnique de Paris; [2]CNRS, Paris (France)

12:40 PM | Lecture

Fast microstructure estimation in additive manufacturing

Dollé, Q. (Speaker)[1]; Weisz-Patrault, D.[2]; El Bartali, A.[1]; Witz, J.-F.[1]

[1]LaMCube, Ecole Centrale Lille (France); [2]LMS, Ecole Polytechnique (France)

1:00 PM | Lecture

Numerical Investigation on In-process Nanoparticle Behavior during Additive Manufacturing of Oxide Dispersion Strengthened Steels

Bharech, S. (Speaker)[1]; Yang, Y.[1]; Xu, B.-X.[1]

[1]Institute of Materials Science, TU Darmstadt

Room HZ 14

B: Structural Materials · Women's Lunch

B07.13: Ceramics for Ultra-High temperature

11:00 AM | Highlight Lecture

Reactivity and performance possibilities in novel MAX/ultra-refractory composites

Silvestroni, L. (Speaker)[1]; Gilli, N.[1]; Gonzalez-Julian, J.[2]

[1]National Research Council of Italy (CNR), Faenza (Italy); [2]RWTH Aachen University

11:20 AM | Lecture

Microstructure of novel Ti3C2 MXene-ZrB2 ceramics

Gilli, N. (Speaker)[1]; Silvestroni, L.[2]; Nemani, S.K.[3]; Anasori, B.[4]

[1]National research council (CNR) of Bologna (Italy); [2]National research council (CNR) of Faenza (Ravenna, Italy); [3]Purdue School of Engineering and Technology, Indianapolis (United States); [4]Purdue University, Indianapolis

11:40 AM | Lecture

High temperature mechanical and thermal properties of SiC and B4C-SiC based composites and its fabrication using ultra-high concentration aqueous slurry

Park, M.-s. (Speaker)[1]; Gu, J.[2]; Lee, H.-S.[3]; Lee, S.-H.[4]

[1]Korea Institute of Materials Science, Pusan National University, Changwon (South Korea); [2]Nanjing

12:00 PM | Lecture

Synthesis, melting temperature and mechanical properties of Ultra-High Temperature Ceramics (UHTC)

Manaud, J. (Speaker)[1]; Robba, D.[1]; Cambriani, A.[1]; Corniani, E.[1]; Haehner, P.[1]; Cologna, M.[1]; Vlahovic, L.[1]; Konings, R.[1]

[1]European Commission, Karlsruhe

12:20 PM | Lecture

Interfacial phase formation in refractory Al2O3-Nb ceramic-metal composites

Eusterholz, M. (Speaker)[1]

[1]Karlsruhe Institute of Technology (KIT)

13:20 PM **I Side Event**
Women's Lunch

Room HZ 1

Opening Ceremony · Plenaries · **B:** Structural Materials

13:20 PM **I Lunch Break**
Lunch Area

3:10 PM | Highlight Lecture
Non-isothermal strain hardening behaviour of aluminium wires observed through quasi-cyclical uniaxial tensile tests between 0.2 Tm & 0.5Tm K
Agyakwa, P. (Speaker)[1]
[1]The University of Nottingham

3:30 PM | Lecture
Revisiting the mechanical properties of TiB2±z thin films grown from DCMS and HiPIMS
Enzlberger, L. (Speaker)[1]; Podsednik, M.[1]; Limbeck, A.[1]; Kolozsvari, S.[2]; Mayrhofer, P.[1]
[1]TU Wien, Vienna (Austria); [2]Plansee SE Composite Materials, Lechbruck am See

3:50 PM | Lecture
Microstructural characterization of the hardening/softening mechanisms of Al3003 at a wide range of temperature and strain rate
Bedoya Vallejo, D. (Speaker)[1]; Bergin, G.[2]; Fleury, E.[1]; Mazet, T.[2]; Serri, J.[1]
[1]University of Lorraine, Metz (France); [2]Fives Cryo, Golbey

4:10 PM | Lecture
Quantitative analysis of boron enrichment into M23C6 precipitates after tempering and creep in modified 9Cr-1Mo steel using 3D APT
Sathyanadhan, S. (Speaker)[1]; Das, C.R.[2]; Kar, S.K.[1]
[1]Indian Institute of Technology Kharagpur; [2]Indira Gandhi Centre for Atomic Research (IGCAR) Kalpakkam

B07/02: Strengthening mechanisms in structural materials

Room HZ 2

B: Structural Materials

B07/14: Ceramics design and characterisation

3:30 PM | Lecture
3D printing of bioinspired concentric cylinder microstructured ceramic composites
Zhai, W. (Speaker)[1]; Li, T.[1]
[1]National University of Singapore

3:50 PM | Lecture
Colloidal materials for thermal extrusion of ceramics
Ferrari, B. (Speaker)[1]; Chirico, C.[2]; Ortega, P.[3]; Urra, O.[2]; Ferrandez-Montero, A.[2]; Sanchez-Herencia, A.J.[4]
[1]Spanish National Research Council, Madrid (Spain); [2]Instituto de Cerámica y Vidrio, CSIC, Madrid (Spain); [3]Instituto de Cerámica y Vidrio, CSIC / COLFEED4Print, S.L.,

4:10 PM | Lecture
Non-Reactive Magnetron Sputtering of Al-N Coatings
Hajas, B.I. (Speaker)[1]; Janknecht, R.[1]; Foki, A.[1]; Wojcik, T.[1]; Kolozsvari, S.[2]; Primetzhofer, D.[3]; Mayrhofer, P.H.[1]
[1]TU Wien, Vieanna (Austria); [2]Plansee Composite Materials GmbH, Lechbruck am See; [3]Uppsala University,

Room HZ 3

B: Structural Materials

B01/02: Bainitic Steel 2

3:10 PM | Lecture
Surface weakening assisted machining Inconel 718 by Te infiltration
Li, G. (Speaker)[1]; Liu, Z.[1]; Wang, B.[1]
[1]Shandong University, Jinan (China)

3:30 PM | Lecture
The limits of Ni20Cr-Cr3C2 coatings on industrial hearth rolls
Froschauer, G.A. (Speaker)[1]
[1]voestalpine Stahl GmbH, Linz (Austria)

3:50 PM | Lecture
Characterization and investigation the influence of grain size on the mechanical properties of austenitic steel in corrosive environment
Shayan, S. (Speaker)[1]
[1]RWTH Aachen University

4:10 PM | Lecture
Improvements in the oxidation resistance of ultra-high temperature niobium silicide-based alloys through boron and germanium additions
Weeks, J. (Speaker)[1]; Utton, C.[1]
[1]The University of Sheffield

B05/02: Strengthening and Hardening of High-Entropy Alloys

Room HZ 4

B: Structural Materials

B01/02: Bainitic Steel 2

2:50 PM | Highlight Lecture
Influence of casting microstructure on nanostructured bainitic steels for manufacture of castings
Montoya Mejía, M.[1]; Garcia-Mateo, C.[2]; Morales-Rivas, L. (Speaker)[2]; Serna Giraldo, C.P.[1]; Aristizabal Sierra, R.E.[1]
[1]Universidad de Antioquia; [2]National Center for Metallurgical Research (CENIM-CSIC), Madrid (Spain)

3:10 PM | Lecture
Modelling the Influence of Carbon in Bainite transformation from heat treatment to mechanical properties
Schuscha, B. (Speaker)[1]; Scheiber, D.[1]; Brandl, D.[1]; Romaner, L.[2]
[1]Materials Center Leoben Forschung GmbH; [2]Montanuniversität Leoben

3:30 PM | Highlight Lecture
Strengthening of High-entropy alloys
Lu, Z.P. (Speaker)[1]; Wang, X.[1]
[1]University of Science and Technology Beijing

3:50 PM | Lecture
Efficient discovery of ultra-strong high-entropy alloys by mechanistic theory of yield strength
Maresca, F. (Speaker)[1]; Curtin, W.[2]
[1]University of Groningen; [2]EPFL, Lausanne (Switzerland)

4:10 PM | Lecture
Composition dependent strength of single phase high entropy alloys
Freudenberger, J. (Speaker)[1]; Drescher, S.[2]; Seils, S.[3]; Boll, T.[3]; Kauffmann, A.[3]; Heilmaier, M.[3]
[1]Dresden; [2]IFW Dresden; [3]KIT, Karlsruhe

B06/02: Very High Cycle Fatigue

Room HZ 5

B: Structural Materials

2:50 PM | Highlight Lecture
Fatigue crack initiation in material matrix in very high cycle regime
Chai, G. (Speaker)[1]; Chai, G.[2]
[1]Linköping University; [2]Alleima AB, Sandviken (Sweden)

3:10 PM | Lecture
Notch effects on very high cycle fatigue of a Ni-based single crystal
Vicente Morales, A. (Speaker)[1]; Cormier, J.[2]; Larrouy, B.[1]; Mauget, F.[2]; Villechaise, P.[2]
[1]Safran Helicopter Engines, Bordes (France); [2]Institut Pprime, Chasseneuil du Poitou (France)

3:30 PM | Lecture
Fatigue behaviour of high strength strip steels at High Cycle and Very High Cycle Fatigue regimes
Chantziara, K. (Speaker)[1]; Bergström, J.[1]; Grehk, M.[1]; Nikas, D.[1]; Sadek, M.[1]
[1]Karlstad University

3:50 PM | Lecture
Assessment of volume and surface damage in mixed HCF and VHCF loading of quenched and tempered steels
Raghuraman, S.R. (Speaker)[1]; Shrivastava, A.[2]; Weber, F.[3]; Starke, P.[3]; Krupp, U.[3]
[1]Hochschule Kaiserslautern; [2]RWTH Aachen University; [3]Hochshule Kaiserslautern

Room HZ 6

B: Structural Materials

3:30 PM | Lecture
Effect of low-temperature ausforming on the mechanical properties of medium-carbon nanobainitic steel
Ghosh, S. (Speaker)[1]; Kaikkonen, P.[1]; Komi, J.[1]; Somani, M.[1]
[1]University of Oulu

3:50 PM | Lecture
Cellular automata modeling of bainite in steels
Guichard, H. (Speaker)[1]; Appolaire, B.[2]; De Rancourt, V.[1]; Denis, S.[2]
[1]CEA Valduc, Is sur Tille (Gabon); [2]Université de Lorraine – CNRS, Nancy (France)

4:10 PM | Lecture
Intermetallics strengthening in nanocrystalline bainitic steels – the perspective of new industrial applications
Królicka, A. (Speaker)[1]; Caballero, F.[2]; Zak, A.[1]
[1]Wrocław University of Science and Technology; [2]National Center for Metallurgical Research (CSIC - CENIM), Madrid (Spain)

12:40 PM
Poster Session
Area B
Hörsaalzentrum
Lecture Hall Center
Foyer 3rd Floor

Room HZ 7

H: Materials for Circularity and Sustainability

H03/02: Remanufacturing, Data Management and Sustainability Assessment

2:50 PM | Highlight Lecture
Ontology-based Decentralised Data Sharing for Circularity
Lindecrantz, M. (Speaker)[1]; Blomqvist, E.[2]; Blomsma, F.[3]; De Meester, B.[4]; Hartig, O.[2]; Lambrix, P.[2]; Li, H.[2]; Luedtke, C.[3]; Oberhauser, T.[5]; Wautelet, T.[6]
[1]Ragn-Sells AB, Stockholm (Sweden); [2]Linköping University; [3]University of Hamburg; [4]IMEC,

3:10 PM | Lecture
Integration of Life Cycle Inventory data to process simulations performed via computational thermochemistry: Applications to the steel industry
Harvey, J.-P. (Speaker)[1]; Jofre, J.[1]; Poëti, K.[1]; Mahue, U.[1]; Davis, B.[2]; to Baben, M.[3]; Oishi, K.[1]
[1]Polytechnique Montreal, Montréal

3:30 PM | Lecture
Science-based Standardization to scale up Remanufacturing as a powerful Value-Retention Process in the framework of Circularity Engineering
Geist, H.[1]; Balle, F. (Speaker)[1]
[1]University of Freiburg, Freiburg im Breisgau

3:50 PM | Lecture
An Inductive Approach to Design for Remanufacturing in Engineering
Geist, H. (Speaker)[1]; Balle, F.[1]
[1]University of Freiburg, Freiburg im Breisgau

4:10 PM | Lecture
Assessing circularity and environmental impacts of lithium-ion batteries – case investigation
Pohjalainen, E. (Speaker)[1]; Kinnunen, K.[1]; Vatanen, S.[1]; Karhu, M.[1]; Kivikytö-Reponen, P.[1]
[1]VTT Technical Research Centre of Finland, Espoo (Finland)

C01/02: Sinter-based AM technologies

3:10 PM | Lecture
Additive manufacturing of non-weldable Ni-based alloy MAR-m247 by fused filament fabrication: Microstructure and mechanical properties
Daoud, H. (Speaker)[1]; Glatzel, U.[2]; Hofmann, W.[3]; Mese, E.[4]; Würtele, P.[3]
[1]Neue Materialien Bayreuth GmbH; [2]university of bayreuth, Bayreuth; [3]Peter Würtele GmbH, Bad

3:30 PM | Lecture
Comprehensive analysis of the properties of additively manufactured copper for energy applications
Kmita, G. (Speaker)[1]; Adamczyk, B.[2]; Brudny, A.[3]; Hury, A.[3]; Kulasa, J.[3]; Malec, W.[3]; Rybak, A.[2]; Rzepecki, R.[2]; Sekula, R.[1]
[1]Hitachi Energy Research, Krakow (Poland); [2]ABB Corporate

3:50 PM | Lecture
Deformation under gravity of stainless-steel binder jetted components during the sintering step
Cabo Rios, A. (Speaker)[1]; Hryha, E.[1]; Olevsky, E.[2]; Persson, M.[3]
[1]Chalmers University of Technology, Gothenburg (Sweden); [2]San Diego State University; [3]Digital Metal AB, Höganäs (Sweden)

4:10 PM | Lecture
Mastering binder-powder interaction using Metal Binder Jetting process parameters for improved green parts quality
Cheny, T. (Speaker)[1]; Colin, C.[1]; Verquin, B.[2]
[1]Mines Paris - PSL, Evry (France); [2]CETIM, Saint-Etienne (France)

C01/13: AM of Shape Memory Alloys

3:10 PM | Lecture
Additive manufacturing of NiTi-LPBF lattice structures with programmable properties
Herzig, S. (Speaker)[1]; Eckert, M.[1]; Weisheit, L.[1]; Müller, B.[1]; Holtzhausen, S.[2]; Koch, P.[2]
[1]Fraunhofer Institute for Machine Tools and Forming Technology IWU, Dresden; [2]Technical University of Dresden

3:50 PM | Lecture
NiTi-Nb alloy design by selective laser melting
Khodabakhshi, F. (Speaker)[1]; Freundl, R.[2]; Jägle, E.A.[2]; Wilde, G.[3]
[1]University of Tehran; [2]Universität der Bundeswehr München, Neubiberg; [3]University of Muenster

4:10 PM | Lecture
Microstructure and mechanical properties of NiTi shape memory alloys manufactured by LPBF for biomedical applications
Li, M. (Speaker)[1]; Contreras, O.[1]; Diaz-Lantada, A.[2]; Molina-Aldareguía, J.[3]
[1]IMDEA Materials Institute, Getafe (Spain); [2]Polytechnic University of Madrid; [3]IMDEA Materials, Getafe (Spain)

C06/02: Laser micro processing I - Material processing and synthesis

3:10 PM | Highlight Lecture
Laser Induced Transfer of 2D materials: a digital fabrication solution for 2D optoelectronics and sensing applications
Cheliotis, I.[1]; Logotheti, A.[1]; Zacharatos, F.[1]; Pesquera, A.[2]; Pesquera, A.[2]; Naveh, D.[3]; Tsetseris, L.[1]; Zergioti, I. (Speaker)[1]
[1]National Technical University of Athens; [2]Graphenea Headquarters,

3:30 PM | Lecture
Cost efficient production of superhydrophobic surfaces by injection molding of laser-generated stochastic structures
Wienke, A. (Speaker)[1]; Düsing, J.[1]; Brunotte, G.-P.[2]; Koch, J.[1]; Jäschke, P.[1]; Ternka, M.[2]; Overmeyer, L.[1]; Kaierle, S.[1]
[1]Laser Zentrum Hannover e.V.; [2]TPK-Kunststofftechnik GmbH,

3:50 PM | Lecture
Laser fabricated Ag nanoparticle conductive grids as bottom electrode for flexible ITO-free organic photovoltaics
Andritsos, K. (Speaker)[1]; Pozov, S.[2]; Theodorakos, I.[1]; Ioakeimidis, A.[2]; Kabla, A.[2]; Melamed, S.[3]; de la Vega, F.[3]; Choulis, S.A.[2]; Zergioti, I.[1]
[1]National Technical University of Athens; [2]Cyprus University of

4:10 PM | Lecture
Laser-based selective activation for metallization of PBT
Seiler, M. (Speaker)[1]; Barz, A.[1]; Bliedtner, J.[1]; Lasagni, A.[2]
[1]University of Applied Sciences Jena; [2]Technische Universität Dresden

C07/02: Metallic functional coatings

2:50 PM | Keynote Lecture
Multifunctional Zr-Cu-Ag Thin Film Metallic Glasses: an in situ dynamic microscopic characterization
Steyer, P. (Speaker)[1]; Borroto, A.[2]; Bourquard, F.[2]; Colombier, J.-P.[3]; Comby-Dassonneville, S.[4]; Der Loughian, C.[5]; Garrelie, F.[3]; Leroy, M.-A.[6]; Pierson, J.-F.[2]; Ter Ovannessian, B.[5]
[1]Université de Lyon, villeurbanne (France); [2]U. lorraine, Nancy (France); [3]U. St etienne, St Etienne (France); [4]U. Marseille; [5]insa, villeurbanne (France); [6]HEF, Andrezieux (France)

3:30 PM | Lecture
Decorative Metallized Polymer Surfaces for Automotive Industry
Sharma, P.[1]; Ponte, F.[1]; Figueiredo, N.M.F.[1]; Ferreira, J.[2]; Carvalho, S. (Speaker)[1]
[1]CEMMPRE, Department of Mechanical Engineering, University of Coimbra, Rua Luís Reis Santos, 3030-788 Coimbra, Portugal; [2]Engineering Department, KLC—Technical Plastics, 2430-021

3:50 PM | Lecture
Enhancement of properties of magnetron sputtered Cu films by Zr addition
Zhadko, M. (Speaker)[1]; Thakur, D.[1]; Zeman, P.[1]; Čerstvý, R.[1]
[1]University of West Bohemia, Plzen (Czech Republic)

4:10 PM | Lecture
Microstructure and mechanical properties of Cr1-xTax coatings
Söhngen, J.-O. (Speaker)[1]; Ott, V.[1]; Ulrich, S.[1]; Stüber, M.[1]
[1]Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen

C10/02: Additive Manufacturing II

3:10 PM | Lecture
Thermal Modelling of Laser Processing of Laminated kraft Paper
Dubey, S. (Speaker)[1]; Karunakaran, K.P.[1]
[1]Indian Institute of technology Bombay, Mumbai (India)

3:30 PM | Lecture
Thermomechanical modelling of the multi-layer directed energy deposition process through flash heating with focus on remelting
Santi, A. (Speaker)[1]; Bayat, M.[1]; Fabrizi, A.[2]; Bonollo, F.[2]; Hattel, J.[1]
[1]Technical University of Denmark, Kgs. Lyngby (Denmark); [2]Universitá di Padova

3:50 PM | Lecture
Property Tailoring using Powder Bed Fusion Studied by Multiphysics-Multiscale Phase-field Simulations
Yang, Y. (Speaker)[1]; Xu, B.-X.[1]; Zhou, X.[2]
[1]Technische Universität Darmstadt; [2]Sichuan University, Chengdu (China)

4:10 PM | Lecture · online
Modeling of location-specific microstructures in additive manufacturing of metallic alloys by combining nonequilibrium phase-field and fast thermal models
Mancias, J. (Speaker)[1]; Saunders, R.[2]; Arroyave, R.[3]; Tourret, D.[1]
[1]IMDEA Materials Institute, Madrid

12:40 PM
Poster Session
Area F
Hörsaalzentrum
Lecture Hall Center
Foyer 3rd Floor

Room HZ 8

C: Processing

Room HZ 9

C: Processing

Room HZ 10

C: Processing

Room HZ 11

C: Processing

Room HZ 12

C: Processing

13:20 PM **I Lunch Break**
Lunch Area

Room HZ 1	Room HZ 2	Room HZ 3	Room HZ 4	Room HZ 5	Room HZ 6
Opening Ceremony Plenaries B: Structural Materials	B: Structural Materials	B: Structural Materials	B: Structural Materials	B: Structural Materials	B: Structural Materials

4:30 PM | Coffee Break
Hörsaalzentrum Foyer

B07.03: Microstructure evolution in structural materials

5:00 PM | Lecture
Microstructural evolution of a CMSX4 Plus coated γ-γ′ system during thermal cycling
Radi, N. (Speaker)[1]; Dépinoy, S.[1]; Gaslain, F.[1]; Monteiro, C.[1]; Saboundji, A.[2]; Jaquet, V.[2]; Maurel, V.[1]
[1]Mines-Paris PSL, Evry (France); [2]Safran Tech, PFX, Colombes (France)

5:20 PM | Lecture
Study of the deformation and creep properties of "Green Carbide" WC-Co hardmetals at elevated temperature
Maier, K. (Speaker)[1]; Klünsner, T.[1]; Marsoner, S.[1]; Pachlhofer, J.[2]; Weirather, T.[2]; Czettl, C.[2]
[1]Materials Center Leoben Forschung GmbH; [2]CERATIZIT Austria GmbH, Reutte (Austria)

5:40 PM | Lecture | online
Validating x-ray line-profile analysis of defects in deformed metal using atomistic simulation
Race, C. (Speaker)[1]; Ribarik, G.[2]; Ungar, T.[3]
[1]Manchester; [2]Eotvos Lorand University, Budapest (Hungary); [3]University of Manchester

6:00 PM | Lecture
In-Situ TEM study on antiphase boundaries` formation in B2 FexAl1-x alloys
Hillel, G. (Speaker)[1]; Edry, I.[2]; Fuks, D.[1]; Galaeva, E.[1]; Meshi, L.[1]; Pinkas, M.[2]
[1]Ben Gurion University of the Negev, Beer Sheva (Israel); [2]NRCN, Beer Sheva (Israel)

B07.15: Metal-ceramic Composites

5:00 PM | Keynote Lecture
Sintering of non-oxide ceramics activated by small amount of metals colloidaly dispersed in aqueous media
Sanchez-Herencia, A.J. (Speaker)[1]; Chirico, C.[2]; Besharatloo, H.[3]; Ferrari, B.[2]
[1]Spanish National Research Council, Madrid (Spain); [2]Institute of Ceramic and Glass (ICV-CSIC), Madrid (Spain); [3]CIEFMA - Polytechnical University of Catalonia, Barcelona (Spain)

5:40 PM | Lecture
Development of WC/Ti(C,N)-FeNi ceramic-metal compositions by colloidal processing: microstructural and thermomechanical study
Tarancón, S. (Speaker)[1]; Tejado, E.[1]; Pastor, J.Y.[1]; Ferrari, B.[2]; Sanchez-Herencia, A.J.[2]
[1]Universidad Politécnica de Madrid;

6:00 PM | Lecture
Microstructural changes and damage mechanisms in nitrided Ti64 Grade 5 alloy after tensile and fatigue testing
Stekovic, S. (Speaker)[1]; Boyd, R.[1]; Selegård, L.[2]
[1]Linköping University; [2]Saab Aeronautics, Linköping (Sweden)

6:20 PM | Lecture
Cement-based composited containing functionalized carbon nanomaterials
Lavagna, L. (Speaker)[1]; Suarez-Riera, D.[1]; Pavese, M.[1]
[1]Politecnico di Torino

6:40 PM | Lecture
Compressive behaviour of particle reinforced metal matrix syntactic foams
Maróti, J.E. (Speaker)[1]
[1]Budapest University of Technology and Economics

B03.03: High temperature behavior (II)

5:00 PM | Highlight Lecture
Microstructure and homogenisation of chromium tantalum model alloys
Lanoy, F. (Speaker)[1]; White, E.[1]; Schäfer, B.[2]; Gorr, B.[2]; Galetz, M.[1]
[1]DECHEMA-Forschungsinstitut, Frankfurt; [2]Karlsruher Institut für Technologie (KIT)

5:20 PM | Lecture
Heterogeneous phase equilibria in the Mo-Si-Ti system at 1300 °C
Czerny, A.K. (Speaker)[1]; Rohde, M.[1]; Seifert, H.J.[1]
[1]Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen

5:40 PM | Lecture
Study on the difference of lattice misfit according to cooling rate after solution heat treatment of Ni-base single crystal superalloy
Do, J. (Speaker)[1]; Choi, B.G.[1]; Jung, I.-y.[1]; Jung, J.E.[1]; Kim, C.-S.[2]; Kim, I.S.[1]; Lee, S.[2]; Song, S.[2]
[1]Korea Institute of Materials Science, Changwon (South Korea); [2]Korea Research Institute of

6:00 PM | Lecture
Characterization and modeling of the V-Ti-B system
Yazlak, M. (Speaker)[1]
[1]Universität Siegen

B06.03: Novel Materials Discovery in High-Entropy Alloys

5:00 PM | Highlight Lecture
Combinatorial design of Al-Co-Cr-Fe-Ni-Ti compositionally complex alloys with low Cr content for high-temperature applications
Gerdt, L. (Speaker)[1]; Heidowitzsch, M.[2]; Hilhorst, A.[3]; Jacques, P.[3]; Kaspar, J.[2]; Leyens, C.[4]; Lopez, E.[2]; Mittag, A.[2]; Müller, M.[2]; Zimmermann, M.[4]

5:20 PM | Lecture
Machine learning-enabled high-entropy Invar alloy discovery
Rao, Z. (Speaker)[1]
[1]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf

5:40 PM | Lecture
Use of Generative Models to Speed up Materials Discovery
Gregores Coto, A.[1]; Precker, C.E. (Speaker)[1]; Rey Rodriguez, P.[1]; Suhonen, T.[2]; Anderson, T.[2]; Laukkanen, A.[2]; Muiños Landin, S.[1]
[1]AIMEN Techology Centre, Pontevedra (Spain); [2]VTT Technical Research Centre of Finland, Espoo (Finland)

6:00 PM | Lecture
High-thoughput exploration of the CrFeNiMoTi system for the development of Cobalt-free hardfacing coatings
Vary, C. (Speaker)[1]; Grün, P.[2]; Aubry, P.[1]; Guillot, I.[3]; Kaspar, J.[2]; Hillig, H.[2]
[1]CEA, Saclay (France); [2]Fraunhofer IWS, Dresden; [3]CNRS, Paris (France)

6:20 PM | Lecture
Recycling-oriented alloy design for next-generation of sustainable metallic materials
Moravcik, I. (Speaker)[1]; Hohenwarter, A.[1]; Zadera, A.[2]
[1]Montanuniversität Leoben; [2]Brno University of Technology

B01.03: Austenite Stability

5:00 PM | Highlight Lecture
Fatigue properties at elevated temperatures of secondary tempered nanostructured bainite: A study of deformation mechanisms
Kuntz, M. (Speaker)[1]; Garcia-Mateo, C.[2]; Lille, S.[3]; Sourmail, T.[4]; Wicks, G.[3]
[1]Robert Bosch GmbH, Schwieberdingen; [2]National Center for Metallurgical Research (CENIM-

5:20 PM | Lecture
Evaluation of the mechanical stability of retained austenite in ferritic matrix using the nanoindentation technique
Córdova Tapia, E. (Speaker)[1]; Morales Rivas, L.[1]; Alcalá Penadés, G.[2]; San Martín, D.[1]; García Caballero, F.[1]; Rana, R.[3]; García Mateo, C.[1]
[1]CENIM-CSIC, Madrid (Spain);

5:40 PM | Lecture
Theoretical design and experiments on hot rolled advanced bainitic steels
Cordova-Tapia, E.[1]; G. Caballero, F.[1]; Morales-Rivas, L.[1]; Rana, R.[2]; Garcia-Mateo, C. (Speaker)[1]
[1]National Centre for Metallurgical Research (CENIM-CSIC), Madrid (Spain); [2]Tata Steel, IJmuiden (Netherlands)

6:00 PM | Lecture
Effect of the stress state on deformation-induced austenite to martensite transformation in medium-Mn steels
Carreno-Saavedra, J. (Speaker)[1]
[1]Ghent University

B06.03: Fatigue

5:00 PM | Highlight Lecture
Effect of Anodizing on Fatigue Resistance of Casting Aluminium Silicon Alloys
Pavesi, A. (Speaker)[1]; Bandiera, M.[1]; Abello, M.A.[1]; Trombetta, V.[1]; Casari, D.[1]; Bonfanti, A.[1]; Mancini, A.[1]; Bertasi, F.[1]
[1]Brembo Spa, Stezzano (Italy)

5:20 PM | Lecture
Failure Analyses of a Hot Stamping Die for PHS Steels
Pinheiro, J.[1]; da Silva Farina, P.F. (Speaker)[1]
[1]University of Campinas

5:40 PM | Lecture
Fast direct cyclic model of polycrystal plasticity for high cycle fatigue
Weisz-Patrault, D. (Speaker)[1]; Echerradi, I.[2]; Peigney, M.[2]
[1]CNRS, Palaiseau (France); [2]Université Gustave Eiffel, Marne-La-Vallée (France)

6:00 PM | Lecture
Influence of retained austenite on the fatigue behavior and defect tolerance of steel 100Cr6
Ostermayer, P. (Speaker)[1]; Blinn, B.[1]; Burkart, K.[2]; Allam, T.[3]; Song, W.[4]; Clausen, B.[2]; Bleck, W.[5]; Krupp, U.[5]; Beck, T.[1]
[1]RPTU Kaiserslautern-Landau; [2]IWT Bremen; [3]Forschungszentrum Juelich; [4]University of Kassel;

6:20 PM | Lecture
Predicting the fatigue life of steel wires
Larippe, L.[1]; Lecercle, A.[1]; Jamoneau, A.[1]; Gandiolle, C. (Speaker)[2]; Buffière, J.-Y.[3]; Aubin, V.[2]
[1]Michelin, Clermont Ferrand (France); [2]Université Paris-Saclay, Gif sur Yvette (France); [3]INSA Lyon, Villeurbanne (France)

6:40 PM | Lecture
High-cycle fatigue behaviour and failure mechanisms of arc sprayed NiAl95/5 coatings on diamond smoothed steel substrates
Rymer, L.-M. (Speaker)[1]
[1]Chemnitz University of Technology

Room HZ 7	Room HZ 8	Room HZ 9	Room HZ 10	Room HZ 11	Room HZ 12
H: Materials for Circularity and Sustainability	C: Processing	C: Processing	C: Processing	C: Processing	C: Processing

4:30 PM | Coffee Break
Hörsaalzentrum Foyer

H09.03: Batteries, Composites

5:00 PM | Highlight Lecture
Sustainable nanostructures for Si-based anodes of next-generation Lithium-Ion Batteries
Blanco, M. (Speaker)[1]
[1]Norwegian University of Science and Technogy, Trondheim (Norway)

5:20 PM | Lecture | online
Assessing the effect of metal powder degradation in recycled AlSi10Mg alloy for a sustainable additive manufacturing process
Harisboure, P.[1]; Albessart, V.[1]; Cole, J.[2]; Gulia, K.[2]; Hausseguy, A.[1]; Sheik, A.R. (Speaker)[3]
[1]University of Wolverhampton and ESTIA, Telford (United Kingdom);

5:40 PM | Lecture | online
Big data analytics for sustainable and automated manufacturing processes in an Electroplating industry for decision-making and quality improvement
Venkateshaiah, N. (Speaker)[1]; Gulia, K.[1]; Zakeri, A.[1]
[1]University of Wolverhampton, Telford (United Kingdom)

6:00 PM | Lecture
The potential of resource recovery from an Integrated Waste Management System: A Case Study of Akwa Ibom State, Nigeria
Bassey, U. (Speaker)[1]; Luke, U.O. (Speaker)[2]; Sinn, M.B. (Speaker)[2]; Acheampong, I.B.[4]; Ettentuk, J.[5]; Okono, U.[2]
[1]SRH Berlin University of Applied Sciences; [2]University of Uyo; [3]Max

C01.03: Microstructure and properties of AM steels

5:00 PM | Highlight Lecture
Fine-grained and texture-free microstructure of AISI 304L steel obtained by alloy adjustment for electron beam additive manufacturing process
Burkhardt, C.[1]; Wendler, M. (Speaker)[2]; Lehnert, R.[1]; Hauser, M.[2]; Volkova, O.[2]; Biermann, H.[1]; Weidner, A.[1]
[1]Institute of Materials Engineering/ TU Bergakademie Freiberg;

5:20 PM | Lecture
Mechanical response of tailored austenitic stainless steels, processed with L-PBF, under different stress states
Sofras, C. (Speaker)[1]; Capek, J.[2]; Leinenbach, C.[3]; Logé, R.[4]; Strobl, M.[2]; Polatidis, E.[2]
[1]Paul Scherrer Institute PSI, Villigen PSI (Switzerland); [2]Paul Scherrer Institute, Villigen PSI (Switzerland);

5:40 PM | Lecture
Microstructural characterization and modelling of materials processed with wire arc additive manufacturing
van Dommelen, H. (Speaker)[1]; Geers, M.[1]; Hoefnagels, J.[1]; Palmeira Belotti, L.[1]; van Nuland, T.[1]
[1]Eindhoven University of Technology

6:00 PM | Lecture
Microstructure-properties relationship in 316L steel components obtained by Wire Additive Manufacturing: experimental and numerical approaches
Artieres, D. (Speaker)[1]; Gonçalves, D.[2]; Pascal, S.[2]; Dépinoy, S.[2]; Esin, V.A.[2]
[1]CEA Saclay, Gif-sur-Yvette (France); [2]Paris Saclay University,

6:20 PM | Lecture
Wire Arc Directed Energy Deposition: In-situ temperature measurement of thermal history during low alloyed steel deposition
Thaha Ibrahim Buhari, A.A. (Speaker)[1]
[1]Coventry University, CAMBRIDGE (United Kingdom)

C01.14: Post-AM processing

5:00 PM | Highlight Lecture
Understanding the hot isostatic pressing effectiveness of laser powder bed fusion Ti-6Al-4V by in-situ X-ray imaging and diffraction experiments
Mishurova, T. (Speaker)[1]; Bruno, G.[1]; Evsevleev, S.[1]; Henry, L.[2]; King, A.[2]; Piault, P.[2]
[1]Bundesanstalt für Materialforschung und -prüfung

5:20 PM | Lecture
Deep cryogenic treatment of additive manufactured H11 tool steel
Tetzlaff, T. (Speaker)[1]
[1]Bundeswehr Research Institute for Materials, Fuels and Lubricants (WIWeB), Erding

5:40 PM | Lecture
Effect of Rapid Post-treatment on Tensile Properties of CX Maraging Stainless Steel Processed by Laser Powder Bed Fusion
Javaheri, V. (Speaker)[1]; Afkhami, S.[2]; Amraei, M.[3]
[1]University of Oulu; [2]LUT University, Lapeenranta (Finland); [3]University of Turku

6:00 PM | Lecture
Unforeseen protection of AM Aluminum alloys by Ultraceramic® PEO
Buling, A. (Speaker)[1]; Zerrer, J.[2]
[1]Ludwigsburg; [2]ELB Eloxalwerk Ludwigsburg Helmut Zerrer GmbH

6:20 PM | Lecture
Post-processing of 316L stainless steel components produced by laser powder bed fusion (LPBF)
Santoni, A. (Speaker)[1]
[1]Università Politecnica delle Marche, Ancona (Italy)

6:40 PM | Lecture
Mitigating fatigue life anisotropy of additive manufactured high-strength stainless steel using laser shock peening
Ramadas, H. (Speaker)[1]; Sarkar, S.[2]; Dutta Majumdar, J.[1]; Nath, A.K.[1]
[1]Indian Institute of Technology Kharagpur; [2]Indian Institute of Technology Delhi

C06.03: Laser micro processing II - Fabrication and Monitoring

5:00 PM | Highlight Lecture
Antimicrobial surfaces through Direct Laser Interference - and why we are exploring them on the International Space Station
Mücklich, F. (Speaker)[1]; Müller, D.[1]; Ahmed, A.[1]; Siems, K.[2]; Kraemer, C.[2]; Moeller, R.[2]; Britz, D.[2]; Maurer, M.[4]
[1]Saarland University, Saarbrücken; [2]Deutsches Zentrum für Luft- und

5:20 PM | Lecture
Effect of surface roughness on direct laser interference patterning ablation
Moghtaderifard, S. (Speaker)[1]; Olawsky, L.[2]; Ränke, F.[1]; Baumann, R.[1]; Soldera, M.[1]; Lasagni, A.F.[1]; Kuhn, C.[2]
[1]Technische Universität Dresden; [2]ALOtec Dresden GmbH

5:40 PM | Lecture
Electrical and optical anisotropies in FTO films produced by fs-laser-induced self-organization phenomena driven by local compositional changes
Ariza, R.[1]; Lopez-Santos, C.[2]; Borras, A.[2]; R. Gonzalez-Elipe, A.[2]; Castillo, J.[1]; Ruiz de Galarreta, C.[1]; Solis, J. (Speaker)[1]

6:00 PM | Lecture
Machine learning-based near real-time process monitoring method for nanosecond pulsed laser functionalization of aluminum surfaces
Langeheinecke, J. (Speaker)[1]; Tutunjian, S.[1]; Soldera, M.[2]; Lasagni, A.F.[2]
[1]BMW AG, München; [2]Technische Universität Dresden

6:20 PM | Lecture
Monitoring approaches in Laser-based microprocessing
Lasagni, A.F. (Speaker)[1]; Schröder, N.[1]; Steege, T.[2]; Soldera, M.[1]; Voisiat, B.[1]; Zwahr, C.[2]
[1]Technische Universität Dresden; [2]Fraunhofer IWS, Dresden

C07.03: Corrosion protection

5:00 PM | Lecture
Development and performance evaluation of anticorrosion self-healing coating based on phosphorylated microcapsules
Ouarga, A. (Speaker)[1]; Barroug, A.[2]; Elaissari, A.[3]; Ben youcef, H.[1]
[1]Mohammed VI Polytechnic University (UM6P), Benguerir (Morocco); [2]Cadi Ayyad University,

5:20 PM | Lecture
Multifunctional coatings for maritime applications
Castro, J. (Speaker)[1]; Lima, M.[2]; Carvalho, I.[2]; Henriques, M.[2]; Carvalho, S.[1]
[1]University of Coimbra; [2]University of Minho, Guimarães (Portugal)

5:40 PM | Lecture
Process pressure dependency of carbon-based coating as surface modification for metallic bipolar plates
Steinhorst, M. (Speaker)[1]; Giorgio, M.[1]; Roch, T.[1]; Leyens, C.[1]
[1]Fraunhofer Institute for Material and Beam Technology IWS, Dortmund

6:00 PM | Lecture
High-temperature corrosion performance of Ni-based HVOF coatings in presence of molten solar salts for CSP plants
Abu-warda, N. (Speaker)[1]; Bedmar, J.[1]; García-Rodriguez, S.[1]; Rams, J.[1]; Torres, B.[1]; Utrilla, M.V.[1]
[1]Rey Juan Carlos University, Madrid (Spain)

C10.03: Joining, welding & alloy design

5:00 PM | Lecture
Closure of isolated voids during diffusion bonding: modelling and experimental statistics comparison
Huguet, M. (Speaker)[1]; Briottet, L.[1]; Gillia, O.[1]; Moro, I.[1]
[1]Univ Grenoble Alpes, CEA, LITEN, DTCH, LCA, F-38000 Grenoble, France

5:20 PM | Lecture
Computational Welding Simulation of a plasma wire arc additive manufacturing (PWAAM) process for high-strength steel
Enzinger, N. (Speaker)[1]; Moschinger, M.[1]; Schönegger, S.[1]
[1]Graz University of Technology

5:40 PM | Lecture
High-throughput thermodynamic equilibrium calculations for design of hardfacing alloys
Büyükuslu, Ã. (Speaker)[1]; Keuter, P.[1]; Reiff, L.[2]; Neyer, C.[2]; Lippmann, S.[2]; Rezende, J.[1]; Haase, C.[2]; to Baben, M. (Speaker)[1]
[1]GTT-Technologies, Aachen; [2]Steel Institute, RWTH Aachen University;

Room SH 0.101

F: Materials for Healthcare

F01.01: Bioactive glasses

11:00 AM | Lecture
3D Printed Bioactive Glass Nanocomposite Scaffolds Orchestrate Diabetic Bone Regeneration by Biomineralization Remodeling of ECM
Xu, Z. (Speaker)[1]; Boccaccini, A.R.[2]; Jiang, X.[1]; Zheng, K.[3]
[1]Shanghai Jiao Tong University; [2]University of Erlangen-

11:20 AM | Lecture
Preparation of composite dressings for wound healing based on polyvinyl alcohol/chitosan foams and bioactive glass particles containing cobalt and curcumin
Almeida Coco, A.M. (Speaker)[1]; Almeida Coco, A.M.[2]; Boccaccini, A.R.[3]; Martins Nunes. E.H.[4]

11:40 AM | Lecture
Comparative study in a rabbit model of biomaterials based on carbonated hydroxyapatites or mesoporous bioactive glasses with iliac crest autograft
Salinas Sánchez, A.J. (Speaker)[1]; Bravo-Giménez, B.[2]; Cabañas, V.[3]; Cecilia-Lopez, D.[2]; Garcia-Lamas, L.[2];

12:00 PM | Lecture
Influence of particle shape on reaction layers on bioactive glass S53P4 in dynamic in vitro conditions
Sinitsyna, P. (Speaker)[1]; Engblom, M.[1]; Hupa, L.[1]
[1]Åbo Akademi University, Turku (Finland)

12:20 PM | Lecture
ECM-mimicking bioactive glass-reinforced hydrogels regulate cellular behaviour for bone tissue regeneration
Zheng, K. (Speaker)[1]; Xu, R.[1]; Xu, Y.[2]; Xu, Z.[3]
[1]Nanjing Medical University; [2]Soochow University; [3]Shanghai Jiaotong University

Room SH 0.105

F: Materials for Healthcare

F04.01: Antibacterial Materials (I): Nanostructured surfaces

12:00 PM | Highlight Lecture | online
Bio-inspired nanostructured antimicrobial surfaces for 3D printed titanium implants
Su, B. (Speaker)[1]
[1]Bristol

12:20 PM | Lecture
Enhancement of the biological properties of 3Y-TZP by topographical modification approaches
Garcia-de-Albeniz, N. (Speaker)[1]; Ahmed, A.[2]; Müller, D.[2]; Mücklich, F.[2]; Jimenez-Pique, E.[1]; Mas-Moruno, C.[1]
[1]Universitat Politècnica de Catalunya, Barcelona (Spain); [2]Functional Materials, Saarbrücken

Room SH 0.106

F: Materials for Healthcare
E: Energy and Transportation

F06.01: AM of metallic biomaterials

11:00 AM | Lecture
Co- and Ni-free Stainless Steel for Additive Manufacturing of Lingual Orthodontic Appliances
Kluge, P. (Speaker)[1]; Hill, H.[1]; Mohr, A.[1]; Wiechmann, D.[2]
[1]Deutsche Edelstahlwerke Specialty Steel GmbH & Co. KG, Krefeld; [2]DW Lingual Systems GmbH, Bad Essen

11:20 AM | Lecture
Correlation between microstructure and corrosion behaviour of wrought and additively manufactured Ti-6Al-4V alloy in simulated physiological conditions
Lima dos Santos, P.L. (Speaker)[1]; Leviandhika, V.[2]; Nicholas de Boer, G.[1]; Redmond, A.[1]; Robert Beadling, A.[1]; Persson, C.[2];

11:40 AM | Lecture
Elucidation of phase transformation during annealing of LPBF Ti-6Al-4V alloy: An atomic scale study
.S, U.R. (Speaker)[1]
[1]Indian Institute of Technology Madras, Chennai (India)

12:00 PM | Lecture
An additive manufacturing-oriented design approach: a hip joint case study
Manai, N. (Speaker)[1]; Plocher, J. (Speaker)[1]; Mercier, D.[1]; Mohee, L.[1]
[1]Ansys, Sheffield (United Kingdom)

12:20 PM | Lecture
Manufacturing and optimization of surface micro topographies by laser powder bed fu-sion to enhance metal-polymer interlocking for dental applications
Martin Vilardell, A.[1]; Stepien, L. (Speaker)[1]; Brückner, F.[1]; López, E.[1]
[1]Fraunhofer IWS, Dresden

Room SH 0.107

F: Materials for Healthcare

F07.01: Mg, Fe, and Mo-based bioresorbable alloys

11:20 AM | Keynote Lecture
Structural and surface modification of Zn2Ag alloys for biomedical applications
García-Mintegui, C.[1]; Chausse, V.[1]; Goncharov, I.S.[2]; Mas-Moruno, C.[1]; Vedani, M.[2]; Cortina, J.L.[1]; Pegueroles, M. (Speaker)[1]
[1]Universitat Politècnica de Catalunya (UPC), Barcelona (Spain); [2]Politecnico di Milano

12:00 PM | Highlight Lecture
Characterization of multicomponent zinc alloys for orthopaedic applications
Bieda-Niemiec, M. (Speaker)[1]; Jarzębska, A.[1]; Maj, L.[1]; Major, R.[1]; Rogal, L.[1]; Skiba, J.[2]; Wróbel, M.[1]
[1]Institute of Metallurgy and Materials Science Polish Academy of Sciences, Kraków (Poland); [2]Institute of High Pressure Physics,

12:20 PM | Lecture
The Advantage of Using Additive Manufacturing for the Development of Biodegradable Metallic Materials
Godec, M. (Speaker)[1]
[1]Institute of Metals and Technology, Ljubljana (Slovenia)

Room SH 0.109

F: Materials for Healthcare

F08.01: Multi-functional and multi-scale biomaterial surfaces

11:00 AM | Keynote Lecture
Electrophoretic Deposition as a Fast Tool for the Immobilization of Antimicrobial Agents
Braem, A. (Speaker)[1]; Kübra Aktan, M.[1]
[1]KU Leuven

11:40 AM | Highlight Lecture
Piezoelectric Bariumtitanate-coatings on metallic implants
Bergmann, U. (Speaker)[1]; Apelt, S.[1]; Brosche, M.[1]; Özocak, B.[1]
[1]TU Dresden

12:00 PM | Lecture
Fight Implant-Associated Infections: Multifunctional Surfaces of Biomimetic Hierarchical-Structured Ti-based Bulk Metallic Glasses with Hydrated Coating
Cai, F.-F. (Speaker)[1]; Ó'Cróinín, T.[2]; Eckert, J.[1]; Spieckermann, F.[1]; Sarac, B.[3]; Zermeño Pérez. D.[4]; Duffy.
[1]KU Leuven

12:00 PM | Lecture
Femtosecond laser processing of Ti substrate to generate multiscale micro/nano surface topographies for dental implant application
Srivastava, M.G. (Speaker)[1]; Nagarajan, B.[1]; Aktan, M.K.[1]; Castagne, S.[1]; Braem, A.[1]
[1]KU Leuven

12:40 PM I **Lunch Break**
Lunch Area

12:40 PM
Poster Session
Area B
Hörsaalzentrum
Lecture Hall Center
Foyer 3rd Floor

Room SH 1.101

D: Characterization and Modeling

D04.01: Nanoindentation

11:00 AM | Highlight Lecture
Nanoindentation: Still Promising Tool in Structural Materials Research
Gao, Z.[1]; Jang, J.-i. (Speaker)[1]
[1]Hanyang University, Seoul (South Korea)

11:20 AM | Lecture
Strain rate sweep method: continuous measurement of the strain rate sensitivity over a large strain rate range
Holz, H. (Speaker)[1]; Merle, B.[2]
[1]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf; [2]Universität Kassel

11:40 AM | Lecture
Constrained incipient phase transformation in Ni-Mn-Ga films
Fareed, A. (Speaker)[1]
[1]Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin

12:00 PM | Lecture
Stress-strain Relationship of Metals by Indentation Tests
Hangen, U.D. (Speaker)[1]; Lukes, J.[1]
[1]Bruker Nano GmbH, Aachen

12:20 PM | Lecture
Advancing nanoindentation analysis for polymers
Yonkova, V. (Speaker)[1]
[1]Forschungszentrum Jülich

Room SH 1.104

D: Characterization and Modeling

D02.01: X-ray based materials characterization

11:20 AM | Lecture
Correlative Characterization: Bridging 2D/3D Imaging with Micro-Structuring
Boubnov, A.[1]; Mail, M.[1]; Scherer, T.[1]; Wang, D.[1]; Kübel, C. (Speaker)[2]
[1]KIT, Eggenstein-Leopoldshafen; [2]Eggenstein-Leopoldshafen

11:40 AM | Lecture
Multimodal in-operando X-ray absorption spectroscopy and X-ray diffraction to reveal complex transformation processes in batteries and catalysts
Just, J. (Speaker)[1]; Ramakrishnan, M.[1]; Liu, J.[1]; Brant, W.[2]; Carlsson, P.-A.[2]; Ciambezi, M.[1]
[1]MAX IV Laboratory, Lund

12:00 PM | Lecture
In-situ X-ray studies at the meso and macro scale at I12-JEEP -- Temperature, Pressure and Speed
Atwood, R. (Speaker)[1]; Alvarez-Borges, F.[2]; Polacci, M.[3]; Fan, X.[4]
[1]Diamond Light Source, Harwell (United Kingdom); [2]University of Southampton; [3]University of Manchester; [4]University College

12:20 PM | Lecture
Realistic strain simulations in biodegradable implants: correlative 2DXRD and µCT measurements
Hindenlang, B. (Speaker)[1]; Pereira da Silva, J.[2]; Tolnai, D.[1]; Wieland, F.[1]; Willumeit-Römer, R.[1]
[1]Helmholtz-Zentrum Hereon, Geesthacht; [2]Federal University of Sao Carlos

Room SH 1.105

E: Energy and Transportation

E09.01: Solid state batteries

11:00 AM | Highlight Lecture
Hybrid Inorganic Organic Polymer Electrolytes for Solid State Sodium Secondary Batteries
Pagot, G. (Speaker)[1]; Brombin, F.[1]; Vezzù, K.[1]; Negro, E.[1]; Di Noto, V.[1]
[1]University of Padova

11:20 AM | Lecture
A comprehensive reflection on the past, present, and future of solid electrolytes
Gomes, B. (Speaker)[1]
[1]Faculty of Engineering University of Porto

11:40 AM | Lecture | online
Designing versatile hybrid solid electrolytes based on metal organic frameworks
Zettl, R.[1]; Gadermaier, B.[1]; Hogrefe, K.[1]; Boulaoued, A.[2]; Johansson, P.[2]; Wilkening, H.M.R.[1]; Hanzu, I. (Speaker)[1]
[1]Graz University of Technology; [2]Chalmers University of Technology, Gothenburg (Sweden)

12:00 PM | Lecture
Impact of the GB and amorphous phases on Na-ion transport in NaSICON solid electrolyte
Deshmukh, V.A. (Speaker)[1]
[1]Technische Universität Darmstadt

12:20 PM | Lecture
Cork as shield for structural batteries
Valente, M. (Speaker)[1]; Magalhães Silva, S.[2]; Braga, M.H.[1]
[1]Faculty of Engineering of the University of Porto; [2]University of Aveiro

Room SH 1.106

E: Energy and Transportation

E03.01: Materials for Space Applications I

11:20 AM | Highlight Lecture | online
New materials enabling new possibilities for space compliant technologies
Lafont, U. (Speaker)[1]
[1]European Space Agency, Noordwijk (Netherlands)

11:40 AM | Lecture | online
White LED light induced degradation of epoxy/carbon fibres composite
Henry, T.[1]; Lafont, U. (Speaker)[1]; Butenko, Y.[1]; Martins, R.[1]; Rodriguez Castillo, S.[1]
[1]European Space Agency, Noordwijk (Netherlands)

12:00 PM | Lecture | online
Hingeless arm for space applications: development of a composite morphing structure actuated through shape memory alloys
Biasutti, T. (Speaker)[1]; Albano, M.[2]; Casciaro, E.[1]; Paolo, B.[1]; Rigamonti, D.[1]; Scalia, T.[2]
[1]Politecnico di Milano; [2]Aqenzia

12:20 PM | Lecture | online
Mechanical and tribological behaviour of Au-based coatings on NiTi shape memory alloy for novel applications in critical conditions
Miorin, E. (Speaker)[1]; Deambrosis, S.M.[1]; Montagner, F.[1]; Passeretti, F.[1]; Villa, E.[1]; Villa, F.[1]; Zin, V.[1]
[1]National Research Council of Italy, Padova (Italy)

Room SH 1.107

E: Energy and Transportation

E05.01: Solid State Lithium Batteries and Beyond

11:20 AM | Highlight Lecture
Transport properties and local ions dynamics in LATP-based hybrid solid electrolytes
Boaretto, N. (Speaker)[1]; Martinez, M.[1]; Ghorbanzade, P.[1]; Perez, H.[1]; Meabe, L.[1]; López del Amo, J.M.[1]; Gunathilaka, I.[2]; Forsyth, M.[2]; Schuhmacher, J.[3]; Armand, M.[1]
[1]Centre for Cooperative Research

11:40 AM | Lecture | online
Synthesis of RGO-Mo and rGO-Mo2C composites as active material to alleviate the shuttle effect of polysulphides in Li-S batteries
Piñuela Noval, J. (Speaker)[1]; Agostini, M.[2]; Brutti, S.[2]; Fernández, A.[1]; Fernández-González, D.[1]; Suárez, M.[1]; Verdeja. L.F.[2]

12:00 PM | Lecture
Capacity limiting processes in Li-S batteries with solid-state sulfur conversion in microporous carbons
Senol Gungor, A. (Speaker)[1]; Prehal, C.[1]; Wood, V.[1]; von Mentlen, J.-M.[1]
[1]ETH Zürich

12:20 PM | Lecture
Fabrication of composite cathodes with polymer electrolyte for solid-state batteries
Langer, F. (Speaker)[1]; Schwenzel, J.[1]
[1]Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, Braunschweig

Room SH 1.108

E: Energy and Transportation

E07.01: Synthesis, characterization and modelling of anion-exchange membranes

11:00 AM | Highlight Lecture | online
First principles molecular dynamics investigations of hydroxide transport in model moderate- to low-hydration anion-exchange membrane nanoconfined environments
Tuckerman, M. (Speaker)[1]; Dekel, D.[2]; Zelovich, T.[1]
[1]New York University; [2]Technion –

11:20 AM | Lecture
Molecular Engineering of Anion Exchange Membranes for Hydrogen Fuel Cells and Water Electrolyzers
Bae, C. (Speaker)[1]
[1]Rensselaer Polytechnic Institute, Troy, New York (United States)

11:40 AM | Lecture
Effect of carbon dioxide on the properties of polyphenylene-based anion exchange membranes
Shin, D. (Speaker)[1]; Lee, H.[1]; Bae, B.[1]; Kwon, H.[1]; Kim, J.[1]; Kim, S.[1]; Kim, Y.-e.[1]; Ko, Y.[1]; Lee, W.[1]; Kim, M.[1]; Kim, S.-K.[1]
[1]Korea Institute of Energy Research, Daejeon (South Korea)

12:00 PM | Lecture
Polypyrrole-polyketone copolymers: exploring a flexible synthetic pathway toward anion exchange membranes
Sgarbossa, P. (Speaker)[1]
[1]University of Padova

12:20 PM | Lecture
Preparation and characterization of polymeric anion exchange membranes by microwave assisted Paal-Knorr reaction on polyketone
Lanero, F. (Speaker)[1]
[1]University of Padova

12:40 PM I **Lunch Break**
Lunch Area

12:40 PM
Poster Session
Area F
Hörsaalzentrum
Lecture Hall Center
Foyer 3rd Floor

Room SH 0.101

F: Materials for Healthcare

F01.02: Hydrogels and Polymers

2:30 PM | Lecture
3D printable and Tailored Magnetic hydrogels for biomedical applications
Hafizi, H. (Speaker)[1]; Winters, C.[1]; Collins, M.[1]
[1]University of Limerick

2:50 PM | Lecture
Role of gelatin on the "in vitro" behaviour of hydroxyapatite/agarose scaffolds
Merino, I.[1]; Roman, J.[1]; Cabañas, V.[1]; Lozano, D.[1]; Salinas Sánchez, A.J. (Speaker)[2]; Vallet-Regi, M.[1]; Peña, J.[1]
[1]Universidad Complutense de Madrid, Spain; [2]Universidad Complutense de Madrid

3:10 PM | Lecture
An experimental design approach to predict gelatin methacryloyl (GelMA) physical properties in tissue engineering
Peyret, C. (Speaker)[1]; Linder, M.[1]; Kahn, C.J.[1]; Arab-Tehrany, E.[1]
[1]Université de Lorraine, Nancy (France)

3:30 PM | Lecture
In-situ gelling polysaccharides blend particles as a potential dressing for chronic wounds
Del Gaudio, P. (Speaker)[1]
[1]University of Salerno, Fisciano (Italy)

3:50 PM | Lecture
Design and development of novel systems for osteochondral regeneration
García-Fernández, L. (Speaker)[1]; Aguilar, M.R.[1]; San Román, J.[1]; Vázquez-Lasa, B.[1]
[1]Instituto de Ciencia y Tecnología de Polímeros, ICTP (CSIC), Madrid (Spain)

4:10 PM | Lecture
Cellular structures - floating drug dosage forms in pharmaceutics
Budai, I. (Speaker)[1]; Béresova, M.[2]; Haimhoffer, Á.[1]; Szoboszlai, A.[1]; Tóth, J.[1]; Vasvári, G.[1]
[1]University of Debrecen; [2]University of Debrecen

Room SH 0.105

F: Materials for Healthcare

F04.02: Antibacterial Materials (II): Antimicrobial peptides, nanoparticles and coatings

2:10 PM | Lecture online
Antiviral and antibacterial potential of air filters functionalized with Ag2O, ZnO and CuO particles
Ribeiro, B. (Speaker)[1]; Vazquez-Lopez, A.[2]; Vazquez-Pufleau, M.[2]; Llamosi, M.[4]; Sempere, J.[4]; Wang, D.-Y.[3]; Yuste, J.[4]; Domenech, M.[4]; LLorca, J.[2]; Echeverry-Rendón, M.[3]

2:30 PM | Lecture online
Dhvar5-Chitosan Nanogels Winning the Fight against Orthopedic Device-Related Infections
Costa, B. (Speaker)[1]
[1]Institute for Research and Innovation in Health (i3s), University of Porto

2:50 PM | Lecture online
Alginate hydrogels with antimicrobial and cell adhesive properties for bone tissue engineering
López Gómez, P. (Speaker)[1]
[1]Universitat Politècnica de Catalunya, Barcelona (Spain)

3:10 PM | Lecture online
A biomaterial approach based on chitosan nanoparticles functionalized with antimicrobial peptides against Helicobacter pylori, the world conqueror
Fonseca, D. (Speaker)[1]; Neto, E.[1]; Custódio, B.[1]; Guimarães, S.[1]; Alves, P.[1]; Pereira, R.[1]; Freitas, P.[2]; Martins, M.[2]

3:30 PM | Lecture
Antibacterial performance of silver nanoparticle/sol-gel composite coatings applied to biodegradable AZ31 magnesium alloy
Fernández-Hernán, J.P. (Speaker)[1]; Martínez-Campos, E.[2]; Pulido-González, N.[1]; Rams, J.[1]; Torres, B.[1]
[1]Universidad Rey Juan Carlos,

3:50 PM | Lecture
Multifunctional coating to improve Titanium Boston keratoprosthesis backplate
Gomez, S. (Speaker)[1]; Mas-Moruno, C.[1]; Gil, F.J.[2]; Barraquer, R.I.[3]; Manero, J.M.[1]
[1]universitat politècnica de catalunya, Barcelona (Spain); [2]Universitat Internacional de Catalunya, School of Dentistry, Universitat Internacional de

4:10 PM | Lecture
The high-throughput discovery of antimicrobial coatings
Wieczerzak, K. (Speaker)[1]; Altenried, S.[1]; Klimashin, F.[1]; Maniura, K.[1]; Michler, J.[1]; Ren, Q.[1]
[1]Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun (Switzerland)

Room SH 0.106

F: Materials for Healthcare
E: Energy and Transportation

F06.02: AM of non-metallic biomaterials

2:10 PM | Keynote Lecture
How patients and medical professionals benefit from ceramic 3D printing
Bomze, D. (Speaker)[1]; Bauer, M.[1]; Bergamini, M.[1]; Dias, J.[1]; Djebali, M.[1]; Ertl, F.[1]; Kehrer, K.[1]; Lanner, S.[1]; Matzenberger, S.[1]; Prochaska, T.[1]; Schmidt, F.[2]; Schweiger, J.[2]; Schwentenwein, M.[1]; Sohl, J.[1]; Thienel, M.[1]; Unkovskiy, A.[2]
[1]Lithoz GmbH, Vienna (Austria); [2]Charité Universitätsmedizin Berlin; [3]Ludwig-Maximilians-Universität München Universitäts-Zahnklinikum München, Munich

2:50 PM | Lecture
Amorphous calcium phosphate citrate reinforced gelatin-alginate dialdehyde bioink for bone regeneration
Indurkar, A. (Speaker)[1]; Bauer, J.[2]; Boccaccini, A.R.[2]; Heid, S.[2]; Locs, J.[1]; Rubenis, K.[1]
[1]Riga Technical University; [2]University of Erlangen-

3:10 PM | Lecture
Hybrid 4D electroactive bioceramic- based materials for bone healing applications
Ferrandez Montero, A. (Speaker)[1]; Ferrari, B.[2]; Ortega Columbrans, P.[2]; Sanchez Herencia, A.J.[2]; Urra, O.[2]
[1]Spanish National Research Council, Madrid (Spain); [2]Institute of Ceramic and Glass (CSIC),

3:30 PM | Lecture
Hydroxyapatite and Tricalcium Phosphate in Combination with Zirconia Manufactured by Digital Light Processing-based Vat Polymerization to Treat Large Bone Defects
Nistler, S. (Speaker)[1]; Hofstetter, C.[2]; Baudis, S.[3]; Schwentenwein, M.[2]; Stampfl, J.[3]

3:50 PM | Lecture
LCM versus CNC - Medical instruments made of ATZ bioceramics
Ortmann, C. (Speaker)[1]; Reichel, M.[2]; Oberbach, T.[1]; Liebelt, M.[1]; Mokros, J.[1]; Schwarzer-Fischer, E.[2]; Lorenz, N.[2]
[1]Mathys Orthopaedie GmbH, Moersdorf; [2]Fraunhofer Institut for Ceramic Technologies and

4:10 PM | Lecture
Photocrosslinkable, Degradable and Bioactive Polymeric Ink for Meniscus Regeneration by 3D Printing
Massonie, M. (Speaker)[1]; Bethry, A.[1]; Garric, X.[1]; Nottelet, B.[1]; Noël, D.[2]; Pinese, C.[1]; Simon, M.[3]; Subra, G.[1]
[1]IBMM- University of Montpellier;

Room SH 0.107

F: Materials for Healthcare

F07.02: A'oys-by-design

2:50 PM | Highlight Lecture
Additively manufactured and laser surface treated near-beta Ti-13Nb-13Zr alloy for bone implant application
Gebert, A. (Speaker)[1]; Goldberg, P.[1]; Hantusch, M.[1]; Hariharan, A.[1]; Hempel, U.[2]; Lasagni, A.-F.[3]; Pilz, S.[1]; Schell, F.[4]; Striggow, F.[1]; Zwahr, C.[4]
[1]Leibniz Institute for Solid State

3:10 PM | Highlight Lecture
Dealloying of Biocompatible β-TiCuZr surfaces: An ab initio and experimental approach
Tiwari, K. (Speaker)[1]; Nousia, M.E.[2]; Fernandez, N.[3]; Gebert, A.[3]; Rizzi, P.[1]; Lekka, C.E.[2]
[1]University of Turin; [2]University of Ioannina; [3]Leibniz IFW Dresden

3:30 PM | Lecture
Biocompatible β-Ti-based alloys for bone implants by ab initio and experimental data
Lekka, C. (Speaker)[1]; Alberta, L.A.[2]; Calin, M.[2]; Fortouna, Y.[1]; Gebert, A.[2]; Nousia, M.[1]; Rizzi, P.[3]; Tiwari, K.[3]
[1]University of Ioannina; [2]Leibniz Institute for Solid State and Materials Research (IFW), Dresden; [3]Università di Torino

3:50 PM | Lecture
Tailoring the microstructure and mechanical properties of a beta Ti-Nb alloy for bone implants by laser powder bed fusion
Pilz, S. (Speaker)[1]; Günther, F.[2]; Zimmermann, M.[2]; Kühn, U.[1]; Gebert, A.[1]
[1]Leibniz IFW Dresden; [2]TU Dresden, Institute of Materials Science; Fraunhofer Institute for

4:10 PM | Lecture
Surface modification of nitinol parts manufactured by LPBF
Contreras-Almengor, O. (Speaker)[1]; Ordoño, J.[1]; Echeverry-Rendón, M.[1]; Li, M.[1]; Díaz-Lantada, A.[2]; Molina-Aldareguia, J.[2]
[1]IMDEA Materials Institute, Madrid (Spain); [2]Universidad Politécnica de Madrid

Room SH 0.109

F: Materials for Healthcare

F08.02: Antimicrobial and cell adhesion strategies, drug release and implant diagnosis

2:30 PM | Highlight Lecture
Biodegradable antimicrobial materials for bone implants
Rau, J.V. (Speaker)[1]; Antoniac, I.[2]
[1]Italian National Research Council (CNR), Rome (Italy); [2]Politehnica University of Bucharest

2:50 PM | Lecture
Alternating current electrophoretic deposition of chemically modified chitosan on titanium implant surfaces for combating biofilm formation
Aktan, M.K. (Speaker)[1]; Amoli, M.S.[2]; Zayed, N.[1]; Srivastava, M.G.[1]; Teughels, W.[1]; Bloemen, V.[2]; Braem, A.[1]
[1]KU Leuven; [2]Campus Group T, KU

3:10 PM | Lecture
Cell adhesion and migration on Ti-based surfaces by theoretical and experimental studies
Lekka, C. (Speaker)[1]; Calin, M.[2]; Eckert, J.[3]; Gebert, A.[2]; Lips, K.S.[4]
[1]University of Ioannina; [2]IFW Dresden; [3]Austrian Academy of Sciences, Leoben (Austria); [4]University of Giessen

3:30 PM | Lecture online
Enhancement of antibacterial and antithrombogenic properties of heparinized titanium substrates by alternating current electrophoretic deposition
Özgüzar, H.F. (Speaker)[1]; Aktan, M.K.[2]; Kabay, G.[2]; Meydan, A.E.[4]; Trouillet, V.[5]; Göçmen, J.S.[4]; Braem, A.[2]

Room SH 1.101

D: Characterization and Modeling

D01.02: Thin Films & Coatings

2:10 PM | Highlight Lecture
Failure of Metal-Ceramic Thin-Films on Steel Substrates
Brinckmann, S. (Speaker)[1]; Chen, R.[2]; Grigorev, N.[3]; Schwaiger, R.[2]
[1]Forschungszentrum Jülich GmbH; [2]Forschungszentrum Jülich; [3]RWTH Aachen

2:30 PM | Lecture
Atomic scale simulations study of deformation field and thermal stability of nano-twinned gold thin films
Woguem, Y.F. (Speaker)[1]; Brochard, S.[1]; Durinck, J.[1]; Godard, P.[1]
[1]University of Poitiers, Chasseneuil-du-Poitou (France)

2:50 PM | Lecture
Creep-dominated fatigue of freestanding gold thin films
Krapf, A. (Speaker)[1]; Cordill, M.[2]; Gebhart, D.[2]; Merle, B.[3]
[1]Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Kassel; [2]Erich Schmid Institute of Materials Science, Leoben (Austria); [3]University of Kassel, Institute of Materials Engineering

3:10 PM | Lecture
Elasto-plastic buckles on gold thin film
Hurier, M. (Speaker)[1]
[1]PPrime, Université de Poitiers, CNRS, ISAE, ENSMA

3:30 PM | Lecture
Modulus and yield strength measurements of ALD coatings with thicknesses between 5nm and 100nm
Chudoba, T. (Speaker)[1]; Mackosz, K.[2]; Utke, I.[2]
[1]ASMEC Advanced Surface Mechanics GmbH, Dresden; [2]EMPA - Swiss Federal Laboratories for Materials Science and Technology, Thun

3:50 PM | Lecture
Micromechanical properties of a thickness controlled multi-layered thin film
Kalacska, S. (Speaker)[1]; Ispánovity, P.D.[2]; Kermouche, G.[3]; Michler, J.[4]; Pethö, L.[4]
[1]Laboratoire Georges Friedel, CNRS, Saint-Étienne (France); [2]Eötvös Loránd University, Budapest (Hungary); [3]Mines St. Etienne, Saint-Étienne (France);

4:10 PM | Lecture
Mechanical testing of nanometric Al/Ni multilayers via Molecular Dynamics simulations
Schwarz, F. (Speaker)[1]; Spolenak, R.[2]
[1]ETH Zurich, Zürich (Switzerland); [2]ETH Zürich

Room SH 1.104

D: Characterization and Modeling

D02.02: In situ (S)TEM materials characterization

2:10 PM | Highlight Lecture
A Peltier stage cooled sample holder tip for the in situ study of water vapor / liquid equilibrium and the hygroscopic behaviour of aerosols in an ETEM
Epicier, T. (Speaker)[1]; Ehret, E.[1]; Santos Aires, F.J.C.[1]; Vas, J.[2]; Aouine, M.[3]; Landrivon, E.[3]; Massin, L.[2]; Duchamp, M.[2]
[1]University of Lyon - CNRS,

2:30 PM | Lecture online
Characterization of electron-beam-sensitive materials in liquid state with multiscale STEM tomography in ESEM and ETEM
Lebas, L.-M. (Speaker)[1]; Roiban, L.[1]; Trillaud, V.[1]; Aouine, M.[2]; Masenelli-Varlot, K.[1]
[1]Mateis - INSA Lyon; [2]IRCELYON - CNRS, Lyon (France)

2:50 PM | Lecture
Development of a stable cryogenic in situ biasing system for atomic resolution (S)TEM
Pivak, Y. (Speaker)[1]; Sun, H.[1]; Van Omme, T.[1]; Conroy, M.[2]; Molina-Luna, L.[3]
[1]DENSsolutions, Delft (Netherlands); [2]Department of Materials, Faculty of Engineering, Imperial College London; [3]Advanced Electron Microscopy

3:10 PM | Lecture
In situ Off-Axis Electron Holography and Electron Beam Induced Current Measurements of III-V Junctions for Solar Cell Applications
Mergner, V. (Speaker)[1]; Kovacs, A.[1]; Schygulla, P.[2]; Lackner, D.[2]; Jaeger, W.[3]; Dimroth, F.[2]; Dunin-Borkowski, R.[1]; Cooper, D.[4]
[1]Forschungszentrum Jülich GmbH;

3:30 PM | Lecture
In-Situ and Operando TEM for CO2 catalytic conversion investigation
Rezkallah, J. (Speaker)[1]; Moldovan, S.[1]; Sauvage, X.[1]; Witulski, B.[2]
[1]GPM Laboratory, CNRS UMR 6634, Rouen University, Normandy, Saint Etienne du Rouvray (France); [2]LCMT Laboratory, CNRS UMR 6507, ENSICAEN & Caen University,

3:50 PM | Lecture
In-situ TEM reduction of a solid oxide cell with NiO/YSZ fuel electrode
Korneychuk, S. (Speaker)[1]; Grosselindemann, C.[1]; Menzler, N.H.[2]; Weber, A.[1]; Pundt, A.[1]
[1]Karlsruhe Institute of Technology; [2]Forschungszentrum Jülich GmbH

4:10 PM | Lecture
Structural Dynamics Measured Using In Situ Electron Microscopy
Hansen, T.W. (Speaker)[1]; Leth Larsen, M.H.[1]; Liu, P.[1]; Lomholdt, W.B.[1]; Nuñez Valencia, C.[1]; Schiøtz, J.[1]
[1]Technical University of Denmark, Kgs. Lyngby (Denmark)

Room SH 1.105

E: Energy and Transportation

E06.02: Na- and K-based batteries

3:10 PM | Highlight Lecture
Operando 3D imaging of a Sodium-based cathode material in a laboratory X-ray microscope
Kutukova, K. (Speaker)[1]; Richter, M.[1]; Shapovalov, V.[2]; Zschech, E.[1]
[1]deepXscan GmbH, Dresden; [2]Southern Federal University, Rostov on Don (Russia)

3:30 PM | Lecture
Structural, Electrochemical and Theoretical Investigation of a High Voltage Layered P2-NaMnNi Oxide versus an Mg-doped P2-NaMnNi Oxide
Gauckler, C. (Speaker)[1]
[1]Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW), Ulm

3:50 PM | Lecture online
Exploration of P3-type layered oxides for rechargeable potassium-ion batteries
Barpanda, P. (Speaker)[1]
[1]Indian Institute of Science, Bangalore (India)

4:10 PM | Lecture
Unraveling lignin-based matrices for self-healable and sustainable potassium batteries
Trano, S.[1]; Griffini, G.[2]; Bella, F. (Speaker)[1]; Pascuzzi, G.[2]; Corsini, F.[2]; Tatsi, E.[2]; Fagiolari, L.[1]; Amici, J.[1]; Francia, C.[1]; Bodoardo, S.[1]; Turri, S.[2]
[1]Politecnico di Torino; [2]Politecnico di Milano

Room SH 1.106

E: Energy and Transportation

E03.02: Materials for Space Applications II

2:10 PM | Keynote Lecture
Spark plasma sintering of TiC powders produced by self-propagating synthesis
Moreno, R. (Speaker)[1]; Alcázar, C.[2]; García-Fernández, M.[2]; Rodríguez, M.A.[2]
[1]Instituto de Cerámica y Vidrio - CSIC, Madrid (Spain); [2]Instituto de Cerámica y Vidrio, Madrid (Spain)

2:50 PM | Highlight Lecture
High Temperature Phase Transformation in NiTi-Zr and NiTi-Zr,Cu Shape Memory Alloys
Cooper, S. (Speaker)[1]; Aouadi, S.[1]; Voevodin, A.[1]; Ghoshal, A.[2]; Young, M.[1]
[1]University of North Texas, Denton, Texas (United States); [2]DEVCOM Army Research Laboratory, Aberdeen Proving Ground, Maryland (United States)

3:10 PM | Lecture online
Structure and microstructure of AlCoCrFeNiMn high-entropy alloys
Plevachuk, Y. (Speaker)[1]; Janičkovič, D.[2]; Janotova, I.[2]; Orovcik, L.[2]; Poverzhuk, V.[1]; Svec J., P.[2]; Svec Sr., P.[2]
[1]Ivan Franko National University of Lviv; [2]Institute of Physics, Slovak Academy of Sciences, Bratislava (Slovakia)

3:30 PM | Lecture
Electrochemical surface technologies for space applications
Dietz, A. (Speaker)[1]
[1]Fraunhofer Institute for Surface Engineering and Thin Films IST, Braunschweig

3:50 PM | Lecture
CoSMIc: Complex Concentrated Silicides fabricated by Melt Infiltration approach – a new class of ultra-high temperature materials beyond superalloys
Pasini, W. (Speaker)[1]; Polkowski, W.[1]; Polkowska, A.[1]; Nowak, R.[1]; Bruzda, G.[1]; Kudyba, A.[1]; Górniewicz, D.[2]; Dworecka-Wójcik, J.[2];

4:10 PM | Lecture online
Doped titania nanoparticles as building blocks for solid foam filters for applications in aerospace
Vaccari, M.[1]; Cristofolini, L.[1]; Orsi, D. (Speaker)[1]; Lorusso, V.[1]; Baraldi, A.[1]; Bosio, A.[1]; Pontiroli, D.[1]; Liggieri, L.[2]; Ravera, F.[2]; Santini, E.[2]
[1]Università di Parma; [2]CNR, Genova (Italy)

Room SH 1.107

E: Energy and Transportation

E05.02: Li-ion Batteries: Negative Electrode Materials and Interfaces

2:10 PM | Keynote Lecture
Specific Polymer Binder Materials for Stabilization of Silicon Based Anode
Matsumi, N. (Speaker)[1]
[1]Japan Advanced Institute of Science and Technology, Nomi (Japan)

2:50 PM | Lecture
Influence of extruder set-up and process parameters on the product quality of solid polymer electrolytes using solvent free extrusion
Platen, K. (Speaker)[1]; Langer, F.[1]; Schwenzel, J.[1]
[1]Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM,

3:10 PM | Lecture
An innovative and high-performance porous germanium anode for Lithium-ion battery
Diolaiti, V. (Speaker)[1]; Andreoli, A.[1]; Vincenzi, D.[1]; Mangherini, G.[1]; Bernardoni, P.[1]
[1]University of Ferrara

3:30 PM | Highlight Lecture
SiOx coated Graphite with Inorganic Aqueous Binders as High performance Anode for Lithium Ion Batteries
Trivedi, S. (Speaker)[1]; Fichtner, M.[2]
[1]Helmholtz Institute Ulm (HIU); [2]Helmholtz Instiutute Ulm

3:50 PM | Lecture
Mechanical discrete approach of silicon/graphite-based anode breathing
Boivin, T. (Speaker)[1]; Gillia, O.[1]; Mathieu, B.[1]; Porcher, W.[1]
[1]French Atomic Energy and Alternative Energy Commission (CEA) - Liten, Grenoble (France)

4:10 PM | Lecture online
Li-ion storage mechanism in spinel-structured high-entropy (Mn,Fe,Co,Ni,Zn) oxide nanofibers as anode material for rechargeable batteries
Triolo, C.[1]; Santangelo, S. (Speaker)[1]; Maisuradze, M.[2]; Li, M.[2]; Liu, Y.[3]; Pagot, G.[4]; Ponti, A.[5]; Di Noto, V.[4]; Giorgetti, M.[2]; Pinna, N.[3]

Room SH 1.108

E: Energy and Transportation

E07.02: Electrocatalysts and MEAs for the acid and the alkaline environment

3:10 PM | Highlight Lecture
Effect of the calcination temperature on the structure and performance of Nickel-Iron-oxide catalysts for application in anion-exchange membrane electrolyzers
Capri, A.[1]; Lo Vecchio, C. (Speaker)[1]; Gatto, I.[1]; Baglio, V.[1]
[1]National Council of Research,

3:30 PM | Lecture online
Effect of the calcination temperature and composition on the electrocatalytic activity of electrospun spinel-type high-entropy transition metal oxide nanofibers for oxygen evolution in alkaline medium
Triolo, C. (Speaker)[1]; Pagot, G.[2]; Moulaee, K.[3]; Ponti, A.[4];

3:50 PM | Lecture
An innovative tandem photoelectrochemical cell
Lo Vecchio, C.[1]; Giacoppo, G.[1]; Barbera, O.[1]; Carbone, A.[2]; Baglio, V.[1]; Aricò, A.S.[1]; Trocino, S. (Speaker)[1]
[1]Institute for Advanced Energy Technologies "Nicola Giordano" - CNR-ITAE, MESSINA (Italy); [2]CNR-ITAE

4:10 PM | Lecture online
Developing tailored materials for the industrial production of AEM electrolyzers through a statistical approach
Barbi, S. (Speaker)[1]; Discepoli, G.[1]; Milani, M.[1]; Montorsi, L.[1]; Montorsi, M.[1]
[1]University of Modena and Reggio Emilia

Room SH 0.101

F: Materials for Healthcare

F01.03: Calcium Phosphates

5:00 PM | Lecture
Sintering of low-crystalline calcium phosphates by uniaxial compaction at room temperature
Rubenis, K. (Speaker)[1]; Kovrlija, I.[1]; Locs, J.[1]; Vecstaudza, J.[1]; Zemjane, S.[1]
[1]Riga Technical University

5:20 PM | Lecture | online
UMAOH CaP coating modified with PLGA as a carrier for antibacterial and immunomodulatory drugs
Prosolov, K. (Speaker)[1]; Komarova, E.[1]; Kazantseva, E.[1]; Lozhkomoev, A.[1]; Kazantsev, S.[1]; Senkina, E.[1]
[1]Institute of Strength Physics and Materials Science of Siberian Branch of Russian Academy of

Room SH 0.105

F: Materials for Healthcare

F01.04: Bioinert Nanoparticles and Biosensors

5:00 PM | Lecture
Surface-engineered CeO2 nanocrystals: A potential nanomedicine for oxidative stress mitigation
Sarkar, S. (Speaker)[1]; Srivastava, R.[1]; Kulkarni, A.[1]
[1]Indian Institute of Technology Bombay, Mumbai (India)

5:20 PM | Lecture
Enhancing Pt (IV) complexes anticancer activity upon encapsulation in stimuli responsive nanocages
Sancho-Albero, M. (Speaker)[1]
[1] Mario Negri Institute for Pharmacological Research, Milano (Italy)

5:40 PM | Lecture | online
Wearable Stretchable Microneedle-Based Patch for Online Detection of Biomarkers in Interstitial Fluids
Omar, R. (Speaker)[1]
[1]Technion - Israel Institute of Technology, Haifa (Israel)

Room SH 0.106

F: Materials for Healthcare
E: Energy and Transportation

E01.01: Metallic and Hybrid Materials

5:00 PM | Lecture | online
A Review on Materials for Advanced Railway Systems
Santos, R. (Speaker)[1]; Ferreira, L.[1]
[1]Associação Centro de Competências Ferroviário, Matosinhos (Portugal)

5:20 PM | Lecture
Cast hybrid compound between CFRP and aluminium using thermally insulating coating systems
Sulz, A.-K. (Speaker)[1]; Clausen, J.[1]; Marx, A.[2]; Schiebel, P.[3]; Struß, A.[1]
[1]Fraunhofer IFAM Bremen; [2]Faserinstitut Brmen e.V., Bremen; [3]Faserinstitut Bremen e.V.

5:40 PM | Lecture
Distortion Compensation via Adaptive Cooling Strategies for Heat Treated High Pressure Die Casting Components
Struss, A. (Speaker)[1]; Lehmhus, D.[1]; Toenjes, A.[2]; Husemann, L.[2]; Fritsching, U.[3]; Achelis, L.[3]; Kamenov, D.[3]
[1]Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, Bremen;

6:00 PM | Lecture | online
Combining Metal Additive Manufacturing and Casting Technology: High Performance Cooling Channels for Electric Powertrain Components
Czekalla, M. (Speaker)[1]; Lehmhus, D.[2]; Li, G.[1]; Rahn, T.[2]; Struß, A.[2]
[1]Fraunhofer Research Institution for Additive Manufacturing

6:20 PM | Lecture
Near Infrared Laser Powder Bed Fusion Processed Copper and Copper Alloys for Electrical Vehicle applications
Vanmeensel, K. (Speaker)[1]
[1]KU Leuven

Room SH 0.107

F: Materials for Healthcare

F07.03: Zn-based bioresorbable alloys

5:00 PM | Highlight Lecture
Microstructure-property relationships of Fe-Mn-C alloys for bioresorbable vascular implants
Otto, M. (Speaker)[1]; Gebert, A.[1]; Freudenberger, J.[2]; Hufenbach, J.[2]
[1]Leibniz Institute for Solid State and Materials Research, Dresden; [2]Leibniz Institute for Solid State and Materials Research; Institute of Materials Science, Technische

5:20 PM | Highlight Lecture
Zr-based metallic glass as biomedical material for implants
Brouwer, E. (Speaker)[1]; Milke, E.[1]; Melde, V.[1]; Wachter, H.-J.[1]
[1]Heraeus AMLOY Technologies GmbH, Karlstein am Main

5:40 PM | Lecture
Effect of thermomechanical processing on the mechanical properties and biocorrosion behaviour of a Mg-3Zn-0.4Ca alloy
Hernandez, M. (Speaker)[1]; Torres, B.[1]; Rams, J.[1]; Hidalgo-Manrique, P.[1]
[1]Rey Juan Carlos University, Mostoles (Spain)

6:00 PM | Lecture
PEO-coated Bioresorbable Mg-alloy based Screw Implant for Orthopedic Application
Tiwari, A. (Speaker)[1]; Zerrer, J.[1]; Buling, A.[1]
[1]ELB - Eloxalwerk Ludwigsburg Helmut Zerrer GmbH

6:20 PM | Lecture
Unexpected microstructural evolution of Mg-Fe composites produced by high-pressure-torsion
Roostaei, M. (Speaker)[1]
[1]Austrian Academy of Sciences, Leoben (Austria)

Room SH 0.109

F: Materials for Healthcare

F08.03: Future trend coatings for biomedical devices

5:00 PM | Highlight Lecture | online
Comparison of the tribological properties of Ti2AlC2 and Ti3AlC MAX Phases coatings on AISI 304 and Si for a future hip replacement femoral head coating
Ccama Castro, G.A.[1]; Lopez Anton, A.G.[1]; Jamanca Abalos, K.A.[1]; Aguilar Hurtado, J.[2]; Schaaf, P.[3];

5:20 PM | Lecture
Bio-Macromolecular Coatings to Improve the Friction Response of Elastomeric Foils
Bauer, M.G. (Speaker)[1]; Burson-Thomas, C.[2]; Lieleg, O.[1]
[1]Technical University of Munich, Garching; [2]University of Southampton

5:40 PM | Lecture
a-C:H(:N) coatings for orthodontic applications: mechanical properties, corrosion resistance and in vitro biocompatibility
Fróis, A. (Speaker)[1]; Santos, A.C.[1]; Santos Louro, C.[1]
[1]University of Coimbra

6:00 PM | Lecture
Development of new hydroxyapatite coatings on magnesium for biomedical applications
Pulido González, N. (Speaker)[1]; Bonache, V.[1]; Fernández Hernán, J.P.[1]; García Zapata, J.M.[1]; Rams, J.[1]; Torres, B.[1]
[1]Rey Juan Carlos University, Madrid (Spain)

6:20 PM | Lecture
Geopolymer-chitosan composite coatings on AZ31 magnesium alloy: effect on biocorrosion
Rondinella, A. (Speaker)[1]; Zanocco, M.[1]; Tubaro, E.[1]; Andreatta, F.[1]; Maschio, S.[1]; Fedrizzi, L.[1]
[1]University of Udine

6:40 PM | Lecture
Sand Blasting Effect on Corrosion Performance of Stainless Steel
Gunay Bulutsuz, A. (Speaker)[1]; Dikici, B.[2]
[1]Yildiz Technical University, İstanbul (Turkey); [2]ATATURK UNIVERSITY, Erzurum (Turkey)

Room SH 1.101

D: Characterization and Modeling

D04.03: Shear and Hard Materials

5:00 PM | Highlight Lecture
Studying interface fracture of SiC composites locally using novel micromechanical specimens
Ast, J.[1]; Tian, C.[2]; Herre, P.[3]; Rohbeck, N.[2]; Michler, J.[2]; Christiansen, S.[1]; Schwiedrzik, J. (Speaker)[4]
[1]Fraunhofer IKTS, Fraunhofer Institute for Ceramic Technologies and Systems, Hermsdorf; [2]Empa,

5:20 PM | Lecture
Deformation mechanisms of grain boundary complexions under shear
Pemma, S. (Speaker)[1]; Janisch, R.[2]; Dehm, G.[1]; Brink, T.[1]
[1]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf; [2]Ruhr-Universität Bochum

5:40 PM | Lecture
Plastic deformation of intermetallic phases in the Fe-Ta(-Al) system depending on the crystal structure and chemical composition
Gasper, C. (Speaker)[1]; Gibson, J.[2]; Ding, K.[3]; Fang, X.[3]; Sun, P.-L.[1]; Luo, W.[1]; Springer, H.[1]; Korte-Kerzel, S.[1]
[1]RWTH Aachen University;

6:00 PM | Lecture
Interfacial strength of oxide inclusions in iron
Mortensen, A. (Speaker)[1]; Hernández Escobar, D.[1]; Slagter, A.[1]; Perosanz Amarillo, S.[1]
[1]École polytechnique fédérale de Lausanne

6:20 PM | Lecture
Deformation mechanism analysis of single crystal hematite Fe2O3 using nanoindentation
Sahu, S. (Speaker)[1]; Best, J.[1]; Dehm, G.[1]
[1]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf

6:40 PM | Lecture
Nanoindentation of embedded oxide inclusions in iron
Mortensen, A. (Speaker)[1]; Deillon, L.[2]; Everaerts, J.[2]; Slagter, A.[1]
[1]Laboratory of Mechanical Metallurgy-EPFL, Lausanne (Switzerland); [2]ETH, Zurich (Switzerland); [3]KU Leuven

Room SH 1.104

D: Characterization and Modeling

D02.03: Liquid phase materials characterization

5:00 PM | Lecture
Liquid phase TEM approached by controlled radiation chemistry: Studying non-classical crystallization of CeO2
Zschiesche, H. (Speaker)[1]; Piankova, D.V.[1]; Soroka, I.L.[2]; Jonsson, M.[2]; Tarakina, N.V.[1]
[1]Max Planck Institute of Colloids and Interfaces, Potsdam; [2]KTH Royal Institute of Technology,

5:20 PM | Lecture
Liquid-Phase TEM flow reactors with fast solution exchange dynamics
Merkens, S. (Speaker)[1]; Tollan, C.[1]; De Salvo, G.[1]; Bejtka, K.[2]; Fontana, M.[2]; Chiodoni, A.[2]; Chuvilin, A.[1]
[1]CIC nanoGUNE BRTA, Donostia-San Sebastian (Spain); [2]Istituto Italiano di Tecnologia, Torino (Italy)

5:40 PM | Lecture
Metal electrodeposition/strippin and 4D STEM analysis via operando liquid cell transmission electron microscopy
Pivak, Y. (Speaker)[1]; Park, J.[2]; Weber, D.[3]; Jo, J.[3]; Sun, H.[1]; Eichel, â.-A.[4]; Basak, S.[5]
[1]DENSsolutions, Delft (Netherlands); [2]Institute of Energy and Climate Research,

6:00 PM | Lecture
Operando characterization of plaster setting using Liquid-Phase Scanning Electron Microscopy
Wozniak, A.[1]; Fantou, A.[1]; Malchère, A.[1]; Masenelli-Varlot, K. (Speaker)[1]; Meille, S.[1]; Tadier, S.[1]
[1]Univ Lyon, INSA Lyon, Villeurbanne (France)

6:20 PM | Highlight Lecture
Technological advances and applications in liquid phase transmission electron microscopy
Yesibolati, M.N. (Speaker)[1]; Søndergaard Larsen, M.[1]; Kadkhodazadeh, S.[1]; J. Zaluzec, N.[2]; Mølhave, K.[1]
[1]Technical University of Denmark, Kgs. Lyngby (Denmark); [2]Argonne National Laboratory

6:40 PM | Lecture
Understanding Zn Dendrite Growth in Different Aqueous Electrolytes by in situ liquid cell TEM
Yuan, Y. (Speaker)[1]; Pu, S.[1]; Li, Z.[1]; Robertson, A.W.[2]
[1]University of Oxford; [2]University of Warwick, Coventry (United Kingdom)

Room SH 1.105

E: Energy and Transportation

E08.03: Batteries based on multivalent shuttles

5:00 PM | Keynote Lecture
A polyanionic mixed-phosphate compound as a high-potential cathode material for Mg ion battery
Gong, R. (Speaker)[1]
[1]Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg, Ulm

5:40 PM | Lecture
Decoupling, Quantifying, and Restoring Aging-Induced Zn Anode Losses in Rechargeable Aqueous Zinc Batteries
Li, Z. (Speaker)[1]; Bruce, P.[1]; Robertson, A.[2]
[1]University of Oxford; [2]University of Warwick

6:00 PM | Lecture
Dual cation co-intercalation strategy for Mg batteries by employing dual-salt electrolytes: a case study of TiS2
Roy, A. (Speaker)[1]
[1]Helmholtz Institute Ulm (HIU)

Room SH 1.106

E: Energy and Transportation

E03.03: Materials and Technologies for Space Exploration

5:00 PM | Highlight Lecture
Manufacture of metallic honeycomb structures by additive manufacture
Narciso, J. (Speaker)[1]; Figueroa-Quintero, L.[1]; Ramos-Fernández, E.[1]
[1]University of Alicante

5:20 PM | Lecture
Additive manufacturing of metallic glass using a powder bed in space
Clozel, M. (Speaker)[1]; Neumann, C.[1]; Thore, J.[1]
[1]German Aerospace Center (DLR), Köln

5:40 PM | Lecture
Microstructural properties determination of additively manufactured Al alloys using image processing
Karimi, J. (Speaker)[1]; Bohlen, A.[1]; Seefeld, T.[1]
[1]BIAS - Bremer Institut für angewandte Strahltechnik GmbH, Bremen

6:00 PM | Lecture
Materials Design for Space under ISRU-mindset: Interaction phenomena between SiO2 and liquid Al-based industrial alloys
Giuranno, D. (Speaker)[1]; Bruzda, G.[2]; Kudyba, A.[2]; Nowak, R.[2]; Polkowski, W.[2]; Novakovic, R.[3]
[1]National Research Council, Genoa (Italy); [2]Łukasiewicz Research

6:20 PM | Lecture
ISRU-approach for designing and fabricating successfully composite materials
Giuranno, D. (Speaker)[1]; Bruzda, G.[2]; Buscaglia, M.T.[1]; Kudyba, A.[2]; Nowak, R.[2]; Polkowski, W.[2]; Novakovic, R.[1]
[1]National Research Council of Italy, Genoa (Italy); [2]Łukasiewicz Research Network, Krakow (Poland)

6:40 PM | Lecture
Synthesis of energy-efficient "enough-to-use" composite materials by sintering
Kvaratskheliya, A. (Speaker)[1]
[1]Universität Bremen

Room SH 1.107

E: Energy and Transportation

E05.03: Lithium Batteries: Positive Electrode Materials and Interfaces

5:00 PM | Lecture
Implications of solvent variation on the process design of synthesizing β-Li3PS4
Gries, A. (Speaker)[1]; Langer, F.[1]; Schwenzel, J.[2]
[1]Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, Braunschweig; [2]Fraunhofer Institute for Manufacturing Technology and Advanced

5:20 PM | Lecture
Phase Analysis and Atomically Resolved Delithiation Quantification of (Li)FePO4 by Integrated Differential Phase Contrast Imaging and Selected Area Electron Diffraction
Šimić, N. (Speaker)[1]; Knez, D.[2]; Hanzu, I.[2]; Grogger, W.[2]
[1]Graz Centre for Electron

5:40 PM | Lecture
Planar gliding and vacancy condensation: The role of dislocations in the chemomechanical degradation of layered transition metal oxides
Sadowski, M. (Speaker)[1]; Albe, K.[1]; Sicolo, S.[2]
[1]Technical University of Darmstadt; [2]BASF SE, Ludwigshafen

6:00 PM | Lecture
Atomistic analysis of volume changes in tungsten-bronze-type compounds A_xFeF_3 during intercalation of A cations (A=Li, Na, K)
Baumann, A.F. (Speaker)[1]; Mutter, D.[2]; Urban, D.F.[2]; Vogt, A.[3]; Geßwein, H.[3]; Chable, J.[3]; Binder, J.R.[3]; Elsässer, C.[1]
[1]Freiburger

6:20 PM | Lecture
K0.5FeF3 as a new zero-strain cathode material for lithium-ion batterie
Vogt, A. (Speaker)[1]; Geßwein, H.[1]; Chable, J.[1]; Baumann, A.[2]; Mutter, D.[3]; Urban, D.[3]; Elsässer, C.[2]; Lhoste, J.[4]; Binder, J.[1]
[1]Karlsruhe Institute of Technology (KIT); [2]Freiburger Materialforschungszentrum; [3]Fraunhofer IWM, Freiburg;

6:40 PM | Highlight Lecture | online
Exploration of hydroxy(fluoro)sulfate frameworks for Li-ion batteries
Barpanda, P. (Speaker)[1]
[1]Indian Institute of Science, Bangalore (India)

Room SH 1.108

E: Energy and Transportation

E07.03: Membranes for AEM Electrolyzers

5:00 PM | Keynote Lecture | online
Hydroxide conducting membranes for water electrolysers
Henkensmeier, D. (Speaker)[1]; Aili, D.[2]; Bae, C.[3]; Bouzek, K.[4]; Hnát, J.[4]; Jensen, J.O.[2]; Khalid, H.[1]; Kraglund, M.R.[2]; Najibah, M.[1]; Park, H.S.[1]; Razmjooei, F.[5]; Trisno, M.L.A.[1]
[1]KIST / Korea Institute of Science and Technology, Seoul (South Korea); [2]Technical University of Denmark (DTU), Kgs. Lyngby (Denmark); [3]Rensselaer Polytechnic Institute, Troy (United States); [4]University of Chemistry and Technology, Prague; [5]German Aerospace Center (DLR), Stuttgart

5:40 PM | Lecture
Poly(aryl-piperidinium) block copolymers anion exchange membranes for water electrolysis
Caielli, T. (Speaker)[1]; Bonizzoni, S.[1]; Ferrari, A.R.[1]; Mustarelli, P.[1]; Sediva, E.[1]; Stucchi, D.[1]
[1]University of Milano-Bicocca

6:00 PM | Lecture
Quaternary ammonium Aquivion®-based membranes for water electrolysis
Carbone, A. (Speaker)[1]; Gatto, I.[1]; Pedicini, R.[1]; Campagna Zignani, S.[1]; Oldani, C.[2]; Cattaneo, A.[2]; Aricò, A.S.[1]
[1]CNR-ITAE, Messina (Italy); [2]Solvay Specialty Polymers, Milano (Italy)

6:20 PM | Lecture | online
Synthesis and Water Electrolysis Application of Poly(fluorene) Anion Conductive Polymers
Nara, Y. (Speaker)[1]; Tomita, M.[1]; Kasahara, K.[2]; Nagasawa, K.[3]; Kuroda, Y.[4]; Mitsushima, S.[4]; Kawakami, H.[1]; Tanaka, M.[1]
[1]Tokyo Metropolitan University; [2]Osaka university; [3]National Institute of Advanced Industrial

4:30 PM | Coffee Break
Hörsaalzentrum Foyer

Room HZ 1

Plenaries **B:** Structural Materials

B07.04: Microstructure evolution in structural materials

10:30 AM | Keynote Lecture
Microstructural characterisation of fatigue cracks in WC-Co using large-area EBSD
Tong, V. (Speaker)[1]; Llanes, L.[2]
[1]National Physical Laboratory, Teddington (United Kingdom); [2]Universitat Politècnica de Catalunya, Barcelon (Spain)

11:10 AM | Highlight Lecture
Characterization of plasticity in steels by Electron Channeling Contrast Imaging (ECCI) and Transmission Forescattered Electron Imaging (t-FSEI)
Gutierrez-Urrutia, I. (Speaker)[1]; Shibata, A.[1]
[1]National Institute for Materials Science (NIMS), Tsukuba (Japan)

11:30 AM | Lecture
Microstructural origin of high work-hardening ability in ultrafine-grained CoCrNi medium entropy alloy
Yoshida, S. (Speaker)[1]; Yamashita, G.[1]; Ikeuchi, T.[1]; Bai, Y.[2]; Shibata, A.[2]; Tsuji, N.[1]
[1]Kyoto University; [2]Dalian University of Technology; [3]National Institute of Materials Science, Tsukuba (Japan)

11:50 AM | Lecture
Mechanical behavior of biocompatible (26at%)Nb-Ti alloy
Caruel, M. (Speaker)[1]; Lavernhe-Taillard, K.[1]; Nunes, C.[2]; Xavier De Freitas, B.[2]; Hubert, O.[1]
[1]ENS Paris-Saclay, Gif-Sur-Yvette (France); [2]University of Sao Paulo - USP, Lorena (Brazil)

12:10 PM | Lecture
Alpha Phase Precipitation and Mechanical Behavior in a Cu modified Metastable Ti-5553 Alloy
Starck, L. (Speaker)[1]; Sangali, M.[2]; Opini, V.[2]; Lopes, E.[2]; Caram, R.[1]
[1]University of Campinas; [2]University of campinas, Campinas (Brazil)

12:30 PM | Lecture
Boron segregation in martensitic and tempered martensitic steels improving the resistance to hydrogen embrittlment
Hachet, G. (Speaker)[1]; Ponge, D.[1]; Gault, B.[1]; Raabe, D.[1]
[1]Max Planck Institute fur Eisenforschung, Dusseldorf

Room HZ 2

B: Structural Materials

B07.16: Composites design and characterisation

10:50 AM | Lecture
Aluminium matrix composites for lightweight components
Lattanzi, L. (Speaker)[1]; Awe, S.[2]; Jansson, P.[3]; Rudenstam, C.[4]; Westergård, R.[5]; Jarfors, A.E.[1]
[1]School of Engineering - Jönköping University; [2]Automotive Components Floby AB; [3]Comptech i Skillingaryd; [4]Husqvarna AB, Huskvarna (Sweden); [5]Gränges

11:10 AM | Lecture
In-situ studies of phase evolution in metastable beta ZrNb alloys
Veverková, A. (Speaker)[1]; Harcuba, P.[1]; Veselý, J.[1]; Barriobero-Vila, P.[2]; Doležal, P.[1]; Šmilauerová, J.[1]; Stráský, J.[1]; Janeček, M.[1]
[1]Charles University, Prag (Czech Republic); [2]Technical University of Catalonia (UPC), Barcelona (Spain)

11:30 AM | Lecture
Quantification of interface effects in laminated metal composites (LMCs) by loading-unloading-reloading tensile tests
Kuglstatter, M. (Speaker)[1]; Pohl, P.M.[1]; Höppel, H.W.[1]; Göken, M.[1]
[1]Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)

11:50 AM | Lecture
Homogeneisation of composite materials with fractional viscoelastic constituents
Vernier, P. (Speaker)[1]; Brenner, R.[2]
[1]Sorbonne Université, CNRS, Institut Jean Le Rond d'Alembert, F-75005 Paris, France; [2]Sorbonne Université, Paris (France)

12:10 PM | Lecture
Molecular Dynamics Study of effects of Helium configurations on crack tip performance in Nickel
Sharma, S. (Speaker)[1]
[1]Indian Institute of Technology, Roorkee, ROORKEE (India)

12:30 PM | Lecture
Mechanical behavior of h-BN reinforced PE based nanocomposites with modified interface
Parashar, A. (Speaker)[1]; Chaurasia, A.[2]
[1]Indian Institute of Technology Roorkee; [2]PDPU, Gandhinagar (India)

Room HZ 3

B: Structural Materials

B03.04: Innovative materials solutions

11:10 AM | Lecture
Heat-treatment optimization for 3D printed IN939 nickel-based superalloy
Šiška, F.[1]; Kubena, I. (Speaker)[1]; Babinský, T.[1]; Šulák, I.[1]
[1]Institute of Physics of Materials, Czech Academy of Sciences, Brno (Czech Republic)

11:30 AM | Lecture
Additive manufacturing of the hypo-eutectic medium entropy alloy Al0.75CrFeNi2.1 by LPBF: alloy selection, microstructure evolution and properties
Hecht, U. (Speaker)[1]; Barriobero-Villa, P.[2]; Cazic, I.[3]; Gein, S.[3]; Navaeilavasani, N.[3]
[1]ACCESS e.V., Aachen; [2]Technical University of Catalonia, Barcelona

11:50 AM | Lecture
High temperature homogenization and deformation of refractory multi-principal element alloys
Rietema, C. (Speaker)[1]; McKeown, J.[1]; Shittu, J.[1]; Sims, Z.[1]; Baker, A.[1]; Ellyson, B.[1]; Elder, K.[1]; Perron, A.[1]; McCall, S.[1]; Voisin, T.[1]
[1]Lawrence Livermore National Laboratory, Livermore, California

12:10 PM | Lecture
Investigation of the castability of high-melting alloys based on refractory metals
Sandner, K. (Speaker)[1]
[1]University of Bayreuth

12:30 PM | Lecture
Thermal stability of dislocation structure and its effect on creep property in Austenitic 316L stainless steel manufactured by directed energy deposition
Li, Y. (Speaker)[1]; Džugan, J.[1]; Krajňák, T.[2]; Podaný, P.[1]; Veselý, J.[2]
[1]COMTES FHT a.s., Dobřany (Czech Republic); [2]Charles University, Prague (Czech Republic)

Room HZ 4

B: Structural Materials

B03.04: Multi-Property High-Entropy Alloys

10:30 AM | Highlight Lecture
High-entropy alloy catalysts for efficient water electrolysis
Liu, X.J. (Speaker)[1]; Li, R.[2]; Wang, X.Z.[1]; Lu, Z.P.[1]
[1]University of Science and Technology Beijing; [2]Northwestern Polytechnical University, Xi'an (China)

10:50 AM | Lecture
Mechanical strengthening of a soft-magnetic high-entropy alloy via Widmanstätten microstructure
Han, L. (Speaker)[1]; Maccari, F.[2]; Gutfleisch, O.[2]; Li, Z.[3]; Raabe, D.[3]
[1]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf; [2]Technical University of Darmstadt; [3]Max-Planck-Institut für

11:10 AM | Lecture
Design of ductile low-activation bcc multi-principal element alloys
Jiang, H. (Speaker)[1]; Huang, M.[2]
[1]University of Hong Kong; [2]The University of Hong Kong

11:30 AM | Lecture
Microstructure and martensitic transformation of NiTiCoHf high-entropy shape memory alloy
Kim, J. (Speaker)[1]; Seok, J.[1]; Kim, S.[1]; Pin, M.[1]; Song, G.[2]; Han, J.[1]
[1]Korea institute of industrial technology, Incheon (South Korea); [2]Kongju national university, Cheonan (South Korea)

11:50 AM | Lecture
Development of a Non-equimolar AlCrCuFeNi High-Entropy Alloy and Its Corrosive Response to Marine Environment
Xue, L. (Speaker)[1]; Ruan, H.[1]; Paredes, M.[2]
[1]The Hong Kong Polytechnic University; [2]Texas A&M University, Galveston (United States)

12:10 PM | Lecture
Effectiveness of Compositionally Complex Alloys as Hydrogen Barriers
Navarro Lopez, A. (Speaker)[1]; De Wispelaere, N.[1]; Duprez, L.[1]; Bianchin, A.[2]
[1]Onderzoekscentrum voor de Aanwending van Staal (OCAS), Zelzate (Belgium); [2]MBN nanomaterialia, Carbonera (Italy)

12:30 PM | Lecture
High temperature oxidation of FeCrNi medium entropy alloy in synthetic air
Mohring, W.[1]; Manzoni, A. (Speaker)[2]; Schneider, M.[3]; Laplanche, G.[3]; Hagen, S.[3]; Stephan-Scherb, C.[4]
[1]50Hertz Transmission GmbH, Berlin; [2]Berlin; [3]Ruhr-Universität Bochum; [4]Bundesamt für die Sicherheit der nuklearen Entsorgung, Berlin

Room HZ 5

B: Structural Materials

B01.04: Steels for future challenges

10:50 AM | Highlight Lecture
Air-hardening martensitic forging steels – An alternative to high alloyed nitriding steels
Gramlich, A.R.M. (Speaker)[1]
[1]RWTH Aachen University

11:10 AM | Lecture
A pathway to cheap, hydrogen resistant steels
Felfer, P. (Speaker)[1]; Göken, M.[2]; Khanchandani, H.[2]; Zeiler, S.[2]
[1]Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU); [2]Friedrich-Alexander Universität Erlangen-Nürnberg

11:30 AM | Lecture
Potential of metallurgical gradients for new lightweight design strategies
Münstermann, S. (Speaker)[1]; Könemann, M.[1]; Sparrer, Y.[1]; Stebner, S.[1]
[1]RWTH Aachen University

11:50 AM | Lecture
Novel low alloyed tool steel with high wear resistance
Boehm, A. (Speaker)[1]; Kochta, F.[1]; Giebeler, L.[1]; Kühn, U.[1]; Hufenbach, J.[1]
[1]Leibniz Institute for Solid State and Materials Research Dresden

12:10 PM | Lecture
Development and Processing of Novel Tough Ultrahigh Strength Steels Through Direct Quenching and Partitioning
Somani, M. (Speaker)[1]; Ghosh, S.[1]; Kantanen, P.[1]; Kömi, J.[1]; Porter, D.[1]
[1]University of Oulu

12:30 PM | Lecture
TRIP/TWIP laminate composites - manufacture, microstructure and mechanical properties
Seleznev, M.[1]; Renzing, C.[1]; Prahl, U.[1]; Biermann, H.[1]; Schmidtchen, M.[1]; Weidner, A. (Speaker)[1]
[1]TU Bergakademie Freiberg

Room HZ 6

B: Structural Materials

B.0.04: Corrosion

10:30 AM | Highlight Lecture
Challenges and solutions for Nanoparticle reinforced lightweight metal composites: an overview
Li, Q. (Speaker)[1]; Xu, Z.[2]; Shaffer, M.[2]; Zaiser, M.[3]
[1]Department of Aeronautics, Imperial College London; [2]Imperial College London; [3]University of Erlangen-Nuremberg, Fuerth

10:50 AM | Lecture
High speed visualisation of nanoparticle dispersion in analogue liquid of lightweight metal melt
Xu, Z. (Speaker)[1]; Beckwith, C.[2]; Kao, A.[2]; Li, Q.[1]; Shaffer, M.[1]; Tonry, C.[2]
[1]Imperial college london, London (United Kingdom); [2]University of Greenwich, London (United Kingdom)

11:10 AM | Highlight Lecture
"Corrosion damage" of multilayer composite pipes
Pajonk, G. (Speaker)[1]
[1]Institute of Materials Testing of Northrhine-Westphalia (MPA NRW), Dortmund

11:30 AM | Lecture
Evaluation of electrochemical behaviour and wet tribological resistance of Co based dental alloy produced by L-PBF
Lanzutti, A. (Speaker)[1]; Andreatta, F.[2]; Fedrizzi, L.[2]; Magnan, M.[2]; Sortino, M.[2]; Totis, G.[2]; Vaglio, E.[3]
[1]Università degli Studi di Udine; [2]University of Udine; [3]University of

11:50 AM | Lecture
Microstructure, mechanical and corrosion properties of CoCrFeNiZrx high-entropy alloys
Li, W. (Speaker)[1]
[1]Northwestern Polytechnical University Xi'an, Xi'an, Shaanxi (China)

12:10 PM | Lecture
Multiscale Characterization of Corrosion Behavior of the X80 Steel Welded Joints
Wang, S. (Speaker)[1]; Li, Y.[1]
[1]China University of Petroleum (East China), Qingdao (China)

12:30 PM | Lecture
On the mechanism for improving anti-pitting properties of Mn-contained CoCrFeMnNi alloy by removing Cr-depletion
Yu, K. (Speaker)[1]
[1]The University of Hong Kong

Room HZ 7

H: Materials for Circularity and Sustainability

H.09.04: Polymers, Waste Management und Solutions

10:50 AM | Highlight Lecture
Waste4Future – Sustainability Assessment of Recycling Process Networks
Vogelgesang, M. (Speaker)[1]; Li, C.[1]; Ionescu, E.[1]
[1]Fraunhofer IWKS, Alzenau

11:10 AM | Lecture
Catalytic recycling of medical plastic wastes over La0.6Ca0.4Co1–xFexO3–δ pre-catalysts for co-production of H2 and high-value added carbon nanomaterials
Yu, X. (Speaker)[1]; Chen, G.[1]; Widenmeyer, M.[2]; Kinski, I.[1]; Liu, X.[2]; Schüpfer, D.[1]; Homm, G.[1]; Weidenkaff, A.[1]; Weidenkaff, A.[2]

11:30 AM | Lecture
Glycolysis of sustainable polyesters for novel materials: a step towards closed-loop economy
Kantor-Malujdy, N. (Speaker)[1]; El Fray, M.[1]
[1]West Pomeranian University of Technology in Szczecin

11:50 AM | Lecture
Separation, analysis and optimization of Acetic Acid from Biomass Pyrolysis liquid products
Suryawanshi, R. (Speaker)[1]; Pfeiffer, T.[2]; Gunza, N.[1]; Schnell, R.[1]
[1]SRH Berlin University; [2]SRH Berlin University Applied Science

12:10 PM | Lecture
Tuneable properties of furan-based copolymers synthesized via enzymatic polycondensation and using vegetable-oil based monomer as building block
Sokolowska, M. (Speaker)[1]; El Fray, M.[1]
[1]West Pomeranian University of Technology in Szczecin

12:30 PM | Lecture
Influence of the contaminants in mechanically recycled Poly(Ethylene Terephthalate) [PET] : application to Injection Stretch Blow Molding process
Viora, L. (Speaker)[1]
[1]MinesParis

Room HZ 8

C: Processing

C01.04: PBF-LB of Fe-base alloys

10:50 AM | Highlight Lecture
The effect of the dislocation cells on the TRIP effect of metastable stainless steels processed by LPBF
Polatidis, E. (Speaker)[1]; Sofras, C.[2]; Capek, J.[2]; Smid, M.[3]; Jambor, M.[3]
[1]University of Patras; [2]Paul Scherrer Institute, Villigen (Switzerland); [3]Czech Academy of Sciences, Brno (Czech Republic)

11:10 AM | Lecture
Cell structure in 316L stainless steel produced by laser powder bed fusion: morphology, origin and effects of crystallography
Wang, X. (Speaker)[1]; Nadimpalli, V.K.[1]; Juul Jensen, D.[1]; Yu, T.[1]
[1]Technical University of Denmark, Kgs. Lyngby (Denmark)

11:30 AM | Lecture
Influence of Elevated Build Plate Preheating on Processing, Microstructure and Properties of Fe-0.45C Steel Produced by PBF-LB
Hearn, W. (Speaker)[1]; Bergmuller, S.[2]; Braun, J.[2]; Kaserer, L.[2]; Leichtfried, G.[2]; Hryha, E.[1]
[1]Chalmers University of Technology, Gothenburg (Sweden); [2]Universität Innsbruck

11:50 AM | Lecture
Design of cavities in 316L stainless steel by LPBF for joining with polylactic acid by FFF
Argyros, A.[1]; Maliaris, G.[2]; Michailidis, N. (Speaker)[1]
[1]Aristotle University of Thessaloniki; [2]International Hellenic University, Kavala (Greece)

12:10 PM | Lecture
Corrosion Resistant Tool Steel for Additive Manufacturing
Mohr, A. (Speaker)[1]; Conrads, J.[1]; Hill, H.[1]; Hoeren, K.[1]
[1]Deutsche Edelstahlwerke Specialty Steel GmbH & Co. KG, Krefeld

12:30 PM | Lecture
Solute segregation in selective laser melted 17-4PH alloys and effect of solution treatment on precipitation-hardening
An, S. (Speaker)[1]; Eo, D.-R.[2]; Choi, K.[3]; Sohn, I.[1]
[1]Yonsei University, Seoul (South Korea); [2]Korea Institute of Industrial Technology (KITECH), Siheung (South Korea); [3]Hanbat University, Daejeon (South Korea)

Room HZ 9

C: Processing

C01.15: Novel AM materials and processes

10:30 AM | Highlight Lecture
Improving the properties of additively manufactured WC-Co by alloying
Wengenmayr, E. (Speaker)[1]; Malchus, C.[1]; Schubert, T.[1]; Schurr, J.[1]; Bernthaler, T.[1]; Schneider, G.[1]
[1]Hochschule Aalen - Technik und Wirtschaft

10:50 AM | Lecture online
On the study of WC-12Co clads deposited by Direct Energy Deposition: a metallurgical investigation
Morales, C. (Speaker)[1]; Merlin, M.[1]; Fortini, A.[1]; Zambello, L.[1]; Garagnani, G.L.[1]
[1]University of Ferrara

11:10 AM | Lecture
Process studies using laser-powder based fusion on W-C-Ti material system
Malchus, C. (Speaker)[1]; Schubert, T.[1]; Wengenmayr, E.[1]; Schurr, J.[1]; Bernthaler, T.[1]; Schneider, G.[1]
[1]Aalen University

11:30 AM | Lecture
Microstructure investigation of Molybdenum processed by Electron beam powder bed fusion
Di Sturco, S. (Speaker)[1]
[1]Politecnico di Torino

11:50 AM | Lecture
Laser Metal Deposition repair of tantalum cathodes used in the AMIT cyclotron
Romano, T. (Speaker)[1]; Krogere, D.[2]; Lauer, H.[2]; Marquardt, F.[4]; Obradors, D.[5]; Ratkus, A.[6]; Torims, T.[6]; Vedani, M.[7]; Weinmann, M.[7]
[1]Politecnico di Milano; [2]Riga Technical University; [3]Fraunhofer Institute for Material and Beam

12:10 PM | Lecture
Solid-state 3D printing using additive friction stir deposition: Process parameter optimization
Pariyar, A. (Speaker)[1]; Guan, D.[1]
[1]University of Southampton

12:30 PM | Lecture
Residual stress depth distributions in cold gas sprayed metallic coatings
Gabani, D. (Speaker)[1]
[1]Karlsruhe Institute of Technology (KIT)

Room HZ 10

C: Processing

C09.01: Phase transformation and thermomechanical processing I

11:30 AM | Keynote Lecture
Impact of structural transformations and defect interactions at grain boundaries in nanocrystalline metallic materials
Wilde, G. (Speaker)[1]
[1]University of Münster

12:10 PM | Highlight Lecture
Tuning nanoscaled structures and properties by SPD induced phase transformations in Al alloys
Sauvage, X. (Speaker)[1]
[1]University of Rouen Normandy, Saint-Étienne-du-Rouvray (France)

12:30 PM | Lecture
Precipitation of Secondary Phases at Annealing of Nanocrystalline Co1Cr0.25Fe1Mn1Ni1 Alloy with 2 AT. % of Carbon
Ivanisenko, J. (Speaker)[1]; Kübel, C.[2]; Lu, Y.[2]
[1]Eggenstein-Leopoldshafen; [2]Karlsruhe Institute of Technology

Room HZ 11

C: Processing

C07.04: Controlling interface properties

12:10 PM | Keynote Lecture online
Advancing lubricants and solid interfaces by first principles materials design
Righi, M.C. (Speaker)[1]
[1]University of Bologna

Room HZ 12

C: Processing

C10.04: Thermomechanics, forming & machining

10:50 AM | Lecture
Physics-based simulation of flow stress properties of metallic alloys
Malakizadi, A. (Speaker)[1]
[1]Chalmers University of Technology, Göteborg (Sweden)

11:10 AM | Lecture
A numerical and experimental analysis of induction heating of large bearings
Juet, T. (Speaker)[1]; Ployart, D.[2]; kebir, h.[1]
[1]Université de Technologie de Compiègne, compiègne (France); [2]SKF France, St Cyr / Loire (France)

11:30 AM | Lecture
A numerical investigation on the influence of chip and work piece velocity profiles on tool temperature during dry machining
Najem, A. (Speaker)[1]; Altmeyer, G.[1]; Duchosal, A.[1]
[1]Université de Tours

11:50 AM | Lecture
Development of an Arbitrary Lagrangian Eulerian model in Abrasive Flow Machining to predict the flow of the medium
Baeza, C. (Speaker)[1]; Arrazola, P.[2]; Rech, J.[3]; Salvatore, F.[3]; Valiorgue, F.[3]
[1]ENISE, MONDRAGON UNIBERTSITATEA, SAINT ETIENNE (France); [2]MONDRAGON UNIBERTSITATEA, Mondragon

12:10 PM | Lecture
On the effects of variable heat flux on tool temperature in machining
Salame, C. (Speaker)[1]; Malakizadi, A.[1]
[1]Chalmers University of Technology, Gothenburg (Sweden)

12:30 PM | Lecture
A study of the grain chemical composition influence on fused silica polishing in water at nanoscale with molecular dynamic simulation
Ignacio Ahuir-Torres, J. (Speaker)[1]; Bingham, P.[2]; Chen, X.[1]; Mason, L.[3]; Walker, D.[4]; Yu, G.[4]; Li, H.[4]; Mishra, R.[4]; Akar, Y.[4]; Jackson, F.[4]
[1]Liverpool John Moores University,

Room HZ 1	Room HZ 2	Room HZ 3	Room HZ 4	Room HZ 5	Room HZ 6
Plenaries **B:** Structural Materials	**B:** Structural Materials	**B:** Structural Materials	**B:** Structural Materials	**B:** Structural Materials	**B:** Structural Materials

12:50 PM **I Lunch Break**
Lunch Area

12:10 PM
Poster Session
Area C
Hörsaalzentrum
Lecture Hall Center
Foyer 3rd Floor

B07.05: Characterization of structural materials

2:50 PM | Highlight Lecture
Microstructural Characterization of Dendritic Evolution Captured via Time-Resolved X-ray Tomography
Elder, K. (Speaker)[1]; Stan, T.[2]; Sun, Y.[2]; Voorhees, P.[2]; Xiao, X.[3]
[1]Lawrence Livermore National Laboratory; [2]Northwestern University, Evanston (United

3:10 PM | Lecture
Remaining strength under influence of corrosion morphology of Mg10Gd and Mg10Gd1Nd characterized by µCT
Maier, P. (Speaker)[1]
[1]Hochschule Stralsund

3:30 PM | Lecture
Adiabatic shear band formation in a non age-hardenable aluminium alloy
Schottstedt, L. (Speaker)[1]; Scholze, M.[1]; Wagner, M.F.-X.[1]
[1]Chemnitz University of Technology

3:50 PM | Lecture
A novel S-shaped sample geometry for the in-situ characterization of adiabatic shear banding
Scholze, M. (Speaker)[1]; Frint, P.[2]; Wagner, M.F.-X.[1]
[1]Chemnitz University of Technology; [2]Nordmetall GmbH, Neukirchen

4:10 PM | Lecture
Influence of polymer properties on the mechanical behaviour of 3D-printed auxetic metamaterials and honeycomb structures under bending load
Hartl, C.[1]; Spicale, S.[1]; Katrakova-Krüger, D. (Speaker)[1]
[1]TH Köln

B07.17: Atomistic simulations and computational developments

2:50 PM | Lecture
A working hardening model considering dislocations annihilation from perspective of statistical mechanics
Wei, W. (Speaker)[1]; Povoden-Karadeniz, E.[1]; Kozeschnik, E.[1]
[1]TU Wien

3:10 PM | Lecture
Atomic scale understanding of deformation mechanisms in single and polycrystalline transition-metal nitrides superlattices
Chen, Z. (Speaker)[1]; Bartosik, M.[2]; Gao, Z.[2]; Huang, Y.[3]; Huang, Y.[3]; Mayrhofer, P.H.[2]; Zhang, Z.[1]; Zheng, Y.[1]
[1]Austrian Academy of Sciences,

3:30 PM | Lecture
Atomistic mechanisms of twin nucleation from pyramidal II stacking faults
Hu, Y. (Speaker)[1]; Kochmann, D.M.[1]
[1]ETH Zurich

3:50 PM | Lecture
Computational Discovery of Ultra-Strong, Stable, and Lightweight Refractory Multi-Principal Element Alloys
Elder, K. (Speaker)[1]; Baker, A.[1]; Voisin, T.[1]; McCall, S.[1]; McKeown, J.[1]; Berry, J.[1]; Perron, A.[1]; Bocklund, B.[1]; Krajewski, A.[2]; Rietema, C.[1]; Shittu, J.[1]; Sims, Z.[1]; Henderson, H.[1]

4:10 PM | Lecture
Deformation and fracture of lamellar γ-TiAl microstructures: Insights from atomistic simulations
Neogi, A.[1]; Sen, O.C.[2]; Chauniyal, A.[2]; Janisch, R. (Speaker)[2]
[1]Ansys, Kharagpur (India); [2]Ruhr-University Bochum

B03.05: New materials for high temperature applications

3:10 PM | Highlight Lecture
Development of novel chromium-based superalloys for advanced concentrated solar power
Ma, K. (Speaker)[1]; Blackburn, T.[1]; Hernández, R.[2]; Kerbstadt, M.[3]; Onorbe, E.[2]; Navas, M.[2]; Galetz, M.[3]; Knowles, A.[1]
[1]University of Birmingham; [2]CIEMAT, Madrid (Spain); [3]DECHEMA-Forschungsinstitut, Frankfurt

3:30 PM | Lecture
First-principles study on the effect of alloying elements for the interface energetics of Cr-NiAl superalloy toward next generation concentrated solar power
Linnala, L. (Speaker)[1]; Biswas, A.[1]; Blackburn, T.[2]; Knowles, A.J.[2]; Laukkanen, A.[1]; Lindroos, M.[1]; Ma, K.[2]; Pinomaa, T.[1]; Vajragupta, N.[1]

3:50 PM | Lecture
Structural integrity at elevated temperature assessment of solid particles for concentrated solar power systems using ICME approach
Biswas, A. (Speaker)[1]; Andersson, T.[2]; Benameur, N.[3]; Laukkanen, A.[2]; Lindroos, M.[2]; Marlin, S.[3]; Pinomaa, T.[2]; Vajragupta, N.[2]
[1]VTT Technical Research Centre of

4:10 PM | Lecture
A combined molecular dynamics and dislocation dynamics simulation of dislocation mobility, dislocation density, and the stress-strain relationship in FeCrNi alloys
Kaloni, T. (Speaker)[1]; Prudil, A.[1]; Spearot, D.[2]; Torres, E.[3]
[1]Canadian Nuclear Lab, Chalk River (Canada); [2]University of Florida,

B05.05: Hydrogen Embrittlement of High-Entropy Alloys

3:10 PM | Highlight Lecture
Design of strong and ductile hydrogen-resistant high-entropy alloys
Li, Z. (Speaker)[1]; Wu, P.[1]; Fu, Z.[1]; Gan, K.[1]; Yan, D.[1]
[1]Central South University, Changsha (China)

3:30 PM | Lecture
Hydrogen diffusion and trapping in electrochemically and high-pressure charged multi-principal element alloys
Rhode, M. (Speaker)[1]; Nietzke, J.[1]; Steurer, F.[1]
[1]Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin

3:50 PM | Lecture
A strategy for designing alloys with improved hydrogen embrittlement resistance
Ousiabou, B. (Speaker)[1]; Conway, P.[1]; Ghassemali, E.[1]
[1]Jönköping University

4:10 PM | Lecture
Hydrogen embrittlement in TiZrNbTa high-entropy alloy: From grain to powder
Wang, H. (Speaker)[1]; Wang, X.Z.[1]; Liu, X.J.[1]; Wu, Y.[1]
[1]University of Science and Technology Beijing

B01.05: Stainless Steels

2:50 PM | Highlight Lecture
Study of an innovative solubilization annealing heat treatment of a thickwalled Duplex SAF 2507 stainless steel casting
Sordetti, F. (Speaker)[1]; Beltrame, G.[1]; Fedrizzi, L.[1]; Lanzutti, A.[1]; Magnan, M.[1]; Maranzana, C.[2]
[1]University of Udine; [2]Accicieria Fonderia Cividale S.p.A, Cividale del

3:10 PM | Lecture
Tension-compression asymmetry of metastable austenitic stainless steel studied by in-situ high-energy X-ray diffraction
Bönisch, M. (Speaker)[1]; Seefeldt, M.[1]
[1]KU Leuven, Heverlee, Leuven (Belgium)

3:30 PM | Lecture
Influence of aging temperature and time on the formation of reverted austenite and precipitation of Ni3Ti during aging of indigenously developed PH martensitic stainless steel
Govardhana, P. (Speaker)[1]; Tharian, T.[2]; Singh, S.B.[1]; Kar, S.K.[1]

3:50 PM | Lecture
Advanced austenitic stainless steels with higher strength, elongation and corrosion resistance
Chai, G. (Speaker)[1]; Chai, G.[2]
[1]Linköping University; [2]ALLEIMA AB, Sandviken (Sweden)

4:10 PM | Lecture
Microstructural characterization and computational design of alumina-forming martensitic stainless steels
Fernandez-Jimenez, C. (Speaker)[1]; Capdevila, C.[1]; San-Martin, D.[1]; Toda-Caraballo, I.[1]
[1]National Center for Metallurgical Research (CENIM/CSIC), Madrid

B06.05: Hydrogen

3:10 PM | Highlight Lecture
Tensile testing in high pressure gaseous hydrogen using conventional and tubular specimens: ferritic steels
Michler, T. (Speaker)[1]
[1]Fraunhofer Institute for Mechanics of Materials IWM, Freiburg im Breisgau

3:30 PM | Lecture
Hydrogen-associated Decohesion and Localized Plasticity in a high-Mn high-Al two Phase Lightweight Steel
Dong, X. (Speaker)[1]; Wang, D.[2]; Thoudden-Sukumar, P.[1]; Tehranchi, A.[1]; Ponge, D.[1]; Sun, B.[1]; Raabe, D.[1]
[1]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf; [2]Norwegian University of Science

3:50 PM | Lecture
Fatigue crack propagation in ferritic iron under pressurized gaseous hydrogen
Ogawa, Y. (Speaker)[1]; Takakuwa, O.[2]
[1]National Institute for Materials Science, Tsukuba (Japan); [2]Kyushu University, Fukuoka (Japan)

4:10 PM | Lecture
Effect of hydrogen charging on the mechanical properties of nanostructured bainitic steels
Neetu, _. (Speaker)[1]; Singh, A.[1]
[1]Indian Institute of Technology Bombay

Room HZ 7	Room HZ 8	Room HZ 9	Room HZ 10	Room HZ 11	Room HZ 12
H: Materials for Circularity and Sustainability	**C:** Processing	**C:** Processing	**C:** Processing	**C:** Processing	**C:** Processing

12:10 PM
Poster Session
Area E
Hörsaalzentrum
Lecture Hall Center
Foyer 3rd Floor

12:50 PM **I Lunch Break**
Lunch Area

13:00 PM **I Panel**
G01.1: Panel-Discussion
Education Panel
Hörsaalzentrum
Lecture Hall Center
Room HZ 14

H09.05: Nanomaterials, Composites

2:50 PM | Highlight Lecture
Repurposing food waste by producing nanocellulose-based sprayable coatings for food packaging applications
Amoroso, L. (Speaker)[1]; De France, K.J.[2]; Riillo, S.[1]; Milz, C.[1]; Siqueira, G.[1]; Zimmermann, T.[1]; Nyström, G.[1]
[1]EMPA, CH-8600, Dübendorf (Zürich) (Switzerland); [2]Queen's

3:10 PM | Lecture
Development of Sustainable Strategies to Produce Nanomaterials with Antibacterial Activity
Coelho, L. (Speaker)[1]
[1]CeNTItvc, Vila Nova de Famalicão (Portugal)

3:30 PM | Lecture
A green approach to achieve extended lubricity of tribological systems: carbon nanoparticles as a case study
Guitar, M.A. (Speaker)[1]; McLucas, T.[1]; Suarez Vallejo, S.[1]; Mücklich, F.[1]
[1]Saarland University, Saarbrücken

3:50 PM | Lecture
Synthesis and modelling of hydrogen gas-responsive nanoparticle-based thin films
Haviar, S. (Speaker)[1]; Kozák, T.[1]; Shaji, K.[1]; Košutová, T.[2]; Prifling, B.[3]; Schmidt, V.[3]; Čapek, J.[1]
[1]University of West Bohemia, Pilsen (Czech Republic); [2]Charles University, Prague (Czech Republic); [3]Ulm University

4:10 PM | Lecture
A Social Sustainability Assessment Method for Emerging Technologies with the example of the IRETA2 Project
Walls, C. (Speaker)[1]; Beck, G.[2]; Choi, B.-K.[2]
[1]ABCircular GmbH, Berlin; [2]SRH University of Applied Sciences Berlin

C01.05: PBF-LB of Al alloys

3:10 PM | Highlight Lecture
Laser Powder Bed Fusion of AlSi10Mg/SiC composites – Manufacturability and Microstructure
Conzelmann, A. (Speaker)[1]; Seifert, H.J.[2]; Mozaffari-Jovein, H.[1]
[1]Furtwangen University, Tuttlingen; [2]Karlsruhe Institute of Technology

3:30 PM | Lecture
Effect of different surface morphologies on the fatigue strength of additively manufactured AlSi10Mg
Lehner, P. (Speaker)[1]; Beck, T.[1]; Blinn, B.[1]
[1]RPTU Kaiserslautern-Landau

3:50 PM | Lecture
Effect of process-induced defects on the mechanical properties of SLM Scalmalloy®
Chabot, A. (Speaker)[1]; Godet, S.[1]; Koch, D.[2]; Mungiovi, A.[3]; Servais, P.[4]
[1]Université Libre de Bruxelles, Brussels (Belgium); [2]X-RIS, Herstal (Belgium); [3]AnyShape, Villiers-le-Bouillet (Belgium); [4]MPP, Herstal (Belgium)

4:10 PM | Lecture
R&D of 3D Printing High Strength Aluminum Alloy
Kuo, C.-N. (Speaker)[1]
[1]Department of Materials and Optoelectronic Science, National Sun Yat-sen University, Kaohsiung (Taiwan)

C03.01: 4D Printing

2:50 PM | Lecture
4D printing by fused filament fabrication of shape memory polymer: Programming strategies and parametric optimization for nature-inspired structures
Samal, B.B. (Speaker)[1]; Jena, A.[1]; Kumar, C.S.[1]; Varshney, S.K.[1]
[1]Indian Institute of Technology Kharagpur

3:10 PM | Lecture online
Biomimetics and 4D printing: Morphing of high performance composites for spatial applications
Grabow, M. (Speaker)[1]; Castro, M.[1]; Dirrenberger, J.[2]; Labastie, K.[3]; Lafont, U.[4]; Scarpa, F.[5]; le Duigou, A.[1]
[1]Université Bretagne Sud, Lorient (France); [2]PIMM, Paris (France); [3]IRT Saint Exupéry, Toulouse (France); [4]ESA/ESTEC, Noordwijk

3:30 PM | Lecture online
4D Printing of polymers with reversible and electrically actuated shape changing capabilities
Lafont, U. (Speaker)[1]; Dudenko, D.[2]; Krywko, J.[2]; Namiotko, W.[2]; Piastowski, D.[2]; Rampini, R.[1]; Siemaszko, M.[2]; Urban, K.[2]
[1]European Space Agency, Noordwijk (Netherlands); [2]Zortrax S.A.,

3:50 PM | Lecture
3D printing gets an upgrade: NiTi adds shape memory to 3D parts
Weber, R. (Speaker)[1]; Spierings, A.[2]; Wegener, K.[1]
[1]ETH Zurich; [2]inspire AG, St. Gallen (Switzerland)

4:10 PM | Lecture
Study in Phase-Transformation Temperature in Nitinol by In Situ TEM Heating
Yang, Y.-C. (Speaker)[1]; Bastos da Silva Fanta, A.[1]; Jinschek, J.[1]; Popovich, V.[2]; Zhu, J.[2]
[1]Danmarks Tekniske Universitet, Lyngby (Denmark); [2]Technische Universiteit Delft

C03.02: Phase transformation and thermomechanical processing II

2:50 PM | Highlight Lecture
Heterogeneous solid-state mixing and phase transformation upon heating of Al-Mg alloy examined by high-energy synchrotron X-rays
Kawasaki, M. (Speaker)[1]; Han, J.-K.[1]; Liss, K.-D.[2]
[1]Oregon State University, Corvallis (United States); [2]University of Wollongong

3:10 PM | Lecture
The impact of high hydrostatic pressure maintenance after high-pressure torsion on phenomena during high hydrostatic pressure annealing
Krawczynska, A. (Speaker)[1]; Setman, D.[2]; Butterling, M.[3]; Hirschmann, E.[3]; Kerber, M.[2]; Liedke, M.[3]; Romelczyk-Baishya, B.[1]; Suchecki, P.[1];

3:30 PM | Lecture
Nano- and microstructural evolution of FeTi-Cu processed by High-Pressure Torsion
Schweiger, L. (Speaker)[1]; Spieckermann, F.[1]; Burtscher, M.[1]; Kiener, D.[1]; Eckert, J.[1]
[1]Montanuniversität Leoben

3:50 PM | Highlight Lecture
Peculiarities of microstructure and phase transition kinetics of severely deformed beryllium bronze at different compositions and precipitation states
Lomakin, I. (Speaker)[1]; Nigmatullina, A.[2]; Sauvage, X.[3]
[1]Aalto University, Espoo (Finland); [2]Saint Petersburg University; [3]University of Rouen Normandy

4:10 PM | Lecture
Effect of dynamic recrystallization on microstructure and texture of Cp-Ti during hot rolling process
Ryu, D. (Speaker)[1]; Bang, S.[1]; Nahm, S.[2]; Kang, L.[1]
[1]Korea Institute of Industrial Technology, Incheon (South Korea); [2]Korea University, Seoul (South Korea)

C07.05: Metallic surfaces

3:10 PM | Lecture
Development of aluminum-based coating materials applicated by thermal spray processes for glass molds
Bartbauer, M. (Speaker)[1]; Daoud, H.[2]; Dörflinger, T.[2]; Glatzel, U.[1]; Scherm, F.[1]
[1]University of Bayreuth; [2]Neue Materialien Bayreuth GmbH

3:30 PM | Lecture online
Atom level description of nitrogen-containing coating deposited on Al-based surfaces – experiment versus atomistic simulations
Trybula, M. (Speaker)[1]; Korzhavyi, P.[2]; Marchewka, J.[3]; Mitoraj-Królikowska, M.[3]; Sypień, A.[1]; Wojewoda-Budka, J.[1]; Żydek, A.[1]
[1]Institute of Metallurgy and

3:50 PM | Lecture
Influence of Pack Cementation Parameters on the Formation of Al- and Cr-Diffusion Coatings on Mo and Mo-based Alloys
Beck, K. (Speaker)[1]; Hinrichs, F.[2]; Heilmaier, M.[2]; Ulrich, A.S.[3]; Oskay, C.[1]; Galetz, M.[1]
[1]DECHEMA-Forschungsinstitut, Frankfurt am Main; [2]Karlsruher Institut für Technologie; [3]University

4:10 PM | Lecture online
Preparation of copper powder dedicated for manufacturing conductive layers on elements of electricity contacts by thermal silvering
Hryniszyn, A. (Speaker)[1]; Pęcak, K.[1]; Bilewska, K.[1]; Sobik, P.[2]; Błażyca, H.[2]; Szendera, F.[2]; Wrona, A.[1]; Jeremiasz, O.[2]; Pawłowski, R.[2];

C10.05: Phase-field modeling & microstructures

3:10 PM | Lecture online
Phase-field modeling of martensite and bainite formation in steel
Salama, H.[1]; Ali, M.A.[1]; Nerella, D.[1]; Shchyglo, O. (Speaker)[1]; Steinbach, I.[1]
[1]Ruhr-Universität Bochum

3:30 PM | Lecture
Application of deep learning to multi-phase-field modelling and simulation
Elfetni, S. (Speaker)[1]; Kamachali, R.D.[1]
[1]Bundesanstalt für Materialforschung und -prüfung, Berlin

3:50 PM | Lecture
Evaluation of inclination-dependent grain boundary properties via data assimilation for molecular dynamics and phase-field simulations
Fujiwara, T. (Speaker)[1]; Miyoshi, E.[1]; Yamanaka, A.[1]
[1]Tokyo University of Agriculture and Technology

4:10 PM | Lecture
An absolute reaction rate phase field model without local equilibrium assumption
Warnken, N. (Speaker)[1]
[1]Birmingham

Room HZ 1	Room HZ 2	Room HZ 3	Room HZ 4	Room HZ 5	Room HZ 6
Plenaries **B:** Structural Materials	**B:** Structural Materials	**B:** Structural Materials	**B:** Structural Materials	**B:** Structural Materials	**B:** Structural Materials

4:30 PM | **Coffee Break**
Hörsaalzentrum Foyer

B07.06: Novel modelling approaches for material evolution and deformation

5:00 PM | Lecture
Atomistic modeling of carbides formation during low-temperature tempering of martensitic carbon steel
Zapolsky, H. (Speaker)[1]; Demange, G.[2]; Lavrsky, M.[2]; Patte, R.[2]; Schwab, F.[3]
[1]Saint-Etienne du Rouvray; [2]University of Rouen, Saint-Etienne du Rouvray (France); [3]German Aerospace Center (DLR), Ulm

5:20 PM | Lecture
Microstructural Quantifications for Accelerated Prediction of Vickers Hardness Using Machine Learning
Swetlana, S. (Speaker)[1]; Khatavkar, N.[1]; Singh, A.K.[1]
[1]Indian Institute of Science, Bangalore (India)

5:40 PM | Lecture
Correlation between the microscale interface geometry and joint strength of ultrasonically welded multimaterial systems for finite element modelling
Arweiler-Böllert, S. (Speaker)[1]; Liesegang, M.[1]; Beck, T.[1]
[1]RPTU Kaiserslautern Landau

6:00 PM | Lecture
On the evolution and interaction between precipitates and grain boundaries in a Mg-Gd-Y alloy during homogenization treatment: A phase field study
Zhou, Y. (Speaker)[1]
[1]Shanghai Jiao Tong University, Shainghai (China)

6:20 PM | Lecture
Deformation mechanisms in Mo-based alloys evaluated by modelling of solid solution strengthening
Winkens, G. (Speaker)[1]; Baruffi, C.[2]; Curtin, W.A.[3]; Czerny, A.K.[1]; Heilmaier, M.[1]; Herrmann, J.[1]; Kauffmann, A.[1]; Rao, Y.[2]; Schwaiger, R.[4]
[1]Karlsruher Institut für Technologie (KIT); [2]École Polytechnique

6:40 PM | Lecture
First-principles study on the hydrogen absorption energy in Fe-Cr-Ni austenitic systems: Effect of Cr and Ni content
Moriyama, J. (Speaker)[1]; Takakuwa, O.[1]; Yamaguchi, M.[2]; Ogawa, Y.[3]; Tsuzaki, K.[3]
[1]Kyushu university, Fukuoka (Japan); [2]Japan Atomic Energy agency, Ibaraki (Japan); [3]National Institute for Materials Science,

B07.18: Alloy design and characterisation

5:00 PM | Lecture
Exploring Microscopic Strain Localizations: An In-situ Investigation on their Distribution and Orientation
Rackwitz, J. (Speaker)[1]; Tasan, C.[1]
[1]Massachusetts Institute of Technology, Cambridge (United States)

5:20 PM | Lecture
Fatigue behavior of carbon fiber-reinforced polyurethane regarding crack initiation and propagation monitored by digital image correlation and infrared thermography
Gerdes, L. (Speaker)[1]; Barandun, G.A.[2]; Franck, P.[1]; Richle, S.[2]; Walther, F.[1]
[1]TU Dortmund University; [2]Eastern

5:40 PM | Lecture
First-principles investigations into the electrochemical behavior of Mg based intermetallics
Mishra, P. (Speaker)[1]; Kumar, P.[1]; Neelakantan, L.[1]; Adlakha, I.[1]
[1]Indian Institute of Technology Madras, Chennai (India)

6:00 PM | Lecture
Genetic alloy design of ultrahigh strength manageing steels for laser powder bed fusion
Eskandari Sabzi, H. (Speaker)[1]; Rivera-Diaz-del-Castillo, P.[1]
[1]University of Southampton

6:20 PM | Lecture
Hierarchical Design of an Ultra High Strength Aluminum Plate Alloy
Tzini, M.-I. (Speaker)[1]; Olson, G.[1]
[1]Massachusetts Institute of Technology, Cambridge (United States)

6:40 PM | Lecture
How γ/γ Interfaces Govern Dislocation Nucleation in Lamellar TiAl Alloys
Chauniyal, A. (Speaker)[1]; Janisch, R.[1]; Motahari, S.[2]
[1]ICAMS, Bochum; [2]Max-Planck-Institut für Eisenforschung, Dusseldorf

B05.13: Metastability Engineering and Novel Processing of High-Entropy Alloys

5:00 PM | Highlight Lecture
Metastable liquid properties and rapid solidification of multicomponent titanium alloys
Ruan, Y. (Speaker)[1]
[1]Northwestern Polytechnical University, Xi'an (China)

5:20 PM | Lecture
Deformation behaviour of Ni-Cr-Fe-Mn-Mo medium/high entropy alloys
Chai, G. (Speaker)[1]; Chai, G.[2]
[1]Linköping University; [2]ALLEIMA AB, Sandviken (Sweden)

5:40 PM | Lecture | online
Optimisation of process parameters for high entropy alloy coatings: cold spray, high velocity oxygen fuel, high velocity air fuel, and laser cladding
Boruah, D. (Speaker)[1]; Bianchin, A.[2]; Davison, E.[1]; Paul, S.[3]
[1]TWI Ltd, Cambridge (United Kingdom); [2]MBN nanomaterialia

6:00 PM | Lecture
Plasma-nitriding of AlCoCrFeNi high entropy alloy produced by Hot Isostatic Pressing
Gazagne, V. (Speaker)[1]; Dubois, J.-B.[1]; Gauthier-Brunet, V.[1]
[1]Laboratoire Pprime - Université de Poitiers

B05.06: Modelling Development for High-Entropy Alloys

5:00 PM | Lecture
Crystal plasticity study of refractory multi-principal component alloys: structure to property analysis
Lindroos, M.[1]; Andersson, T.[1]; Anssi, L.[1]; Baker, A.[2]; Berry, J.[2]; Biswas, A.[1]; Elder, K.[2]; Henderson, H.[2]; McCall, S.[2]; McKeown, J.[2]; Perron, A.[2]; Pinomaa, T.[1]; Provatas, N.[3]; Ren, S.[1]; Rietema, C.[2]; Shittu,

5:20 PM | Lecture
Role of chemical short-range order and lattice distortions on the strength of fcc VCoNi concentrated solid solution alloys: an atomistic simulation study
Esfandiarpour, A. (Speaker)[1]; Alvarez-Donado, R.[1]; Papanikolaou, S.[1]; Alava, M.[1]
[1]National Centre for Nuclear

5:40 PM | Lecture
Molecular Dynamics Simulation of High Entropy Alloys Laser Powder Bed Fusion
Klunnikova, Y. (Speaker)[1]; Charrier, M.J.[2]; Albe, K.[3]
[1]Technische Universität Darmstadt; [2]Technival University of Darmstadt; [3]Technical University of Darmstadt

B01.06: Medium Mn steels

5:00 PM | Highlight Lecture
Interaction of Hydrogen/ Deuterium with defects in Dual Phase Steels
Saksena, A. (Speaker)[1]; Sun, B.[1]; Dong, X.[1]; Khanchandani, H.[1]; Raabe, D.[1]; Gault, B.[1]
[1]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf

5:20 PM | Lecture
Enhancing the Mechanical Properties of Medium Mn Steels through Deforming and Partitioning (D&P) process
Sadeghpour, S. (Speaker)[1]; Karjalainen, P.[1]; Kömi, J.[1]; Somani, M.[1]
[1]University of Oulu

5:40 PM | Lecture
Continuous and discontinuous yielding behaviour of medium Mn steel: A macroscopic and nanoindentation investigation
Bhunia, S. (Speaker)[1]
[1]Indian Institute of Technology Bombay, Mumbai (India)

6:00 PM | Lecture
Magnetic field effect on Mn segregation and austenite reversion in med-Mn steels
Syed, F.W. (Speaker)[1]; Ponge, D.[1]; Raabe, D.[1]
[1]Max-Planck-Institut für Eisenforschung, Düsseldorf

B06.06: Wear, Contact and Tribology

5:00 PM | Lecture
Design, development and characterization of Cr-Mo-W-V steels with enhanced corrosion and abrasion resistance
Maher, M.[1]; Iraola-Arregui, I.[1]; Idouhli, R.[2]; Khadiri, M.E.[2]; Abouelfida, A.[2]; Ben Youcef, H.[1]; Rhouta, B.[2]; Trabadelo, V. (Speaker)[1]
[1]Mohammed VI Polytechnic University, Benguerir (Morocco);

5:20 PM | Lecture
Effect of normal load on fretting wear of Additively Manufactured Inconel 718
Sahu, A. (Speaker)[1]; Kamaraj, M.[1]; Kesavan, D.[2]
[1]Indian Institute of Technology Madras, CHENNAI (India); [2]Indian Institute of Technology Palakkad

5:40 PM | Lecture
Evolution of sub-surface microstructure under linear reciprocating wear of nanostructured bainitic steel
Rathore, S. (Speaker)[1]; Singh, K.[2]; Singh, A.[3]
[1]Indian Institute of Technology Bombay & Nanyang Technological University Singapore, Mumbai (India); [2]Institute of Materials Physics, Institute of Materials

6:00 PM | Lecture
Rolling contact fatigue of stratified surface layers on rail wheel materials
Freisinger, M. (Speaker)[1]; Jakab, B.[1]; Pichelbauer, K.[1]; Six, K.[2]; Trummer, G.[2]
[1]AC²T research GmbH, Wiener Neustadt (Austria); [2]Virtual Vehicle Research GmbH, Graz (Austria)

Room HZ 7	Room HZ 8	Room HZ 9	Room HZ 10	Room HZ 11	Room HZ 12
H: Materials for Circularity and Sustainability	**C:** Processing	**C:** Processing	**C:** Processing	**C:** Processing	**C:** Processing

4:30 PM | **Coffee Break**
Hörsaalzentrum Foyer

H09.06: Nanomaterials, Waste Management, Biomass

5:00 PM | Lecture
Silicate based polyvinyl alcohol composite lacquer for recyclable mono-material flexible packaging films with high oxygen barrier
Schiessl, S. (Speaker)[1]; Kucukpinar, E.[1]
[1]Fraunhofer Institute for Process Engineering and Packaging, Freising

5:20 PM | Lecture | online
Filament extrusion and Fused Deposition Modeling of non-purified starch/spent frying oil/PBAT-based blends
Gonçalves, I. (Speaker)[1]; Oliveira, G.[1]; Brites, P.[1]; Lopes, J.[1]; Santos, J.D.C.[1]; Gomes, T.E.P.[2]; Nunes, C.[1]; Coimbra, M.A.[3]; Ferreira, P.[1]
[1]CICECO - Aveiro Institute of Materials / University of Aveiro;

5:40 PM | Lecture | online
Naturally pigmentation and water/tensile resistance for paper sheets by a garlic peel-reinforced bioplastic coating
Vallejo, M. (Speaker)[1]; Nunes, C.[1]; Coimbra, M.[1]; Oliveira, J.[1]; Ferreira, P.[1]; Gonçalves, I.[1]
[1]University of Aveiro

6:00 PM | Lecture | online
Eco-friendly solid masonry blocks incorporating olive bagasse waste
Briga-Sá, A. (Speaker)[1]; Fernandes, M.[2]; Jerónimo, A.[2]
[1]CQVR- Centre of Chemistry of Vila Real and School of Science and Technology, University of Trás-os-Montes e Alto Douro; [2]CQVR, University of Trás-os-Montes and Alto Douro, Vila Real (Portugal)

C01.06: AM of Ni-base superalloys

5:00 PM | Highlight Lecture
Effect of 80 micron layer thickness processing on high temperature performance of Ni-base superalloys by laser powder bed fusion
Shaikh, A.S. (Speaker)[1]; Hussain, A.F.J.[2]; Mishurova, T.[3]; Hryha, E.[2]
[1]EOS Metal Materials, Turku (Finland); [2]Chalmers University of Technology, Gothenburg (Sweden);

5:20 PM | Lecture
Microstructural evolution of PBF-LB/M Inconel 718 during solution-aging heat treatments – an in-situ X-ray diffraction study
Ferrari, B. (Speaker)[1]; Mishurova, T.[1]; Roveda, I.[1]; Said Schicchi, D.[2]; Evans, A.[1]; Serrano-Munoz, I.[1]; Agudo Jácome, L.[1]
[1]Bundesanstalt für

5:40 PM | Lecture
PBF-LB/M of a non-weldable Ni-base Superalloy: role of scan strategy on defect formation and as-printed microstructure
Jabir Hussain, A.F. (Speaker)[1]; Brodin, H.[2]; Hryha, E.[1]
[1]Chalmers University of Technology, Gothenburg (Sweden); [2]Siemens Energy AB, Finspång (Sweden)

6:00 PM | Lecture
Microstructural and tensile properties evolutions of direct-aged Waspaloy produced by Wire Arc Additive Manufacturing
Sazerat, M. (Speaker)[1]; Cormier, J.[1]; Villechaise, P.[1]; Nait-Ali, A.[1]; Cervellon, A.[2]; Eyidi, D.[1]; Fortunier, R.[2]; Gillet, S.[2]; Joulain, A.[1]; Lopez-Galilea, I.[4]; Weber, S.[4]

6:20 PM | Lecture
Fracture toughness of additively manufactured NiCr evaluated by micro-bending: influence of size effects and limits of the test standard
Benmabrouk, S. (Speaker)[1]
[1]Groupe de Physique des Matériaux (CNRS, INSA de Rouen, Université de Rouen)

6:40 PM | Lecture
High temperature deformation behavior of additively manufactured Inconel 718
Sabari Rajan, S. (Speaker)[1]; Koundinya, N.[1]; Kumar, J.[2]; Nagesha, B.[2]; Janaki Ram, G.[3]; Ravi Sankar, K.[1]
[1]Indian Institute of Technology Madras, Chennai (India); [2]GTRE, Bengaluru (India); [3]Indian Institute of Technology Hyderabad

C02.02: Multi-Material and Composite parts

5:00 PM | Lecture
Additively manufactured bioinspired architectured composite materials for high-velocity impact shielding applications on the lunar surface
Pichard, P.-L. (Speaker)[1]; Mahéo, L.[1]; Dirrenberger, J.[2]; Lafont, U.[3]; Le Duigou, A.[1]
[1]Université de Bretagne Sud, Lorient (France); [2]ENSAM, Paris (France); [3]European Space Agency,

5:20 PM | Lecture
Development of hybrid injection mold inserts "Soft Tooling": Novel method based on polymer-based additive manufacturing and metal thermal spraying
Dörflinger, T. (Speaker)[1]; Bonn, P.[2]; Daoud, H.[1]; Glatzel, U.[3]; Hofmann, S.[2]
[1]Neue Materialien Bayreuth; [2]ModellTechnik Rapid Prototyping

5:40 PM | Lecture
Digital Materials: hybrid printing process for large scale production
Theuer, T. (Speaker)[1]; Baumgartner, S.[2]; Koch, B.[1]; Liska, R.[2]; Stampfl, J.[1]
[1]Institute of Materials Science and Technology, TU Wien, 1060 Vienna (Austria); [2]Cubicure GmbH, 1230 Vienna (Austria); [3]Institute of Applied Synthetic Chemistry, TU Wien, 1060 Vienna (Austria)

6:00 PM | Lecture
Design for Disassembly – Using Digital Materials in Additive Manufacturing for Easier Recycling Strategies
Ecker, J. (Speaker)[1]; Liska, R.[1]; Stampfl, J.[1]
[1]Vienna University of Technology

6:20 PM | Lecture
Liquid Additive Manufacturing (LAM) - Influence of printing parameters on the mechanical and optical properties of the part
Klier, K. (Speaker)[1]; Giesen, R.-U.[1]; Heim, H.-P.[1]
[1]University of Kassel

C09.03: Microstructure and mechanical properties

5:00 PM | Highlight Lecture | online
Crystal defect engineering in multi-principal element alloys using severe plastic deformation and additional annealing
Gubicza, J. (Speaker)[1]; Hung, P.T.[1]; Kawasaki, M.[2]; Han, J.-K.[3]; Lábár, J.L.[4]; Hegedűs, Z.[5]
[1]Eötvös Loránd University, Budapest (Hungary); [2]Oregon State

5:20 PM | Lecture
Influence of High Pressure Torsion Extrusion on the Properties of Magnesium Alloy ZK60
Diederichs, S. (Speaker)[1]; Nugmanov, D.[2]; Ivanisenko, J.[2]; Kerscher, E.[1]
[1]RPTU Kaiserslautern-Landau; [2]Karlsruhe Institute of Technology

5:40 PM | Lecture
Investigation of recrystallization processes during uniaxial compression of biocompatible magnesium alloys
Dittrich, J. (Speaker)[1]; Kubásek, J.[2]; Král, R.[1]; Čavojský, M.[3]; Šindelářová, A.[1]; Minárik, P.[1]
[1]Charles University, Prague (Czech Republic); [2]University of Chemistry

6:00 PM | Lecture
Microstructure, mechanical properties and ignition temperatures of Mg-Y-Gd(Nd)-Ca alloys
Šašek, S. (Speaker)[1]; Hosová, K.[2]; Krajňák, T.[1]; Král, R.[1]; Kubásek, J.[2]; Minárik, P.[1]; Stráská, J.[1]; Veselý, J.[1]
[1]Charles University, Prague (Czech Republic); [2]University of Chemistry and Technology, Prague (Czech

6:20 PM | Lecture
Insight into the structural evolution and deformation behaviors of Cu-based nanocrystalline alloys via atomic resolution study
Zhang, Z. (Speaker)[1]; Guo, J.[2]
[1]Austrian Academy of Sciences, Leoben (Austria); [2]Hubei University, Leoben (China)

C07.06: Protective wear and high-temperature coatings coatings

5:00 PM | Highlight Lecture
Atomic-level insights into the structures and properties of nitride coatings
Zhang, Z. (Speaker)[1]; Chen, Z.[1]
[1]Erich Schmid Institute, Austrian Academy of Sciences, Leoben (Austria)

5:20 PM | Lecture
Growth dynamics and mechanical properties of TiAl(Si)N monolayers and multilayers deposited by HiPMS on Si and WC-Co substrates
de Souza Lamim, T. (Speaker)[1]; Martinez Martinez, D.[1]; Chemin, J.-B.[1]; Valle, N.[1]; Penoy, M.[2]; Useldinger, R.[2]; Bourgeois, L.[2]; Choquet, P.[1]

5:40 PM | Lecture
Solar aging of solar selective coatings based on CrAlN multilayers for high temperature applications
Cañadas, I.[1]; Sánchez-Pérez, M.[2]; Wette, J.[1]; Farchado, M.[1]; Morales, Á.[1]; Rodríguez, J.[1]; Sutter, F.[3]; Reyes, D.F.[4]; Rojas, T.C.[2]; Escobar-Galindo, R.[4]; Sánchez López, J.C. (Speaker)[4]

6:00 PM | Lecture
Transition Metal Dichalcogenides (TMD) a low friction thin film from fundamental scientific research to its application in different types of applications
Evaristo, M. (Speaker)[1]; Cavaleiro, A.[1]; Fernandes, F.[2]; Vuchkov, T.[3]
[1]University of Coimbra; [2]ISEP - School of Engineering, Polytechnic

C10.06: Solidification & liquid metal processing

5:00 PM | Lecture
Comparison of contactless and immersed sonotrode ultrasonic treatment methods for liquid metal processing
Beckwith, C. (Speaker)[1]; Bojarevics, V.[1]; Djambazov, G.[1]; Pericleous, K.[1]; Tonry, C.[1]
[1]University of Greenwich, London (United Kingdom)

5:20 PM | Lecture
Multiscale modeling of steel solidfication at a constant heat extraction rate
Boukellal, A.K. (Speaker)[1]; Kennedy, J.[2]; Zaloznik, M.[2]
[1]Université de Lorraine - CNRS-Institut Jean Lamour, Nancy (France); [2]Université de Lorraine-CNRS - Institut Jean Lamour, Nancy (France)

5:40 PM | Lecture
Modelling Quaternary 1.4031 Stainless Steel and investigating Dendritic Solidification by Phase-Field Simulations
Umar, M. (Speaker)[1]; Kellner, M.[2]; Nestler, B.[2]; Schneider, D.[2]; Seiz, M.[2]
[1]Karlsruhe University of Applied Sciences; [2]Karlsruhe Institute of Technology (KIT)

6:00 PM | Lecture
Integrating machine learning with atomistic-informed phase-field simulations for accurate prediction of dendritic arm spacing in rapid solidification
Kavousi, S.[1]; Asle Zaeem, M. (Speaker)[1]
[1]Colorado School of Mines, Golden (United States)

6:20 PM | Lecture
Phase-Field Study of Rapid Solidification in Laser Powder-Bed Fusion Additive Manufacturing
Tavakoli, R. (Speaker)[1]; Tourret, D.[1]
[1]IMDEA Materials Institute, MADRID (Spain)

6:40 PM | Lecture
LBM-CA simulation for prediction of dendritic growth in solidification
Lee, W. (Speaker)[1]; Cha, J.[1]; Jang, S.[1]; Jeong, K.[1]; Yoon, J.[1]
[1]Hanyang university, Ansan (South Korea)

Room SH 0.101

D: Characterization and Modeling

D04.04: Ambient & Non-ambient Conditions

10:30 AM | Lecture
Micromechanical behaviour of an electrodeposited NiP metallic glass at high strain rate and cryogenic temperatures
Tian, C. (Speaker)[1]; Pratama, K.[1]; Sharma, A.[2]; Watrobe, M.A.[2]; Michler, J.[2]; Schwiedrzik, J.[2]
[1]EMPA, Swiss Federal Laboratories for Materials Science and

10:50 AM | Lecture
Nanoindentation methods for analysis of thermally activated processes at elevated temperatures
Sos, M. (Speaker)[1]; Durst, K.[1]; Minnert, C.[2]
[1]Technische Universität Darmstadt; [2]Empa, Thun (Switzerland)

11:10 AM | Highlight Lecture
New perspectives for in situ nanomechanics at cryogenic temperatures
Best, J.P. (Speaker)[1]; Dubosq, R.[1]; Gault, B.[1]
[1]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf

11:30 AM | Lecture
Plasticity at the microscale of BCC-RHEAs at room temperature
Wang, J. (Speaker)[1]; Peter, N.J.[1]; Schwaiger, R.[1]
[1]Forschungszentrum Juelich GmbH

11:50 AM | Lecture
Using nanoindentation instrumented test to study hydrogen embrittlement in laser surface-modified austenitic stainless steel
Carreras Molina, J. (Speaker)[1]; Diego, G.[1]; Merino, S.[1]
[1]CIEMAT, Madrid (Spain)

Room SH 0.105

D: Characterization and Modeling

D05.01: X-ray based methods

10:30 AM | Highlight Lecture
Advanced X-ray characterization methods of photovoltaic absorber materials
Schorr, S. (Speaker)[1]
[1]Helmholtz-Zentrum Berlin für Materialien und Energie

10:50 AM | Lecture
Integrating robotic high-throughput processing with synchrotron based in-situ multimodal analysis: homogenous crystallization of mixed Br-I perovskites
Ciambezi, M.[1]; Liu, J.[1]; Ramakrishnan, M.[1]; Unger, E.[2]; Li, J.[2]; Just, J. (Speaker)[1]
[1]MAX IV Laboratory, Lund (Sweden); [2]Helmholtz-Zentrum

11:10 AM | Lecture
Advanced x-ray and spectroscopic characterization of energy materials
Eller, F.[1]; Kuhn, M.[1]; Greve, C.[1]; Herzig, E.M. (Speaker)[1]
[1]University of Bayreuth

11:30 AM | Lecture
Studies of perovskite solar cell interfaces using X-ray based Spectroscopy
Rensmo, H. (Speaker)[1]
[1]Uppsala University

11:50 AM | Lecture
Multi-Modal Scanning X-ray Microscopy for Solar-Cell Characterization
Ossig, C. (Speaker)[1]; Aydin, E.[2]; Isikgor, F.H.[2]; De Wolf, S.[2]; Falkenberg, G.[1]; Mews, A.[3]; Schroer, C.G.[3]; Kipp, T.[3]; Stuckelberger, M.E.[1]; Strelow, C.[3]; Flügge, J.[3]; Patjens, S.[1]; Garrevoet, J.[1]; Spiers, K.M.[1]; Hagemann, J.[1]; Seiboth, F.[1]; De Bastiani, M.[2]

Room SH 0.106

D: Characterization and Modeling

D07.01: Grain Boundaries I

10:30 AM | Highlight Lecture
A case study in high-throughput grain boundary solute segregation analysis in Ni base alloys
Mai, H.L. (Speaker)[1]; Hickel, T.[1]; Neugebauer, J.[1]
[1]Max Planck Institut fur Eisenforschung GmbH, Dusseldorf

10:50 AM | Lecture
Molecular dynamics simulation of atomic self-diffusion along dislocation and grain boundary
Starikov, S. (Speaker)[1]; Jamebozorgi, V.[2]; Karusala, A.[1]; Mrovec, M.[1]; Drautz, R.[1]
[1]Ruhr University Bochum; [2]Bielefeld University of Applied Sciences

11:10 AM | Lecture
General grain boundary K-test framework for the assessment of liquid metal embrittlement at the atomic scale
Brunner, F. (Speaker)[1]; Maresca, F.[1]
[1]University of Groningen

11:30 AM | Lecture
Study of Ga Induced Defect Phase Transformations in Mg Σ7 GB
Mathews, P. (Speaker)[1]; Zhang, S.[1]; Scheu, C.[1]; Janisch, R.[2]; Hickel, T.[1]; Neugebauer, J.[1]
[1]Max-Planck-Institut für Eisenforschung, Düsseldorf; [2]Ruhr Universität Bochum

11:50 AM | Lecture
First-principles study of H and C segregation at grain boundaries in ferritic steels
Azocar Guzman, A. (Speaker)[1]; Janisch, R.[2]
[1]Forschungszentrum Jülich GmbH; [2]Ruhr-Universität Bochum

Room SH 0.107

D: Characterization and Modeling

D10.01: Ab initio and beyond

10:30 AM | Keynote Lecture
Towards accurate determination of materials parameters for multiscale modeling from first principles
Abrikosov, I. (Speaker)[1]
[1]Linköping University

11:10 AM | Lecture
Predicting Fracture Toughness ab-initio: Discrete Dislocation Plasticity Informed by Quantum-accurate Atomistic Modelling
Zhang, L. (Speaker)[1]; Csányi, G.[2]; Maresca, F.[1]; van der Giessen, E.[1]
[1]University of Groningen; [2]University of Cambridge, London (United Kingdom)

11:30 AM | Lecture
Ab initio informed microstructure and process modelling of metals
Scheiber, D. (Speaker)[1]
[1]Materials Center Leoben Forschung GmbH

11:50 AM | Lecture
Streamlining Molecular Modelling Workflows with Semantics
Roscioni, O.M. (Speaker)[1]; Goldbeck, G.[1]
[1]Goldbeck Consulting LTD, Cambridge (United Kingdom)

Room SH 0.109

D: Characterization and Modeling

D08.01: Materials Platforms

10:30 AM | Keynote Lecture
Materials DX Platform: NIMS Initiatives
Demura, M. (Speaker)[1]
[1]National Institute for Materials Science, Tsukuba (Japan)

11:10 AM | Lecture
A Software Framework to Enable Automated ICME Workflows
Di Stefano, D. (Speaker)[1]
[1]Ansys UK, Cambridge (United Kingdom)

11:30 AM | Lecture
MaterialsMine: Curation, Ontology, and Knowledge Graph for Discovery in Polymer NanoComposites
Brinson, L.C. (Speaker)[1]
[1]Duke University, Durham NC (United States)

11:50 AM | Lecture
Fast, cost-effective, and sustainable Materials Screening on a novel Materials Informatics Platform
Vieten, J. (Speaker)[1]; Call, F.[1]; Prähofer, B.[1]; Pein, M.[2]; Lee, K.[2]; Roeb, M.[2]; Sattler, C.[2]
[1]ExoMatter GmbH, Munich; [2]German Aerospace Center (DLR e.V.), Cologne

12:10 PM **I Lunch Break**
Lunch Area

12:10 PM
Poster Session
Area C
Hörsaalzentrum
Lecture Hall Center
Foyer 3rd Floor

Room SH 1.101

D: Characterization and Modeling

D01.01: X-ray imaging beamlines

10:30 AM | Highlight Lecture
Beamline ID19: a versatile station for synchrotron-based full-field hard X-ray microimaging for real-time in situ studies in materials research
Rack, A. (Speaker)[1]
[1]European Synchrotron Radiation Facility - ESRF, Grenoble (France)

10:50 AM | Lecture
Sustainable materials under the X-ray microscope: How accelerators contribute towards a green future
Kölpin, N. (Speaker)[1]; Roth, S.V.[2]
[1]DESY, Hamburg; [2]Deutsches Elektronen-Synchrotron DESY, Hamburg

11:10 AM | Lecture online
A novel fast synchronized setup for combined in-situ X-ray Diffraction and X-ray absorption spectroscopy at MAX IV
Ramakrishnan, M. (Speaker)[1]; Liu, J.[1]; Klementiev, K.[1]; Carlsson, P.-A.[2]; Just, J.[1]
[1]MAX IV Laboratory, Lund (Sweden); [2]Chalmers University of

11:30 AM | Lecture
Dark Field X-ray Microscopy: A New Way of 4D Mapping of Strain and Orientation of Embedded Crystalline Structures
Yildirim, C. (Speaker)[1]; Poulsen, H.F.[2]; Cook, P.[3]; Simons, H.[2]; Rodriguez Lamas, R.[3]; Zelenika, A.[3]; Kutsal, M.[2]; Garriga Ferrer, J.[3]; Detlefs, C.[3]

11:50 AM | Lecture
Materials Performance and Structural Properties with High Spatial Resolution
Krywka, C. (Speaker)[1]; Davydok, A.[1]
[1]Helmholtz-Zentrum hereon GmbH

Room SH 1.104

D: Characterization and Modeling

D02.04: Materials characterization using spectroscopy

11:10 AM | Lecture
In Situ Investigation of Pure and Mixed Gas Diffusion in Polymer Films combining FTIR Spectroscopy and Barometry
Loianno, V. (Speaker)[1]; Mensitieri, G.[1]; Musto, P.[2]; Nagendra, B.[3]
[1]University of Naples Federico II; [2]National Research Council of Italy, Pozzuoli (NA) (Italy); [3]University of

11:30 AM | Lecture
In situ measurement of chemical composition during TIG welding of duplex steels to analyze the influence of individual alloying elements on weld microstructure
Rhode, M. (Speaker)[1]; Griesche, A.[2]; Kannengiesser, T.[2]; Quackatz, L.[2]; Treutler, K.[3]; Weslina, V.[3]

11:50 AM | Lecture online
DED EELS: Fast Spectroscopic Analysis for in situ STEM
Fissłthaler, E. (Speaker)[1]; Grogger, W.[2]; Knez, D.[2]; Šimić, N.[1]
[1]Graz Center for Electron Microscopy; [2]Graz University of Technology

Room SH 1.105

E: Energy and Transportation

E04.01 Component characterization and system design for redox flow batteries

10:30 AM | Highlight Lecture
Diagnosis and Optimization of Charge Propagation Dynamics in Highly Concentrated Iodine/Iodide Electrolytes for Redox Flow Batteries
Kulesza, P.J. (Speaker)[1]; Rutkowska, I.[1]; Lubera, J.[1]; Di Noto, V.[2]; Negro, E.[2]; Vezzu, K.[2]
[1]University of Warsaw; [2]University

10:50 AM | Lecture
Analysis by scanning transmission soft X-ray microscopy of electrolyte for Titanium-Manganese redox flow battery
Hosono, E. (Speaker)[1]; Sato, Y.[1]; Ohira, A.[1]; Asakura, D.[1]; Yuzawa, H.[2]; Ohigashi, T.[3]; Kitamura, M.[3]; Horiba, K.[4]; Sakai, T.[1]; Funaki, T.[1]; Kanega, R.[1]

11:10 AM | Lecture
Synchrotron X-Ray Radiography and Tomography - Operando Visualization in Vanadium Redox Flow Batteries
Zeis, R. (Speaker)[1]; Köble, K.[1]; Duan, K.[1]; Ershov, A.[1]; Schilling, M.[1]; Rampf, A.[1]; Cecilia, A.[1]; Faragó, T.[1]
[1]Karlsruhe Institute of Technology, Ulm

11:30 AM | Lecture online
Automating the exploration of molecules for redox flow batteries
Er, S. (Speaker)[1]
[1]DIFFER, Eindhoven (Netherlands)

11:50 AM | Lecture
Design aspects and early experiments of a Vanadium Redox Flow Battery cell test facility: measurements and methods for scaling up
Trovò, A. (Speaker)[1]; Zamboni, W.[2]; Marini, G.[1]; Poli, N.[1]; Rugna, M.[1]; Zatta, N.[1]; Guarnieri, M.[1]
[1]University of Padua, Padova (Italy); [2]Università degli studi di

Room SH 1.106

E: Energy and Transportation

E03.04: Space Lab Testing Materials in Space

10:30 AM | Highlight Lecture online
Euro Material Ageing – Ground-based testing and selection of the ESA flight candidate materials
Suliga, A. (Speaker)[1]; Wessing, J.[1]; Tighe, A.[1]; Rampini, R.[1]; Hand, A.[1]; Vincent-Bonnieu, S. (Speaker)[1]
[1]European Space Agency

10:50 AM | Lecture
A novel method of the emissivity determination of molten oxide and the density measurement of molten oxide on the ISS by the electrostatic levitation furnace
Matsushita, T. (Speaker)[1]; Taguchi, S.[2]; Watanabe, M.[2]; Yamada, M.[2]; Hasome, H.[2]; Inoue, R.[2]; Ishikawa, T.[3]; Ishiwata, R.[2]; Ito, T.[3]; Koyama,

11:10 AM | Lecture
Internal Heat Transfer and Convection during Modulation Calorimetry Experiments in Microgravity Electromagnetic Levitation
Bracker, G. (Speaker)[1]; Hyers, R.[2]
[1]German Aerospace Center (DLR), Köln; [2]Worcester Polytechnic Institute

11:30 AM | Lecture
Terrestrial support for Microgravity experiments: Thermophysical properties of Al-Ni and Al-Ti based industrial alloys
Novakovic, R. (Speaker)[1]
[1]National Research Council, Genova (Italy)

11:50 AM | Lecture
Thermophysical properties of liquid Al, V and their binary alloys measured by electromagnetic levitation
Reiplinger, B. (Speaker)[1]; Brillo, J.[2]; Seimiya, Y.[3]
[1]German Aerospace Center (DLR), Cologne; [2]German Aerospace Center, Cologne; [3]Chiba Institute of Technology

Room SH 1.107

E: Energy and Transportation

E05.04: Diagnostics and Safety

10:50 AM | Lecture
Monitoring the State of Health (SOH) of green batteries (GreenBat)
Sandrucci, E. (Speaker)[1]
[1]Università di Roma La Sapienza, Rome (Italy)

11:10 AM | Lecture
Needle Penetration Studies on the Internal Dynamics in Automotive Lithium-Ion Battery Cells: Measurement of Internal Temperature and Short Circuit Current
Kim, H. (Speaker)[1]; Seifert, H.[2]; Ziebert, C.[2]; Friedl, J.[1]
[1]Battery Cell Competence Center, BMW Group, Munich; [2]Institute for Applied Materials (IAM-AWP),

11:30 AM | Lecture
Towards an on-line methodology for lithium-ion batteries state of health estimation using dynamic impedance and Machine Learning: from a novel experimental set-up to feature extraction
Scarpioni, F. (Speaker)[1]
[1]Fraunhofer IFAM, Bremen

11:50 AM | Highlight Lecture
Machine-Learning based microstructure evaluation of Li-ion batteries for quality assessment and process development
Kopp, A. (Speaker)[1]; Bernthaler, T.[2]; Choudhary, A.K.[2]; Jansche, A.[2]; Schneider, G.[2]; Trier, F.[2]
[1]Aalen University / KIT; [2]Aalen University

Room SH 1.108

E: Energy and Transportation
A: Functional Materials

E07.04: Electrodes for PEMFCs and PEMELs

10:50 AM | Highlight Lecture
Towards Developing Highly Efficient and Durable Water Electrolysers with low Cost
Gago, A. (Speaker)[1]; Gago, A.[1]; Garcia Sanchez, D.[1]; Morawietz, T.[1]; Torrero, J.[1]
[1]German Aerospace Center (DLR), Stuttgart

11:10 AM | Lecture
Performance optimization of a commercial Fe-N-C catalyst in direct methanol fuel cells (DMFCs) and long-term durability study
Lo Vecchio, C. (Speaker)[1]; Serov, A.[2]; Zulevi, B.[3]; Baglio, V.[1]
[1]National Council of Research, Institute of Advanced Energy

11:30 AM | Lecture online
Adsorption and desorption processes in core-shell structure of electrocatalysts for proton exchange membrane fuel cells
Conti, F. (Speaker)[1]; Andreetta, D.[1]; Di Noto, V.[1]; Pagot, G.[1]; Vezzù, K.[1]
[1]University of Padova

11:50 AM | Lecture
Synthesis of shape-controlled nanoparticles supported on Vulcan carbon by electrochemical erosion
Schott, C.M. (Speaker)[1]
[1]Technical University of Munich, Garching bei München

12:10 PM **I Lunch Break**
Lunch Area

12:10 PM
Poster Session
Area E
Hörsaalzentrum
Lecture Hall Center
Foyer 3rd Floor

Room SH 0.101

D: Characterization and Modeling

D04.05: Microbonding & Fracture

2:50 PM | Highlight Lecture
Micro-cantilever experiments to study the influence of pre-deformation and He irradiation on the fracture toughness of W single crystals
Göken, M. (Speaker)[1]; Bitzek, E.[2]; Eggle-Sievers, B.[2]; Gabel, S.[3]; Köbrich, M.[4]; Merle, B.[5]; Vollhüter, J.[3]
[1]Friedrich-Alexander-Universität

3:10 PM | Lecture
Investigating the effect of grain size tailoring on the local fracture characteristics for tungsten copper nanocomposites
Schmuck, K. (Speaker)[1]; Alfreider, M.[1]; Burtscher, M.[1]; Kiener, D.[1]
[1]Montanuniversität Leoben

3:30 PM | Lecture
Fracture size effect in alumina single crystal: experiments-simulation dialogue
Henry, R. (Speaker)[1]; Doitrand, A.[2]; Meille, S.[2]
[1]GPM Rouen; [2]MATEIS, Lyon (France)

3:50 PM | Lecture
Role of temperature on micromechanical fracture behaviour of Laves phase in Mg-Al-Ca ternary alloy
Kanjilal, A. (Speaker)[1]; Rehman, U.[1]; Best, J.P.[1]; Dehm, G.[1]
[1]Max-Planck-Institut für Eisenforschung, Düsseldorf

4:10 PM | Lecture
Micro-bending investigations of stratified surface layers on rail wheel materials
Freisinger, M. (Speaker)[1]; Hahn, R.[2]; Mayrhofer, P.[3]; Zauner, L.[2]
[1]AC²T research GmbH, Wiener Neustadt (Austria); [2]Christian Doppler Laboratory for Surface Engineering of high-performance Components, Wien (Austria); [3]TU

Room SH 0.105

D: Characterization and Modeling

D05.02: Characterisation and modelling of Metal halide perovskites

2:10 PM | Highlight Lecture
Interface Defects in Halide Perovskite Semiconductor Devices
Schulz, P. (Speaker)[1]
[1]CNRS, Palaiseau (France)

2:30 PM | Lecture
Photovoltage generation at different solar cell interfaces investigated with time-resolved photoelectron spectroscopy
Cappel, U. (Speaker)[1]
[1]The Royal Institute of Technology (KTH), Stockholm (Sweden)

2:50 PM | Lecture
First-principles modelling of the electronic and excited state structure of heterogenous halide perovskites
Leppert, L. (Speaker)[1]
[1]University of Twente, Enschede (Netherlands)

3:10 PM | Lecture
Accurate band gaps and optical spectra of halides and oxides from a non-empirical, localization based optimal tuning of a screened range-separated hybrid functional
Ohad, G. (Speaker)[1]; Neaton, J.B.[2]; Kronik, L.[1]; Gant, S.E.[2]; Wing, D.[1]; Haber, J.B.[2]; Camarasa-Gómez, M.[1];

3:30 PM | Lecture
Resolving defect densities and lifetimes in perovskite solar cells using frequency domain methods
Ravishankar, S. (Speaker)[1]; Rau, U.[1]; Kirchartz, T.[1]
[1]Forschungszentrum Jülich GmbH

3:50 PM | Lecture
Search for stable mixed-halide perovskites using machine-learning potential
Hong, C.[1]; Han, S.[1]; Yim, K.[2]; Youn, Y. (Speaker)[2]
[1]Seoul National University; [2]Korea Institute of Energy Research, Daejeon (South Korea)

4:10 PM | Lecture | online
On the material transfer in polymer contact electrification: Computational and experimental insights
Verners, O. (Speaker)[1]; Lapčinskis, L.[1]; Šutka, A.[1]
[1]Rīga Technical university

Room SH 0.106

D: Characterization and Modeling

D07.02: Grain Boundaries II

2:10 PM | Lecture | online
Theoretical and experimental grain boundary energies in fcc and bcc metals and alloys
Lu, S. (Speaker)[1]
[1]Royal Institute of Technology KTH, Stockholm (Sweden)

2:30 PM | Lecture
Active learning approach for grain boundary parameter space sampling
Schmalofski, T. (Speaker)[1]; Kroll, M.[2]; Thome, P.[1]; Dette, H.[1]; Janisch, R.[1]
[1]Ruhr Universität Bochum; [2]Universität Bayreuth

2:50 PM | Lecture
Atomistic modelling of recovery and solute segregation and in Cu-Al alloys: coupling molecular dynamics and Monte Carlo simulations
Kumar, S. (Speaker)[1]
[1]Indian Institute of technology Bombay, Mumbai (India)

3:10 PM | Lecture
Density of states as feature for machine learning grain boundary segregation
Dösinger, C. (Speaker)[1]; Hammerschmidt, T.[2]; Peil, O.[3]; Scheiber, D.[3]; Romaner, L.[1]
[1]Montanuniversität Leoben; [2]Ruhr-Universität Bochum; [3]Materials Center Leoben Forschung GmbH

3:30 PM | Lecture
First consistent high throughput segregation assessment for Mg, Al, Ti, Fe, Ni, Cu, Nb, Mo, Ta, and W using ab initio and ML methods
Scheiber, D. (Speaker)[1]; Peil, O.[1]; Razumovskiy, V.[1]; Romaner, L.[2]
[1]Materials Center Leoben Forschung GmbH; [2]Montanuniversität Leoben

3:50 PM | Lecture
Grain boundary segregation using an improved Machine-Learning approach: the role of grain boundary symmetry
Demange, G. (Speaker)[1]; Borges, Y.[1]; Zapolsky, H.[1]; patte, R.[1]
[1]Université de Rouen Normandie

4:10 PM | Lecture
Structure and mobility of twin boundaries in Ni-Ti Shape-Memory Alloys revealed by atomistic simulations and crystallographic theory
La Rosa, L. (Speaker)[1]; Maresca, F.[1]
[1]University Of Groningen

Room SH 0.107

D: Characterization and Modeling

D10.02: Multiscale modelling, Artificial Intelligence and Data driven analysis

2:30 PM | Highlight Lecture
Multi-scale modelling of martensite in steels: a journey from the atomistics of martensitic transformations to the micromechanical response
Maresca, F. (Speaker)[1]; Kouznetsova, V.[2]; Polatidis, E.[3]; Smid, M.[3]; Van Swygenhoven, H.[3]; Geers, M.[2]; Curtin, W.[4]

2:50 PM | Lecture
Designing Temperature Dependent Free Energy Functionals for Multi-scale Modelling of Electrode Materials
Hammadi, S. (Speaker)[1]; Kullgren, J.[1]; Brandell, D.[1]; Broqvist, P.[1]
[1]Uppsala University

3:10 PM | Lecture
Multi-scale simulation of microstructure evolutions of the superconductor BaFe2As2 using phase-field method and first-principles calculation
Kondo, K. (Speaker)[1]; Ishii, A.[2]; Yamanaka, A.[1]; Yamamoto, A.[1]
[1]Tokyo University of Agriculture and Technology; [2]National Institute

3:30 PM | Lecture
Data-Driven Thermal and Percolation Analyses of 3D Composite Structures with Interface Resistance
Fathidoost, M. (Speaker)[1]; Yang, y.[1]; Oechsner, M.[1]; Xu, B.-X.[1]
[1]Technische Universität Darmstadt

3:50 PM | Lecture
Multiscale Artificial Materials Intelligence
Roslyakova, I. (Speaker)[1]
[1]Ruhr-Universität Bochum

4:10 PM | Lecture | online
Multiscale Modelling of Bulk Organic Systems using Graph Convolutional Neural Networks
Ricci, E.[1]; Gerakinis, D.-P.[1]; Giannakopoulos, G.[1]; Karkaletsis, V.[1]; Theodorou, D.[2]; Vergadou, N. (Speaker)[1]
[1]National Centre for Scientific Research "Demokritos", Athens (Greece); [2]National Technical

Room SH 0.109

D: Characterization and Modeling

D08.02: Ontologies in Materials Science and Engineering

2:10 PM | Lecture
Landscape Analysis of Ontologies in Materials Science and Engineering
Norouzi, E. (Speaker)[1]; Waitelonis, J.[1]; Sack, H.[1]
[1]FIZ Karlsruhe – Leibniz Institute for Information Infrastructure, Eggenstein-Leopoldshafen

2:30 PM | Lecture
MSE-KG: A knowledge graph for materials science and engineering
Azocar Guzman, A. (Speaker)[1]; Fathalla, S.[1]; Norouzi, E.[2]; Ihsan, A.Z.[1]; Hofmann, V.[1]; Waitelonis, J.[2]; Laadhar, A.[3]; Fliegl, H.[2]; Fritzen, F.[3]; Sack, H.[2]; Sandfeld, S.[1]
[1]Forschungszentrum Jülich GmbH; [2]FIZ Karlsruhe, Eggenstein-

2:50 PM | Lecture
PMD Core Ontology: A Community Driven Mid-Level Ontology in the MSE Domain
Birkholz, H. (Speaker)[1]; Bayerlein, B.[2]; Schilling, M.[2]; Grundmann, J.[1]; Hanke, T.[3]; Waitelonis, J.[4]; Sack, H.[4]; Mädler, L.[1]
[1]Leibniz Institut für Werkstofforientierte Technologien - IWT, Bremen; [2]Bundesanstalt für

3:10 PM | Lecture
Materials Mechanical Testing Ontology (MTO)
Beygi Nasrabadi, H. (Speaker)[1]; Eisenbart, M.[2]; Hanke, T.[3]; Skrotzki, B.[1]
[1]Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin; [2]Forschungsinstitut Edelmetalle + Metallchemie (fem), Schwäbisch Gmünd; [3]Fraunhofer-Institut für Werkstoffmechanik IWM, Freiburg

3:30 PM | Lecture | online
Data Federation Ontology for the Development of Biodegradable Plastics
Ishii, M. (Speaker)[1]; Ichikawa, N.[2]; Ohtsuka, R.[2]; Sakamoto, K.[1]; Yatsuzuka, S.[2]
[1]National Institute for Materials Science, Tsukuba (Japan); [2]National Institute of Technology and Evaluation, Tokyo (Japan)

3:50 PM | Lecture
Easy access to smart materials data and models using an ontology based data and model access approach
Mertens, J. (Speaker)[1]; Pinkal, D.[2]; Wegener, M.[2]; Wagner, M.[3]; Sattel, T.[4]; Maas, J.[1]; Leemhuis, M.[5]; Özcep, Ö.[5]; Schmidtke, H.[5]; Courant, R.[1]; Dahlmann, M.[4]; Stark, S.[6]; Böhm, A.[7]; Pagel,

4:10 PM | Lecture | online
The Materials Design Ontology for Materials Calculation Data Integration
Li, H. (Speaker)[1]; Abd Nikooie Pour, M.[1]; Li, Y.[1]; Hartig, O.[1]; Armiento, R.[1]; Lambrix, P.[1]
[1]Linköping University

Room SH 1.101

D: Characterization and Modeling

D01.02: X-ray imaging: applications

2:10 PM | Highlight Lecture
In situ synchrotron multi-resolution characterization of the mechanical and degradation performance of SLM WE43 scaffolds for bone regeneration systems
Martin-Alonso, M.D. (Speaker)[1]; Benn, F.[2]; Kopp, A.[2]; Majkut, M.[3]; Molina-Aldareguia, J.[1]; Sket, F.[1];

2:30 PM | Lecture
New Insights into Laser Additive Manufacturing from in-situ Synchrotron X-ray Imaging
Chen, Y. (Speaker)[1]; Clark, S.[2]; Collins, D.[3]; Detlef, C.[4]; Honkimaki, V.[4]; Lee, P.D.[5]; Leung, A.[5]; Ludwig, W.[6]; Rack, A.[7]; Reed, R.[8]; Tang, Y.[8]; Withers, P.[9]; Wright, J.[4]; Yildirim, C.[4]
[1]RMIT University, Melbourne

2:50 PM | Lecture
Analysis of melt pool oscillation by in situ high-speed synchrotron X-ray imaging
Seibold, M. (Speaker)[1]; Bergmann, J.P.[1]; Chen, Y.[2]; Chen, Y.[3]; Friedmann, H.[1]; Fröhlich, F.[1]; Hellwig, P.[1]; Kallage, P.[4]; Nagel, F.[4]; Rack, A.[2]; Requardt, H.[2]; Schmidt, L.[1]; Schricker, K.[1]
[1]Technische Universität Ilmenau;

3:10 PM | Lecture
4D multiscale investigation of a new Aluminum Alloy for Additive Manufacturing
Bugelnig, K. (Speaker)[1]
[1]German Aerospace Center (DLR), Köln

3:30 PM | Lecture
Studying Dislocation Patterning During Plastic Deformation of Pure Aluminium by Means of Dark-Field X-ray Microscopy
Zelenika, A. (Speaker)[1]; Yildirim, C.[2]; Winther, G.[3]; Detlefs, C.[2]; Rodriguez-Lamas, R.[2]; Poulsen, H.F.[3]
[1]Technical University of Denmark/ESRF, Grenoble (France);

3:50 PM | Lecture
Nano characterization of a next-generation aluminium alloy for 3D printing
Mani, D. (Speaker)[1]
[1]European Synchrotron Radiation Facility - ESRF, Grenoble (France)

4:10 PM | Lecture
Structure-dynamics relationships in cryogenically deformed bulk metallic glass
Spieckermann, F. (Speaker)[1]; Schafler, E.[2]; Eckert, J.[3]; Sopu, D.[4]; Soprunyuk, V.[2]; Kerber, M.[2]; Bednarčík, J.[5]; Schökel, A.[6]; Rezvan, A.[4]; Ketov, S.[4]; Sarac, B.[4]
[1]Montanuniversität Leoben; [2]University of Vienna;

Room SH 1.104

D: Characterization and Modeling

D02.05: Analytical microscopy for materials characterization

2:10 PM | Lecture
Correlative imaging of biodegradable Mg-based alloys using in situ synchrotron radiation-based nano CT and (S)TEM
Reimers, J. (Speaker)[1]; Lipinska-Chwalek, M.[2]; Mayer, J.[2]; Willumeit-Römer, R.[3]; Zeller-Plumhoff, B.[3]
[1]Helmholtz-Zentrum Hereon & Forschungszentrum Jülich GmbH,

2:30 PM | Lecture
Direct measurement of magnetoelastic coupling in a soft ferromagnet using Lorentz 4D-STEM
Kang, S. (Speaker)[1]; Dunin-Borkowski, R.[2]; Kübel, C.[3]; Mu, X.[3]
[1]TU Darmstadt; [2]Research Centre Juelich; [3]Karlsruhe institute of technology, Eggenstein-Leopoldshafen

2:50 PM | Lecture
Effect of electron beam irradiation on electrical properties of WS2 nanotubes: an in-situ/in-operando study
Kovarik, M. (Speaker)[1]; Citterberg, D.[1]; Šikola, T.[2]; Kolíbal, M.[2]
[1]CEITEC BUT, Brno University of Technology; [2]Institute of Physical Engineering, Brno University of Technology

3:10 PM | Lecture
In situ electron microscopy for strain engineering of charge transport and photovoltaic performance of individual III-V semiconductor nanowires
Zeng, L.[1]; Holmér, J.[1]; Dhall, R.[2]; Gammer, C.[3]; Kanne, T.[4]; Krogstrup, P.[4]; Nygård, J.[4];

3:30 PM | Lecture
Multimodal surface analysis of metals and alloys using AFM-in-SEM
Hegrová, V. (Speaker)[1]; Dao, R.[1]; Neuman, J.[1]
[1]NenoVision, Brno (Czech Republic)

3:50 PM | Lecture
Surface and bulk chemical imaging of Ti3C2Tx MXenes by scanning X-ray microscopy
Amargianou, F. (Speaker)[1]; Bärmann, P.[1]; Gonzalez-Julian, J.[2]; Petit, T.[1]; Shao, H.[3]; Taberna, P.-L.[3]; Weigand, M.[1]
[1]Helmholtz-Zentrum Berlin for Materials and Energy; [2]Institute of Mineral Engineering, Aachen;

4:10 PM | Lecture
In-situ observation of precipitate formation using scanning X-ray fluorescence in novel Al alloy optimized for additive manufacturing
Lazar, I. (Speaker)[1]; Mehta, B.[2]; Mikkelsen, A.[1]
[1]Lund University; [2]Chalmers University of Technology, Gothenburg (Sweden)

Room SH 1.105

E: Energy and Transportation

E04.02: Innovative feeds for redox flow batteries

2:50 PM | Keynote Lecture
Towards High Energy Density Redox Flow Batteries with Insoluble Solid Booster Materials
Rourke, D.[1]; Chaurasia, S.[1]; Aravamuthan, S.R.[1]; Pahari, S.[2]; Bolibok, J.[2]; Cappillino, P.[2]; Agar, E. (Speaker)[1]
[1]University of Massachusetts Lowell, Lowell, MA (United States); [2]University of Massachusetts Dartmouth, North Dartmouth, MA (United States)

3:30 PM | Lecture
Zinc-Iron Rechargeable Flow Battery with High Energy Density
Gibertini, E.[1]; Magagnin, L. (Speaker)[1]
[1]Politecnico di Milano

3:50 PM | Lecture
Organic redox flow battery with multielectron-transfer-type molecular assembly
Ohira, A. (Speaker)[1]; Funaki, T.[1]; Carbone, A.[2]; Irene, G.[2]; Hosono, E.[1]; Sakai, T.[1]; Kanega, R.[1]; Aakura, D.[1]; Sato, Y.[1]
[1]National Institute of Advanced Industrial Science and Technology, Tsukuba (Japan); [2]National Council

4:10 PM | Lecture
Microelectrode-Based Probing of Multi-Electron Processes and Charge Propagation Kinetics in Polytungstate Electrolytes for Redox Flow Batteries
Rutkowska, I. (Speaker)[1]; Janiszewska, C.[1]; Vezzu, K.[2]; Negro, E.[2]; Di Noto, V.[2]; Kulesza, P.[1]
[1]University of Warsaw; [2]University

Room SH 1.106

E: Energy and Transportation

E03.05: Materials for Extreme Environments

2:50 PM | Highlight Lecture
From ORIENT-NM to CONNECT-NM: preparing a co-funded European partnership to promote a change of paradigm in the field of nuclear materials
Malerba, L. (Speaker)[1]; Serrano, M.[1]
[1]CIEMAT, Madrid (Spain)

3:10 PM | Lecture
Cryogenic shape memory alloys for extreme environment
Nespoli, A. (Speaker)[1]; Artini, C.[2]; Fanciulli, C.[1]; Ninarello, D.[1]; Pani, M.[2]; Passaretti, F.[1]
[1]National Research Council - Institute of Condensed Matter Chemistry and Technologies for Energy, Lecco (Italy); [2]University of Genova

3:30 PM | Lecture
Recent Progress in Pressure Dependent Phase Diagram Calculation
Lee, J. (Speaker)[1]; Makov, G.[2]
[1]Korea University, Seoul (South Korea); [2]Ben-Gurion University of the Negev, Beer-Sheva (Israel)

3:50 PM | Lecture
Exploring refractory high entropy alloys hyper-space using high-throughput material science and machine learning methods
Wieczerzak, K. (Speaker)[1]; Groetsch, A.[1]; Michler, J.[1]; Schwiedrzik, J.[1]; Widmer, R.[1]
[1]Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun (Switzerland)

4:10 PM | Lecture
Influence of Robot Kinematics on Properties of Cold Sprayed Inconel®625 Thick Deposits
Taherkhani, F. (Speaker)[1]
[1]Helmut-Schmidt-Universität / Universität der Bundeswehr Hamburg

Room SH 1.107

E: Energy and Transportation

E01.02: Composite Materials

2:10 PM | Lecture
Characterization of damage in hybrid and composite materials via X-ray CT: A review of current findings and main challenges, including a feasibility study with the example of glass fibre reinforced aluminium laminate
Shah, C. (Speaker)[1]; von Hehl, A.[1]

2:30 PM | Lecture
Flax fibre metal laminates (FLARE): A bio-based FML alternative combining impact resistance and vibration damping
Alcaraz, M.[1]; Alderliesten, R.C. (Speaker)[2]; Mosleh, Y.[1]
[1]TU Delft; [2]Delft University of Technology

2:50 PM | Lecture
Damage Modelling of Ceramic Matrix Composites (CMCs) for High-Temperature Application
Hohe, J. (Speaker)[1]; Findeisen, C.[1]
[1]Fraunhofer Institute for Mechanics of Materials IWM, Freiburg

3:10 PM | Lecture
Fabrication of bimetallic pads based on foam skeletons for braking system
An, T. (Speaker)[1]; Balloy, D.[1]; Cristol, A.-l.[1]; Magnier, V.[1]
[1]University of Lille

3:30 PM | Lecture
Novel 3D interpenetrating Al-Si alloy/Si3N4 composite based on porous Si3N4 fabricated at low temperature
Kota, N. (Speaker)[1]; Roy, S.[1]
[1]Indian Institute of Technology, Kharagpur

3:50 PM | Lecture
Matrix-less syntactic foams for the lightweight, high-performance composite design
Shishkin, A. (Speaker)[1]; Steins, I.[1]; Zalite, I.[1]; Lapkovskijs, V.[1]; Zemcenkovs, V.[1]; Abramovskis, V.[1]; Ozoloins, J.[1]
[1]Riga Technical University

4:10 PM | Lecture
Stiffness-oriented Optimization of Material Distribution in Multi-Material Components
Lehmhus, D. (Speaker)[1]; Bosse, S.[2]; Mounchili, A.P.[3]; Struss, A.[3]
[1]Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, Bremen; [2]University of Bremen; [3]Rytle GmbH, Bremen

Room SH 1.108

E: Energy and Transportation
A: Functional Materials

E07.05: Membranes and Membrane-Electrode Assemblies for PEMFCs and PEMELS

2:30 PM | Highlight Lecture
Model-based investigation of PEMFC ageing during real-world automotive operation
Grimaldi, A. (Speaker)[1]; Verducci, F.[1]; Colombo, E.[1]; Casalegno, A.[1]; Baricci, A.[1]
[1]Politecnico di Milano

2:50 PM | Lecture
Performance optimization of Fuel Cells Polymer Hybrid membranes thanks to SG chemistry
Gondrexon, M. (Speaker)[1]; Gonon, L.[2]; Mareau, V.[2]; Mendil Jakani, H.[3]
[1]Grenoble INP; [2]Université Grenoble Alpes; [3]CEA, Grenoble (France)

3:10 PM | Lecture
Assessment of composite sPEEK-porphyrin membranes for PEFC applications
Carbone, A.[1]; Castriciano, M.A.[2]; Romeo, A.[2]; Gatto, I. (Speaker)[1]
[1]CNR ITAE-Istituto di Tecnologie Avanzate per l'Energia "Nicola Giordano", Messina (Italy); [2]Università di Messina

3:30 PM | Lecture
Decoration of CeO2 nanoparticles radical scavengers with innovative anchoring groups in Aquivion®-based Proton Exchange Membranes
Stucchi, D. (Speaker)[1]; Bonizzoni, S.[2]; Caielli, T.[3]; Mustarelli, P.[3]
[1]University of Milano-Bicocca; [2]università degli studi di Milano

3:50 PM | Lecture
Investigation the effect of Argon plasma pre-treatment on the performance of Aquivion membranes coated with TiO2 films by ALD technique in proton exchange membrane water electrolysis
Namdar, H. (Speaker)[1]; Laidani, N.[2]; Micheli, V.[2]; Testi. M.[2]; Ataollahi. N.[3]; Erol.

4:10 PM | Lecture
Corrosion of Steel Electrodes in Acidic Media for the Design of PEMWE Components
Chen, X. (Speaker)[1]
[1]The University of Hong Kong

Room SH 0.101

D: Characterization and Modeling

D04.06: High Strain Rates & Impact Testing

5:00 PM | Keynote Lecture
Prediction of the impact behavior of composite plies from instrumented nano-impact tests
Molina-Aldareguia, J. (Speaker)[1]; Galvez, F.[2]; Gonzalez, C.[1]; Rueda, M.[1]; Sket, F.[1]
[1]IMDEA Materials Institute, Getafe (Spain); [2]Universidad Politécnica de Madrid, Getafe (Spain)

5:40 PM | Lecture
Ultra-high strain rate nanoindentation and microcompression
Bhaskar, L.K. (Speaker)[1]; Bellon, B.[1]; Sonawane, D.[1]; Holz, H.[1]; Frey, D.[2]; Mohanty, G.[3]; Dehm, G.[1]; Ramachandramoorthy, R.[1]
[1]Max-Planck-Institut für Eisenforschung, Dusseldorf; [2]Alemnis AG, Thun (Switzerland); [3]Tampere University

6:00 PM | Lecture
High Strain Rate Nanoindentation – Recent Advances and Perspectives
Widmer, R. (Speaker)[1]; Breguet, J.-M.[1]; Pero, R.[1]; Randall, N.[1]
[1]Alemnis AG, Thun (Switzerland)

6:20 PM | Lecture
Anomalous strength behavior of L12 intermetallic compound Ni3Si at high strain rates studied by nanoindentation at elevated temperatures
Merle, B. (Speaker)[1]; Pharr, G.[2]; Walker, C.[2]; Zenk, C.[3]
[1]University of Kassel; [2]Texas A&M University, College Station (United States); [3]Friedrich-Alexander-University Erlangen-Nürnberg (FAU)

6:40 PM | Lecture
Testing of dewetted Nickel Micro-particles at ultra-high strain rates
Bellón, B. (Speaker)[1]; Bhaskar, L.[1]; Sonawane, D.[1]; Holz, H.[1]; Ramachandramoorthy, R.[1]; Dehm, G.[1]
[1]Max Planck Institut für Eisenforschung, Düsseldorf

Room SH 0.105

D: Characterization and Modeling

D05.03: Microscopy and Modelling of Energy Materials

5:00 PM | Highlight Lecture
On the mapping of the electrical properties of materials at the nanoscale: the key role of scanning probe microscopy
Leclere, P. (Speaker)[1]
[1]University of Mons (UMONS)

5:20 PM | Lecture
Nano-scale composition mapping of organic materials for photovoltaics by AFM-IR microscopy
Moons, E. (Speaker)[1]; Christopholi, L.[1]; Jalan, I.[1]; Ericsson, L.[1]; van Stam, J.[1]
[1]Karlstad University

5:40 PM | Lecture
Cross-sectional Preparation of Complex Energy Devices and their Characterization by Advanced Microscopic Methods
Hepp, M. (Speaker)[1]; Butz, B.[1]
[1]University of Siegen

6:00 PM | Lecture
Multiscale Modelling Approach to Access Electronic Structure and Optical Properties of Polymeric Photovoltaic Materials
Franco, L.R.[1]; Marchiori, C. (Speaker)[1]; Moons, E.[1]; Araujo, M.[1]
[1]Karlstad University

6:20 PM | Lecture online
In-situ analysis of microscopic corrosion evolution of solar reflectors
Wette, J. (Speaker)[1]; Fernández-García, A.[1]; Sutter, F.[2]; Sánchez-Moreno, R.[1]; Wiesinger, F.[2]
[1]Ciemat-PSA, Tabernas (Almería) (Spain); [2]DLR, Almeria (Spain)

6:40 PM | Lecture
ConvNeXt adaptions in convolutional neural networks for defect detection in Li-ion batteries
Jansche, A. (Speaker)[1]; Kopp, A.[1]; Bernthaler, T.[1]; Schneider, G.[1]
[1]Aalen University of Applied Sciences - Technology and Economics

Room SH 0.106

D: Characterization and Modeling

D07.03: ML & interatomic Potentials

5:00 PM | Highlight Lecture
A novel approach for developing interatomic potentials in magnetic materials
Toda-Caraballo, I. (Speaker)[1]; Wróbel, J.S.[2]; Nguyen-Manh, D.[3]
[1]National Center for Metallurgical Research (CENIM-CSIC), Madrid (Spain); [2]Warsaw University of Technology; [3]Culham Centre for Fusion Energy (CCFE), United Kingdom Atomic Energy Authority (UKAEA),

5:20 PM | Lecture
Comparison of atomic environment descriptors with domain knowledge of the interatomic bond
Forti, M. (Speaker)[1]; Drautz, R.[1]; Hammerschmidt, T.[1]
[1]Ruhr-Universität Bochum

5:40 PM | Lecture
DFT-based machine learning potentials for modelling of Ta-Ti-V-W alloys
Wróbel, J. (Speaker)[1]; Goryaeva, A.[2]; Marinica, M.-C.[2]; Nguyen-Manh, D.[3]; Sobieraj, D.[1]
[1]Warsaw University of Technology; [2]Université Paris-Saclay, CEA, Gif-sur-Yvette (France); [3]United Kingdom Atomic Energy Authority, Abingdon (United Kingdom)

6:00 PM | Lecture
Towards more reliable and transferable models. Optimal design of computer experiments and data-driven inter-atomic potentials
Barzdajn, B. (Speaker)[1]
[1]The University of Manchester

6:20 PM | Lecture
Machine Learning and ab initio molecular dynamics insights into mechanical properties of diborides
Lin, S. (Speaker)[1]; Sangiovanni, D.G.[2]; Hultman, L.[2]; Mayrhofer, P.H.[1]; Koutná, N.[1]
[1]Vienna University of Technology; [2]Linköping University

Room SH 0.107

D: Characterization and Modeling

D10.03: Phase field modelling

5:00 PM | Highlight Lecture
Chemo-mechanical phase-field model in phase-transforming solids: precipitation in aluminium alloys and phase separation in battery electrode material
Liu, C. (Speaker)[1]; Shanthraj, P.[2]; Prangnell, P.[2]; Raabe, D.[1]
[1]Max-Planck-Institut für Eisenforschung GmbH, Manchester (United Kingdom); [2]University of Manchester

5:20 PM | Lecture
DFT- and CALPHAD-informed phase-field study of microstructure evolution in Al alloys
Safi, A.R. (Speaker)[1]; Mathew, E.[1]; Chafle, R.[1]; Klusemann, B.[1]
[1]Helmholtz-Zentrum Hereon, Geesthacht

5:40 PM | Lecture
Dislocation Dynamics Coupled Phase Field Modeling to Study the Microstructure evolution and Mechanical Behavior of Al-Cu Alloys
Singh Negi, A. (Speaker)[1]; Bandyopadhyay, S.[1]; Mukherjee, R.[1]; Prakash Gurao, N.[1]; Sridharan, A.[1]
[1]Indian Institute of Technology Kanpur

6:00 PM | Lecture
Phase-field modeling of pores/voids morphology in Compositionally-Graded Complex Alloys, validated by experiments
Riyahi khorasgani, A. (Speaker)[1]; Kundin, J.[1]; Steinbach, I.[1]; Camin, B.[2]
[1]ICAMS, Ruhr-Universität Bochum; [2]TU-Bremenhafen, Bremerhaven

6:20 PM | Lecture
Phase-field modelling of extended defects in metals under extreme conditions
Ruffini, A. (Speaker)[1]; Dabas, B.[2]; Finel, A.[1]; Le Bouar, Y.[1]; Jourdan, T.[3]
[1]LEM (Univ. Paris Saclay - ONERA - CNRS), Châtillon (France); [2]LEM (Univ. Paris Saclay - ONERA - CNRS) ; SRMP (CEA), Châtillon (France); [3]SRMP (CEA), Gif-Sur-Yvette (France)

6:40 PM | Lecture
Effect of electric and magnetic field on grain boundary grooving and migration: A Phase-Field study
Bandyopadhyay, S.[1]; Bhowmick, S.[1]; Mukherjee, R. (Speaker)[2]
[1]Indian Institute of Tehchnology Kanpur; [2]Indian Institute of Technology Kanpur

Room SH 0.109

D: Characterization and Modeling

D08.03: Experimental Aspects: Microstructure, Fatigue

5:00 PM | Lecture
Developing a "Microstructural Fingerprint" for Mining Process-Microstructure-Property Relationships
White, M. (Speaker)[1]; Race, C.[1]; Withers, P.[1]
[1]University of Manchester

5:20 PM | Lecture
DRAGen - A Tool for Microstructure Reconstruction and an Application for Fatigue Modelling
Henrich, M. (Speaker)[1]; Dölz, M.[1]; Fehlemann, N.[1]; Münstermann, S.[1]
[1]RWTH-Aachen University

5:40 PM | Lecture
Bayesian Optimization for Microstructural Design: An approach using DAMASK and the DRAGen RVE-Generator for damage-tolerant microstructures
Fehlemann, N. (Speaker)[1]; Henrich, M.[1]; Lenz, D.[1]; Münstermann, S.[1]
[1]RWTH Aachen University

6:00 PM | Lecture
Using knowledge graphs and machine learning to predict the fatigue behavior of high strength steels
Fliegener, S. (Speaker)[1]; Dominguez, J.M.[1]; Francisco Morgado, J.[1]; Kobialka, H.-U.[2]; Rosenberger, J.[1]; Tlatlik, J.[1]
[1]Fraunhofer IWM, Freiburg; [2]Fraunhofer IAIS, Sankt Augustin

6:20 PM | Lecture
From Low-Cycle Fatigue Lifetime Data to its Probabilistic Uncertainty Quantification – A Digitized Workflow
Kölzow, F. (Speaker)[1]; Saadi, M.[2]; Kontermann, C.[1]; Gottschalk, H.[2]; Oechsner, M.[1]
[1]Technical University of Darmstadt; [2]University of Wuppertal

4:30 PM | Coffee Break
Hörsaalzentrum Foyer

Room SH 1.101

D: Characterization and Modeling

D01.03: Electron beam imaging

5:00 PM | Highlight Lecture
Role of heterophase structures on mechanical and magnetic properties of AlCo(Cr)FeNi and Al0.3CoFeNi high-entropy alloys
Kovacs, A. (Speaker)[1]; Banerjee, R.[2]; Dunin-Borkowski, R.[1]; Lan, Q.[1]; Ramanujan, R.[3]
[1]Forschungszentrum Jülich; [2]University of North Texas, Denton (United States); [3]Nanyang Technological

5:20 PM | Lecture
Low-dose phase reconstruction of organic-inorganic halide perovskites using single side band ptychography
Yuan, B. (Speaker)[1]; Hofer, C.[1]; Pennycook, T.J.[1]; Yuan, B.[1]
[1]Electron microscopy for materials science, Antwerpen (Belgium)

5:40 PM | Lecture
Investigating solid discharge products in Lithium-Sulfur batteries using cryo-TEM and machine learning enhanced neutron scattering
von Mentlen, J.-M. (Speaker)[1]; Prehal, C.[1]; Senol Güngör, A.[1]; Wood, V.[1]
[1]ETH Zürich

6:00 PM | Lecture
Microstructural and Mechanical characterization of fretting obtained TTS in TA6V
Lefranc, V.[1]; Héripré, E.[1]; Vallet, M.[1]; Gandiolle, C. (Speaker)[1]; Fouvry, S.[2]; Aubin, V.[1]
[1]Université Paris-Saclay, Gif sur Yvette (France); [2]Laboratoire de Tribologie et Dynamique des Systèmes, Ecully (France)

6:20 PM | Lecture
Estimation of the Deformation of the Dislocation Cores Structural Units at the Grain Boundary between Simulated and Microscopic Data
Shamseldeen Ali Alhassan, A. (Speaker)[1]; Berkels, B.[1]; Mathews, P.[2]; Zhang, S.[2]
[1]AICES Graduate School, RWTH Aachen University; [2]MPIE, Duessseldorf

Room SH 1.104

D: Characterization and Modeling

D02.06: Correlative microscopy

5:00 PM | Lecture
Investigation of deeply buried features using a correlative workflow combining X-Ray Microscopy and fs-Laser assisted FIB/SEM
Schubert, T. (Speaker)[1]; Tordoff, B.[2]; Bernthaler, T.[1]; Schneider, G.[1]
[1]Aalen University; [2]Carl Zeiss Microscopy GmbH, Oberkochen

5:20 PM | Lecture online
Correlative multi-length scale in situ X-ray and electron microscopy
van de Kerkhof, G.T. (Speaker)[1]; Agrawal, S.[2]; Clarke, S.M.[2]; Craske, D.J.[3]; Dowhyj, M.[3]; Lindsay, R.[3]; Osundare, A.[3]; Parker, J.E.[1]; Schuster, M.E.[4]; Sk, M.H.[2]; Walker, J.M.[1]
[1]Diamond Light Source, Didcot (United Kingdom); [2]University of Cambridge; [3]University of Manchester; [4]Johnson

5:40 PM | Lecture
Development of registration software for correlative analysis of multi-modal imaging data
Irvine, S. (Speaker)[1]; Sefa, S.[1]; Galli, S.[2]; Zeller-Plumhoff, B.[1]; Moosmann, J.[1]
[1]Helmholtz-Zentrum Hereon, Hamburg; [2]Malmö University

Room SH 1.105

E: Energy and Transportation

E04.03: Advances in electrodes and separators for redox flow batteries

5:00 PM | Highlight Lecture
Nanofiber Mat Hydrogen Electrodes in a Hydrogen-Bromine Redox Flow Battery
Saadi, K.[1]; Fan, X.[2]; Hardisty, S.[1]; Pintauro, P. (Speaker)[2]; Zitoun, D.[1]
[1]Bar Ilan University, Ramat Gan (Israel); [2]Vanderbilt University, Nashville (United States)

5:20 PM | Lecture
Microstructural engineering of redox flow battery electrodes via non-solvent induced phase separation
Forner-Cuenca, A. (Speaker)[1]
[1]Eindhoven University of Technology

5:40 PM | Lecture
High Performance Carbon-Nano Onion based Electrode for Vanadium Redox Flow Battery
Fiorini, S.[1]; Zago, M.[2]; Casalegno, A.[2]; Cecchetti, M.[2]; Pagano, G.[1]; Di Fonzo, F. (Speaker)[1]
[1]X-nano, Milano (Italy); [2]Politecnico di Milano

6:00 PM | Lecture online
Polymeric Proton-Exchange Membranes for Redox Flow Batteries
Niccolai, F. (Speaker)[1]; Martinelli, E.[1]; Pucher, I.[2]
[1]University of Pisa; [2]Green Energy Storage, Trento (Italy)

6:20 PM | Lecture
Development of Ion Exchange Membranes with Low co-Ion Crossover for High Performance Redox Flow Batteries
Bae, C. (Speaker)[1]
[1]Rensselaer Polytechnic Institute, Troy, New York (United States)

6:40 PM | Lecture
Development and Scale-up of a Selective Layer for Vanadium Redox Flow Batteries via Ultrasonic Spray Coating
Cecchetti, M. (Speaker)[1]; Casalegno, A.[1]; Zago, M.[1]
[1]Politecnico di Milano

Room SH 1.107

E: Energy and Transportation

E01.03: Solar Energy Materials and Coatings

5:00 PM | Lecture online
The impact of nanofabrication in ultrathin solar cell technology
Teixeira, J. (Speaker)[1]; Alexandre, R.[1]; Fernandes, P.[1]; Lopes, T.[1]; Oliveira, A.[1]; Ribeiro, E.[1]; Salomé, P.[1]; Violas, A.[1]
[1]INL- International Iberian Nanotechnology Laboratory, braga (Portugal)

5:20 PM | Lecture
Improving material and interface quality in photovoltaic absorbers through the use of selective area epitaxy
Escobar Steinvall, S. (Speaker)[1]; Dick, K.A.[1]; Lehmann, S.[1]
[1]Lund University

5:40 PM | Lecture
UV-curable and biosourced polymer electrolytes for aqueous photovoltaics
Bella, F. (Speaker)[1]; Barolo, C.[2]; Bonomo, M.[2]; Fagiolari, L.[1]; Galliano, S.[2]
[1]Politecnico di Torino, Turin (Italy); [2]Università degli Studi di Torino

6:00 PM | Lecture
Development and Optimization of a Modular Stray Light Measurement System for Scattering Light Distribution on Optical Surfaces
Hippauf, B. (Speaker)[1]; Sauer, M.[2]; Taufertshöfer, N.[3]
[1]University of Applied Sciences, Saarbrücken; [2]HTW Saar University for Applied Sciences, Saarbrücken; [3]Alpha Engineering GmbH, Lorsch

Room SH 1.108

E: Energy and Transportation
A: Functional Materials

A07.01: Cellulose nanomaterials: From fundamentals to applications I

5:00 PM | Highlight Lecture
Low-density highly magnetic foams with aligned tannic acid-coated iron oxide nanoparticles and cellulose nanofibers
Hadi, S.E. (Speaker)[1]; Yeprem, H.A.[2]; Åhl, A.[1]; Morsali, M.[1]; Kapuscinski, M.[1]; Kriechbaum, K.[1]; Sipponen, M.H.[1]; Bergström, L.[1]
[1]Stockholm University; [2]Yıldız Technical University, Istanbul (Turkey)

5:20 PM | Lecture
Fabrication of Carbonized structure with controlled pore direction for improved CO2 capturing functionality using bio-material based nanofibers
Kim, T. (Speaker)[1]; Sergeev, D.[1]; Schwaiger, R.[1]
[1]Forschungszentrum Jülich, Juelich

5:40 PM | Lecture
Functionalization of Lignocellulosic Nanofibers with Metal Oxides nanoparticles via Colloidal Route to Manufacture Advance Composite Materials
Gonzalez, Z. (Speaker)[1]; Espinosa, E.[1]; Ferrari, B.[2]; Montenegro, R.[1]; Rodríguez, A.[1]; Usala, E.[1]
[1]Universidad de Córdoba; [2]Institute of

6:00 PM | Lecture
Martini 3 model of surface modified cellulose nanocrystals: investigation of aqueous colloidal stability
Pang, J. (Speaker)[1]; Mehandzhiyski, A.[1]; Östmans, R.[2]; Wågberg, L.[2]; Zozoulenko, I.[1]
[1]Linköping University, Norrköping (Sweden); [2]KTH Royal Institute of Technology, Stockholm (Sweden)

6:20 PM | Lecture
A computational study of cellulose regeneration: Coarse-grained molecular dynamics simulations
Pang, J. (Speaker)[1]; Mehandzhiyski, A.[1]; Zozoulenko, I.[1]
[1]Linköping University, Norrköping (Sweden)

6:40 PM | Lecture online
Cellulose-based optical fibres
Zollfrank, C. (Speaker)[1]; Reimer, M.[1]; Van Opdenbosch, D.[1]
[1]Technische Universität München, Straubing

Room HZ 1

Plenaries **B:** Structural Materials

B07.07: Novel approaches in materials development

10:30 AM | Highlight Lecture
Additively manufactured copper microlattices and their micromechanical properties at extreme conditions
Kang, S.-G. (Speaker)[1]; Bellón, B.[1]; Bhaskar, L.[1]; Wirth, J.[2]; Zubiri, B.A.[2]; Spiecker, E.[2]; Dehm, G.[1]; Ramachandramoorthy, R.[1]
[1]Max-Planck-Institut für

10:50 AM | Lecture
High temperature fatigue crack growth in nickel-based alloys joined by brazing and additive manufacturing
Bhadeliya, A. (Speaker)[1]; Rehmer, B.[1]; Fedelich, B.[1]; Jokisch, T.[2]; Skrotzki, B.[1]; Olbricht, J.[1]
[1]Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin; [2]Siemens Energy

11:10 AM | Lecture
Hollow specimens as simplified approach for testing metallic materials under high pressure hydrogen - development and utilization
Rhode, M. (Speaker)[1]; Nietzke, J.[1]; Konert, F.[1]; Sobol, O.[1]; Boellinghaus, T.[1]
[1]Bundesanstalt für Materialforschung und -prüfung

11:30 AM | Lecture
Correlation between microstructure and mechanical properties produced by direct energy deposition in the titanium-molybdenum system: High-throughput investigation
Paliwal, D. (Speaker)[1]; Gurao, N.P.[1]
[1]Indian Institute of Technology

11:50 AM | Lecture
Thermal Properties of Al2O3-AlSi12 Layered Composite: Experiments and Modelling
Sequeira, A.A. (Speaker)[1]; Bochenek, K.[1]; Hutsch, T.[2]; Weglewski, W.[1]; Basista, M.[1]
[1]Institute of Fundamental Technological Research POLISH ACADEMY OF SCIENCES, Warsaw (Poland); [2]Institute for

12:10 PM | Lecture
Materials informatics based on Calphad and ab initio databases
Reis, B.H.[1]; Büyüksulu, Ã.[1]; Tang, F.[1]; Keuter, P.[1]; to Baben, M. (Speaker)[1]
[1]GTT-Technologies, Herzogenrath

12:30 PM | Lecture
online
Microstructure-Aware Alloy Discovery
Arroyave, R. (Speaker)[1]
[1]Texas A&M University, College-Station (United States)

Room HZ 2

B: Structural Materials

B07.19: Alloy design and characterization

10:30 AM | Lecture
Lath boundary sliding in lath martensite quantitatively investigated by using molecular dynamics (MD) simulation and experiment
Zhang, M. (Speaker)[1]
[1]The University of Tokyo, Kashiwa (Japan)

10:50 AM | Lecture
Nickel titanium carbides alloy : a model alloy of austenitic steels
Belghoul, M.A. (Speaker)[1]; Ma, K.[2]; Decamps, B.[2]; Vermaut, P.[4]; Loyer-Prost, M.[1]
[1]CEA, saclay (France); [2]University of Birmingham, Birmingham, (United Kingdom); [3]CNRS, Ile de France (France);

11:10 AM | Lecture
Quantum mechanical study of the phase stability of TMD-based heterostructures for tribological applications
Perviz, E. (Speaker)[1]; Cammarata, A.[1]; Polcar, T.[2]
[1]Czech Technical University in Prague; [2]University of Southampton

11:30 AM | Lecture
Suzuki Segregation of Transition Metal Elements in Face-Centered Cubic Co and Ni Alloys: Electronic Origin and Alloy Design
Wen, D. (Speaker)[1]; Tucker, V.[2]; Titus, M.[2]
[1]University of Liverpool; [2]Purdue University, West Lafayette (United States)

11:50 AM | Lecture
Tailoring the mechanical properties of additively manufactured high-manganese steels
Capek, J. (Speaker)[1]; Haase, C.[2]; Kibaroglu, D.[2]; Polatidis, E.[3]; Strobl, M.[3]
[1]Paul Scherrer Institute PSI, Villigen - PSI (Switzerland); [2]RWTH Aachen University; [3]Paul Scherrer Institute, Villigen - PSI

12:10 PM | Lecture
Characterization of IN718 alloy produced by additive manufacturing and its application in lattice structures
Ferrarotti, A. (Speaker)[1]
[1]University of Turin

12:30 PM | Lecture
Viscoelastic-viscoplastic deformation of 316 Stainless Steel at elevated temperatures
Sithole, K. (Speaker)[1]
[1]University of Nottingham

Room HZ 3

H: Materials for Circularity and Sustainability

H05.01: Circularity in Polymeric Materials

10:50 AM | Lecture
High-performance recyclable biobased epoxy thermosets and its CFRCs designed for aerospace and space applications
Dinu, R.[1]; Lafont, U.[2]; Damiano, O.[3]; Orange, F.[1]; Mija, A. (Speaker)[1]
[1]Université Côte d'Azur, Nice (France); [2]ESA, Noordwijk (Netherlands); [3]Thales Alenia

11:10 AM | Lecture
Plant-derived organic carbon in materials – from polymers to oligomers
Hanstein, S. (Speaker)[1]; Wolf, M.[1]; Homm, G.[1]
[1]Fraunhofer Research Institution for Materials Recycling and Resource Strategies IWKS, Alzenau

11:30 AM | Lecture
online
Investigations on the mechanical property robustness of natural fibre reinforced polymer composites (NFRPC) under varying processing conditions
Krämer, A. (Speaker)[1]; Broening, J.[2]; Mitschang, P.[1]
[1]Leibniz-Institut für Verbundwerkstoffe GmbH

11:50 AM | Lecture
An Eco-Friendly Conformable Printed Circuit Board from Biobased Materials
Honarbari, A. (Speaker)[1]; Athanassiou, A.[2]; Cataldi, P.[2]
[1]Istituto Italiano di Tecnologia (IIT), GENOVA (Italy); [2]IIT, GENOVA (Italy)

12:10 PM | Lecture
Mycelium-bound composites for in-door applications and their biocycles
Soh, E.[1]; Saeidi, N. (Speaker)[2]; Javadian, A. (Speaker)[2]; Gan, J.K.[1]; E. Hebel, D.[2]; Le Ferrand, H.[1]
[1]Nanyang Technological University, Singapore (Singapore); [2]Karlsruhe Institute of Technology

12:30 PM | Lecture
Polymers from Sustainable Raw Materials
Bordado, J. (Speaker)[1]; Galhano dos Santos, R.[2]
[1]IST / C5Lab, LISBON (Portugal); [2]C5Lab, LISBON (Portugal)

Room HZ 4

B: Structural Materials

B05.07: Refractory High-Entropy Alloys

11:10 AM | Highlight Lecture
B2 precipitation-strengthened refractory compositionally complex Ta-Mo-Ti-Cr-Al alloys
Heilmaier, M. (Speaker)[1]; Christ, H.-J.[2]; Eggeler, Y.[1]; Greiner, C.[1]; Kauffmann, A.[1]; Laube, S.[2]; Schellert, S.[2]; Seils, S.[1]; Tirnuilai, A.S.[1]; Yang, L.[1]

11:30 AM | Lecture
Overcoming oxygen embrittlement of refractory high-entropy alloy via grain boundary engineering
Wu, Y. (Speaker)[1]; Wang, X.[1]
[1]University of Science and Technology Beijing

11:50 AM | Lecture
Formation of an oxygen-rich ordered phase from hcp precipitates in TiZrNbHfTa bcc high-entropy alloy
Zhao, Y. (Speaker)[1]
[1]Ruhr-Universität Bochum

12:10 PM | Lecture
Microstructure and high-temperature deformation behaviour of TiVZrNb light-weight refractory high entropy alloys
Jung, J. (Speaker)[1]; Bae, D.[2]; Han, J.[1]; Kim, S.[1]; Kosiba, K.[3]; Lee, J.[4]; Seok, J.[1]
[1]Korea Institute of Industrial Technology, Incheon (South

12:30 PM | Lecture
High-throughput screening of RHEAs based on the system MoNbTaWX (X=Al, Ti, and/or V)
Ribeiro, B. (Speaker)[1]; Barbosa, M.[2]; Santos, R.[1]; Sequeiros, E.W.[1]
[1]LAETA/INEGI – Institute of Science and Innovation in Mechanical and Industrial Engineering, Porto (Portugal);

Room HZ 5

B: Structural Materials

B01.07: Cast Iron I

10:50 AM | Highlight Lecture
online
Effect of Preconditioning Addition on Inoculated Spheroidal Graphite Cast Iron
Pires, A. (Speaker)[1]; Simões, S.[1]; Michels, L.[2]; Hartung, C.[2]; Ott, E.[2]; Silva Ribeiro, C.[1]
[1]DEMM/FEUP, Porto (Portugal); [2]Elkem Silicon Products,

11:10 AM | Lecture
Lime Powder as Reliable and Sustainable Substitution of Magnesium for Desulfurization Process in the Cast Iron Industry
Adhiwiguna, I. (Speaker)[1]; Deike, R.[1]; Walz, M.[2]
[1]Universität Duisburg Essen; [2]Fritz Winter Eisengießerei

11:30 AM | Lecture
Si–Mo Compacted Graphite Iron Castings Reinforced 'in situ' by Titanium Carbides Using SHSB Process
Marosz, J. (Speaker)[1]; Górny, M.[1]
[1]AGH University of Science and Technology, Kraków (Poland)

11:50 AM | Lecture
In situ synchrotron radiography investigation of graphite nodule evolution during solidification in ductile cast iron
Ding, X. (Speaker)[1]; Wigger, T.[2]; Tiedje, N.[3]; Hideyuki, Y.[4]; Taka, N.[4]; Hattel, J.[3]; Shepherd, J.[1]; Lee, P.[2]; Azeem, M.[1]

12:10 PM | Lecture
A simulation and experimental methodology to evaluate conditions for gas penetration from FURAN sand core into a cast iron melt
Belov, I.[1]; Matsushita, T. (Speaker)[1]; Fourlakidis, V.[1]; Sundaram, D.[1]; Diószegi, A.[1]
[1]Jönköping University

12:30 PM | Lecture
Effects of section thickness variation on microstructure
Romero Ramirez, R. (Speaker)[1]
[1]Linköpings University

Room HZ 6

B: Structural Materials

B02.01: Microstructure of Aluminium Alloys

10:50 AM | Keynote Lecture
Influence of hydrogen on natural and artificial ageing of aluminium alloys
Sauvage, X. (Speaker)[1]; Hachet, G.[2]
[1]University of Rouen Normandy, Saint-Étienne-du-Rouvray (France); [2]Groupe de Physique des Matériaux - Univ Rouen - CNRS, Saint Etienne du Rouvray (France)

11:30 AM | Lecture
Influence of Mn content and cold-rolling in the precipitation behaviour, texture evolution and mechanical response of wrought Al-Cu-Mn (ACM) alloys
Roy, S. (Speaker)[1]; Roy, S.[1]
[1]Indian Institute of Technology, Kharagpur

11:50 AM | Lecture
Nucleation and growth of Si-Diamond precipitates during and after hot rolling of an Al-Mg-Si automotive alloy
Falkinger, G. (Speaker)[1]; Kahlenberg, R.[2]; Mitsche, S.[3]; Pogatscher, S.[4]; Simon, P.[1]; Thum, A.[1]
[1]AMAG rolling GmbH, Ranshofen (Austria); [2]TU Wien; [3]TU Graz;

12:10 PM | Lecture
Characterization and Modelling of L12 Dispersoid Precipitation in 5XXX Aluminium Alloys with Additions of Zirconium, Scandium, Erbium, and Yttrium
Hughes, N. (Speaker)[1]; Robson, J.[1]; Fellowes, J.[1]
[1]The University of Manchester

12:30 PM | Lecture
online
Effect of vanadium on ductility of NiTi shape memory alloy
Tshabalala, L. (Speaker)[1]; Chikosha, S.[1]
[1]CSIR

Room HZ 7

H: Materials for Circularity and Sustainability

H10.01: Hydrogen Metallurgy I

10:30 AM | Keynote Lecture
Atomic scale transport mechanisms during hydrogen-based direct reduction for green steel making
Raabe, D. (Speaker)[1]; Ma, Y.[1]; Souza Filho, I.[1]
[1]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf

11:10 AM | Highlight Lecture
Scientific Questions in Hydrogen-based Ironmaking Processes
Lee, J. (Speaker)[1]; Geleta, D.D.[1]; Kim, E.[1]; Kim, H.[1]; Suh, I.[1]
[1]Korea University, Seoul (South Korea)

11:30 AM | Lecture
Hydrogen Reduction of Magnetite-Based Iron Ore Fines via a Fluidized Bed
Zheng, H. (Speaker)[1]; Schenk, J.[1]
[1]Montanuniversität Leoben

11:50 AM | Lecture
Fundamentals of green steel production via hydrogen plasma reduction of iron ores
Souza Filho, I. (Speaker)[1]; Raabe, D.[1]; Springer, H.[2]
[1]Max-Planck-Institut für Eisenforschung, Düsseldorf; [2]RWTH Aachen University

12:10 PM | Lecture
Surface reduction behavior of iron oxides
Heidari, A. (Speaker)[1]; Fabritius, T.[1]; Ghosalya, M.[1]; Hietava, A.[1]; Iljana, M.[1]; Urpelainen, S.[1]
[1]University of Oulu

12:30 PM | Lecture
Sustainable Fe fuel: H2-based direct reduction of combusted Fe powder
Choisez, L. (Speaker)[1]; Özgün, Ã.[2]; Hemke, K.[3]; Ma, Y.[2]; Raabe, D.[2]
[1]UCLouvain, Louvain-La-Neuve (Belgium); [2]Max Planck Institute for Iron Research, Düsseldorf; [3]Hochschule Bonn-Rhein-Sieg, Rheinbach

Room HZ 8

C: Processing

C01.07: In-operando analysis of AM

10:30 AM | Keynote Lecture
Operando X-ray diffraction and imaging during laser powder bed fusion
Van Petegem, S. (Speaker)[1]
[1]Villigen

11:10 AM | Lecture
Do dislocations evolve during metal 3D printing? - A synchrotron X-ray diffraction study
Gaudez, S. (Speaker)[1]; Abdesselam, K.A.[1]; Gharbi, H.[1]; Hegedüs, Z.[2]; Lienert, U.[2]; Pantleon, W.[3]; Upadhyay, M.[1]
[1]Ecole Polytechnique, Palaiseau (France); [2]DESY, Hamburg;

11:30 AM | Lecture
Can cooling rates be accurately extracted from time-resolved synchrotron diffraction experiments?
Gaudez, S. (Speaker)[1]; Abdesselam, K.A.[1]; Van Petegem, S.[2]; Weisz-Patrault, D.[1]; Upadhyay, M.V.[1]
[1]École Polytechnique, Villigen (Switzerland); [2]Paul Scherrer

11:50 AM | Lecture
In situ detection of cracks during laser powder bed fusion using acoustic emission and machine learning
Seleznev, M. (Speaker)[1]; Chernyavsky, D.[2]; Biermann, H.[1]; Weidner, A.[1]; Gustmann, T.[2]; Friebel, J.M.[1]; Peuker, U.A.[2]; Kühn, U.[2]; Hufenbach, J.K.[2];

12:10 PM | Lecture
Magnetic field control of melt flow during additive manufacturing
Fan, X. (Speaker)[1]
[1]University College London

12:30 PM | Lecture
Pore behaviours during directed energy deposition additive manufacturing
Zhang, K. (Speaker)[1]
[1]University College London

Room HZ 9

C: Processing

C02.03: Polymers

10:30 AM | Lecture
online
Toward standardised approach for assessment of mechanical part performance and process qualification for polymer additive manufacturing using fused filament fabrication process
Chardonneau, A.[1]; Lafont

10:50 AM | Lecture
Fused filament fabrication of biodegradable polyhydroxyalkanoates: Effect of process parameters on printability and surface roughness
Jena, A. (Speaker)[1]; Kumar, C.S.[1]; Samal, B.B.[1]; Varshney, S.K.[1]
[1]Indian Institute of Technology

11:10 AM | Lecture
An artificial intelligence approach for dynamic flow compensation in fused layer modelling for the enhancement of mechanical properties
Raths, M. (Speaker)[1]
[1]Ostbayerische Technische Hochschule Regensburg (OTH)

11:30 AM | Lecture
Additive Manufacturing of Polystyrene Foam: The State of Art, Need, and Applications
Gote, G. (Speaker)[1]; Kamble, P.[1]; Karunakaran, K.P.[1]; Mehta, A.K.[1]; Mittal, Y.[1]; Patil, Y.[2]; patel, A.[2]
[1]IITB, Mumbai (India); [2]NITIE, Mumbai (India)

11:50 AM | Lecture
Structure-property relationship in phase-separated (meth)acrylate photopolymers
Ahmadi, M. (Speaker)[1]; Göschl, M.[1]; Liska, R.[1]; Stampfl, J.[1]
[1]TU Wien

12:10 PM | Lecture
Additively Manufactured Lattice Structures for Sound Absorption
Zhai, W. (Speaker)[1]; Li, X.[1]
[1]National University of Singapore

12:30 PM | Lecture
Influence of the Design of Architected Cellular Structures on the Mechanical Properties in Laser-based Powder Bed Fusion of Thermoplastic Polyurethane
Hofmann, J. (Speaker)[1]; Koller, N.[1]; Bucht, L.[2]; Wudy, K.[1]
[1]Professorship of Laser-based

Room HZ 10

C: Processing

C09.04: Functional properties

10:50 AM | Highlight Lecture
online
SPD-processed Metals and Alloys for Implant Applications
Zehetbauer, M. (Speaker)[1]; Aitzetmüller, L.[1]; Horky, J.[2]; Lee, R.[3]; Mizelli-Ojdanic, A.[3]; Panigrahi, A.[4]; Schafler, E.[1]; Sulkowski, B.[2]; Waitz, T.[1]
[1]University Vienna, Wien (Austria); [2]RHP Technology GmbH, Seibersdorf (Austria);

11:10 AM | Lecture
online
Correlation between Microstructure and Magnetic Properties for the Fe(Ni)-NiO Nanocomposites synthesized by High Pressure Torsion
Zawodzki, M.[1]; Krenn, H.[2]; Pippan, R.[3]; Knoll, P.[2]; Weissitsch, L.[3]; Rafailovic, L.[3]; Wurster, S.[3]; Bachmaier, A.[3]

11:30 AM | Lecture
online
Processing of SmCo-based permanent magnets by severe plastic deformation and subsequent annealing treatments
Paulischin, A. (Speaker)[1]; Weissitsch, L.[1]; Wurster, S.[1]; Krenn, H.[2]; Pippan, R.[1]; Bachmaier, A.[1]
[1]Erich Schmid Institute of

11:50 AM | Lecture
SmCo5-Cu nanocomposites produced by high-pressure torsion – microstructural evolution and magnetic properties
Staab, F.[1]; Durst, K.[1]; Bruder, E. (Speaker)[1]; Schäfer, L.[1]; Skokov, K.[1]; Koch, D.[1]; Zingsem, B.[2]; Adabifiroozjaei, E.[1]; Molina-

12:10 PM | Lecture
online
Solid lubricants in severe plastically deformed Inconel 718
Kasalo, M. (Speaker)[1]
[1]Erich Schmid Institute of Materials Science of the Austrian Academy of Sciences, Leoben (Austria)

12:30 PM | Highlight Lecture
Use of cold rolling, HPT and HPTE for improvement of hydrogen storage characteristics of metal hydrides
Omranpour Shahreza, B.[1]; Huot, J. (Speaker)[2]
[1]Hydrogen Research Institute,, Trois-Rivières (Canada); [2]Université du Québec à Trois-Rivières, Trois-Rivieres (Canada)

Room HZ 11

C: Processing

C07.07: Laser processing and protective coatings on light alloys

10:50 AM | Keynote Lecture
Laser structuring of thin film metallic glasses
Pierson, J.-F. (Speaker)[1]; Borroto, A.[2]; Bruyère, S.[2]; Colombier, J.-P.[2]; Garrelie, F.[2]; Prudent, M.[3]; Steyer, P.[4]
[1]University of Lorraine, Nancy (France); [2]Université de Lorraine, Nancy (France); [3]Université de Saint Etienne; [4]INSA de Lyon, Villeurbanne (France)

11:30 AM | Lecture
Effect of dilution on laser clad TribaloyTM T800 on AISI 316 stainless steel substrate
Nandi, S.K. (Speaker)[1]; Ajithkanan, R.[2]; Withers, P.J.[2]; Matthews, A.[2]; Roy, S.[2]; Manna, I.[4]
[1]Henry Royce Institute, University of Manchester; Indian Institute of Technology

11:50 AM | Lecture
CoCrFeNiMn + 30%vol. NbC composite coatings synthesized by laser deposition
Diniz, B. (Speaker)[1]
[1]Universidade de Lisboa

12:10 PM | Lecture
Production of Black PEO coatings on Aluminium and Titanium alloys
Pezzato, L. (Speaker)[1]; Brunelli, K.[1]; Colusso, E.[1]; Dabalà, M.[1]; Kostelac, L.[1]; Piccinotti, A.[1]; Settimi, A.G.[1]
[1]University of Padova

12:30 PM | Lecture
Smart coatings with thermo-reversible crosslinks for 3D-printed WE43 magnesium alloy substrates
Lorero Gómez, I. (Speaker)[1]; Campo, M.[1]; De la Pezuela, J.[1]; González Prolongo, S.[1]; Rams, J.[1]; Torres, B.[1]
[1]Rey Juan Carlos University,

Room HZ 12

C: Processing

C10.07: Solid-state phase transformations

10:50 AM | Lecture
Upscaling transformation plasticity in steel based on full field FFT simulations of polycrystals undergoing phase transformations under applied loads
Nambiyankulam Hussain, S.H. (Speaker)[1]; Weisz-Patrault, D.[2]; Appolaire, B.[3];

11:10 AM | Lecture
Quasi-particle approach of the fcc→bcc structural transition in metals
Demange, G. (Speaker)[1]; Borges, Y.[1]; Lavrskyi, M.[1]; Patte, R.[1]; Zapolsky, H.[1]
[1]Université de Rouen Normandie

11:30 AM | Lecture
Modeling of phase transformation kinetics using symbolic regression
Bloder, B. (Speaker)[1]; Antretter, T.[1]; Ecker, W.[2]; Kronberger, G.[3]; Raninger, P.[3]; Sonnleitner, M.[4]
[1]Montanuniversität Leoben; [2]Materials Center Leoben Forschung GmbH; [3]University of Applied Sciences Upper Austria,

11:50 AM | Lecture
Interface precipitation during diffusion welding of alloy 800H: experiments and modelling
Godinot, C. (Speaker)[1]; Bernacki, M.[2]; Bernard, F.[3]; Rigal, E.[1]
[1]CEA, Grenoble (France); [2]Centre de mise en forme des matériaux, Mines Paristech, Sophia-Antipolis (France);

12:10 PM | Lecture
Full Field model to predict microstructures in precipitate strengthened alloys
Eymann, M. (Speaker)[1]; Perez, M.[1]; Elguedj, T.[1]; Chaise, T.[1]; Geslin, P.-A.[1]
[1]INSA Lyon, Villeurbanne (France)

12:30 PM | Lecture
Microstructure evolution during martensite decomposition in additively manufactured Ti-6Al-4V: Insights from in-situ characterisation and phase-field modelling
Boccardo, A. (Speaker)[1]; Zou, Z.[2]; Simonelli, M.[2];

Room HZ 14

G: Education, Strategy, and Technology Transfer

FEMS Master Thesis Award

C00.04: Materials Science Education I

10:30 AM | Lecture
DIY-perovskite-inspired solar cells for school experiments
Ünlü, F. (Speaker)[1]
[1]Helmholtz-Zentrum Berlin für Materialen und Energie GmbH

10:50 AM | Lecture
Expanding design in materials courses: use of simulation and selection software tools
Plocher, J. (Speaker)[1]; Masi, L.[2]; Tyler, K.[2]
[1]Ansys Germany GmbH, Stuttgart; [2]Ansys, Cambridge (United Kingdom)

11:10 AM | Lecture
The Relevance of Teaching Materials Data Management
Mercier, D. (Speaker)[1]; Plocher, J.[1]
[1]Ansys Inc., Lyon (France)

11:30 AM | Lecture
International Challenge on Materials Selection: an International Collaborative Experience in Education
Tarancón, S. (Speaker)[1]; Tejado, E.[1]; Orellana, J.[1]; Pastor, J.Y.[1]
[1]Universidad Politécnica de Madrid

11:50 AM | Lecture
Project work with engineering students in the field of materials
Thomser, C. (Speaker)[1]; Karneboge, J.[1]; Khalil, A.[1]; Kössler, C.[1]; Luppertz, C.[1]; Rothe, I.[1]
[1]Hochschule Bonn-Rhein-Sieg, Sankt Augustin

12:10 PM | Lecture
Sustainability aspects in the use of processing media for forming or cutting
Joksch, S. (Speaker)[1]
[1]Oemeta Chemische Werke GmbH, Uetersen

HÖRSAALZENTRUM - *LECTURE HALL CENTER*

Room HZ 1	Room HZ 2	Room HZ 3	Room HZ 4	Room HZ 5	Room HZ 6	Room HZ 7
Plenaries **B:** Structural Materials	**B:** Structural Materials	**H:** Materials for Circularity and Sustainability	**B:** Structural Materials	**B:** Structural Materials	**B:** Structural Materials	**H:** Materials for Circularity and Sustainability

12:50 PM **I Lunch Break**
Lunch Area

12:10 PM
Poster Session
Area D
Hörsaalzentrum
Lecture Hall Center
Foyer 3rd Floor

Room HZ 8	Room HZ 9	Room HZ 10	Room HZ 11	Room HZ 12	Room HZ 14
C: Processing	**C:** Processing	**C:** Processing	**C:** Processing	**C:** Processing	**G:** Education, Strategy, and Technology Transfer FEMS Master Thesis Award

12:10 PM
Poster Session
Area H
Hörsaalzentrum
Lecture Hall Center
Foyer 3rd Floor

12:50 PM **I Lunch Break**
Lunch Area

13:00 PM **I Panel**
G01.02: Panel-Discussion
Technology Transfer Panel

B07.08: Microstructure and mechanical properties of materials

2:50 PM | Lecture
Automated Identification of Slip System Activity Fields from Digital Image Correlation Data
Vermeij, T. (Speaker)[1]; Peerlings, R.[1]; Geers, M.[1]; Hoefnagels, J.[1]
[1]Eindhoven University of Technology

3:10 PM | Lecture
Correlating Defects to Fatigue Performance of Selective Laser Melted Al-Si10-Mg Alloys
Ahmed, S.S.I. (Speaker)[1]; Roy, M.[2]; Zhang, Y.[3]; Wu, S.[4]; Dore, M.[3]; Withers, P.[2]
[1]The University of Manchester; [2]Henry Royce Institute, Manchester (United Kingdom); [3]TWI, Cambridge (United Kingdom); [4]Southwest Jiaotong

3:30 PM | Lecture
Coupling quantitative microstructural measurements to mechanical properties using correlative mechanical microscopy
Trimby, P. (Speaker)[1]; Mouginot, R.[2]; Muntwyler, S.[2]
[1]Oxford Instruments Nanoanalysis, High Wycombe

3:50 PM | Lecture
Favorable Habit Plane Plasticity in Lath Martensite in DP Steel, revealed by microstructure strain maps of '1D', '2D' & '3D' tests
Hoefnagels, J. (Speaker)[1]; Kerkhof, R.[1]; Vermeij, T.[1]
[1]Eindhoven University of Technology

4:10 PM | Lecture
Effect of aging on microstructure and mechanical properties of Fe-30Mn-9Al-1C steel on macro- and microscales
Gómez Fernández, A. (Speaker)[1]; Dutta, A.[2]; Molina-Aldareguia, J.M.[2]; Monclus, M.[1]; Avella, M.[1]; Sabirov, I.[1]
[1]IMDEA Materials Institute,

B07.20: Novel approaches in materials development

2:50 PM | Lecture
How AI is being used by materials companies today - characteristics of success
Keller, S. (Speaker)[1]
[1]Citrine Informatics

3:10 PM | Lecture
Surface Structure Evolution of Nickel-Based Alloys in Harsh Marine Environment: Theoretical Calculation and Experimental Verification
Chang, K. (Speaker)[1]
[1]Ningbo Institute of Material Technology and Engineering, Chinese Academy of Sciences

3:30 PM | Lecture
Light weight potential assessment of additively manufactured metals
Merghany, M. (Speaker)[1]; Stern, F.[1]; Tenkamp, J.[1]; Teschke, M.[1]; Walther, F.[1]
[1]Technical University of Dortmund

3:50 PM | Lecture
Analysis of EAF slag using Laser Induced Breakdown Spectroscopy
Flampouri, A. (Speaker)[1]; Tzevelekou, T.[1]; Koklioti, M.[1]; Pantazis, K.[1]; Pentovolou, T.[1]; Mastorakis, A.[2]; Vardakis, G.[2]
[1]Hellenic Research Centre for Metals - ELKEME S.A., Oinofyta (Greece); [2]SIDENOR STEEL

4:10 PM | Lecture
Numerical and Experimental Investigations on Geopolymer-Based 3D-Printed Built Environment Structures
Koc, M. (Speaker)[1]; Al Rashid, A.[1]; Alim Khan, S.[2]; Imran, R.[1]
[1]Hamad Bin Khalifa University, Doha (Qatar); [2]Texas A&M

B05.08: Eutectic High Entropy Alloys

2:50 PM | Highlight Lecture
online
Hierarchical crack buffering triples ductility in eutectic herringbone high-entropy alloys
Shi, P. (Speaker)[1]; Li, Y.[2]; Liaw, P.K.[3]; Raabe, D.[4]; Wang, Y.-D.[5]; Zhong, Y.[2]
[1]Shanghai University & City University of Hong Kong; [2]Shanghai University; [3]University

3:10 PM | Lecture
Electron Beam Welding of AlCoCrFeNi2.1 High Entropy Alloy to 1.4571 Stainless Steel
Ronček, J. (Speaker)[1]; Dupák, L.[1]; Jozefovič, P.[1]; Zobač, M.[1]
[1]Institute of Scientific Instruments of the CAS, Brno (Czech Republic)

3:30 PM | Lecture
Microstructure and Mechanical Properties of the high-entropy eutectic alloy Al0.8CrFeNi2.1 combined with finite element modelling
Navaeilavasani, N. (Speaker)[1]; Gein, S.[2]; Hecht, U.[2]; Hemes, S.[2]
[1]ACCESS e.V., Aachen; [2]Access e.V, Aachen

3:50 PM | Lecture
Microstructure and tribology of nitrided heterogenious eutectic high entropy alloys
Jarząbek, D. (Speaker)[1]; Jenczyk, P.[1]
[1]Institute of Fundamental Technological Research PAS, Warsaw (Poland)

4:10 PM | Lecture
Microstructure and mechanical properties of CoNiCrx medium-entropy alloys
Wu, H. (Speaker)[1]
[1]North-western Polytechnical University, Xi'an (China)

H01.02: Circular Inorganic Materials

3:30 PM | Lecture
Cu current collector modification by Ag inkjet printing for AFLMBs
Gibertini, E. (Speaker)[1]; Mirbagheri, S.[2]; Magagnin, L.[2]
[1]Politecnico di Milano, MILANO (Italy); [2]POLITECNICO DI MILANO

3:50 PM | Lecture
Effect of solution treatment and ageing on additively manufactured biodegradable magnesium alloy WE43
Larsson, L. (Speaker)[1]; D'Elia, F.[1]; Persson, C.[1]
[1]Uppsala University

4:10 PM | Lecture
New hybrid alginate-silica aerogel developments as sustainable replacements for film-type plastic packaging
Niemeyer, P. (Speaker)[1]; Milow, B.[1]
[1]German Aerospace Center, Köln

B01.06: Coalition 2

3:10 PM | Highlight Lecture
Influence of microstructural conditions on the hydrogen storage capability and hydrogen embrittlement of ferritic-perlitic ductile cast irons
Matsuo, T. (Speaker)[1]; Hayakawa, R.[1]
[1]Fukuoka University

3:30 PM | Lecture
Rationalization of Defects Driven Plasticity based on continuous damage mechanics in high silicon strengthened ductile cast irons
Angella, G. (Speaker)[1]; Zanardi, F.[2]
[1]Italian National Research Council (CNR), Milano (Italy); [2]Zanardi Fonderia SpA, Via

3:50 PM | Lecture
Effect of thermal-expansion mismatch on thermomechanical behaviours of CGI
Cao, M. (Speaker)[1]; Baxevanakis, K.P.[1]; Silberschmidt, V.V.[1]
[1]Loughborough University

4:10 PM | Lecture
Effects of material defects on the fatigue strength of ductile Ni-resist cast iron
Endo, M. (Speaker)[1]; Matsuo, T.[1]; Singh, R.[2]
[1]Fukuoka University; [2]Concordia University, Montreal (Canada)

B02.02: Mechanical Properties of Aluminium Alloys

3:10 PM | Highlight Lecture
Surface conditioning effects on the tribological behavior of AlSi7Mg/SiCp composites for brake disk application
Ozdemir, I. (Speaker)[1]; Eiselt, P.[1]; Grund, T.[1]; Hirsch, S.J.[1]; Lampke, T.[1]; Nestler, A.[1]; Schubert, A.[1]
[1]Chemnitz University of Technology

3:30 PM | Lecture
Fracture and deformation behavior of an Al-Si-Cu-Mg-Fe alloy using In-Situ tensile testing
Kim, D. (Speaker)[1]; Kim, J.K.[2]; Park, E.S.[2]; Kim, J.[1]
[1]Korea Institute of Industrial Technology, JeonJu (South Korea); [2]Seoul National University

3:50 PM | Lecture
Tearing Behavior of AA7075-T6 Sheet at 200 °C
Nikolai, D. (Speaker)[1]; Taleff, E.[2]
[1]The University of Texas at Austin; [2]University of Texas at Austin

4:10 PM | Lecture
online
Study of the Effect of the Cooling Rate on the Microstructure and Mechanical Strength of an AA2017 Alloy
Rojas Arias, N. (Speaker)[1]; Soares Silva, A.[2]; de Albuquerque Sousa, S.M.[2]; Lisboa de Gouveia, G.[2]; Amancio Filho, S.T.[3]; Gil Coury, F.[3]; Spinelli, J.E.[2]

H01.02: Hydrogen Metallurgy II

2:50 PM | Highlight Lecture
A Multi-Scale Connection between Mass Transport & Chemistry in H2-Based Ironmaking
Dresselhaus-Marais, L. (Speaker)[1]; Moghimi, L.[1]; Paul, S.[1]; Wang, Y.[1]; Zheng, X.[2]
[1]Stanford University; [2]SLAC National Accelerator Laboratory, Menlo Park (United States)

3:10 PM | Lecture
To the circular economy and sustainable society with metallurgical strategy
Park, J. (Speaker)[1]
[1]Hanyang University, Ansan (South Korea)

3:30 PM | Lecture
The chemical, thermodynamic and kinetic roles of pores in the hydrogen-based direct reduction of single-crystalline wüstite into iron
Zhou, X. (Speaker)[1]; Bai, Y.[1]; Dehm, G.[1]; El-Zoka, A.[1]; Gault, B.[1]; Kim, S.-H.[1]; Liebscher, C.[1]; Ma, Y.[1]; Mianroodi, J.R.[1]; Raabe, D.[1]

3:50 PM | Lecture
On the feasibility of a new concept for hydrogen production via CH4 plasma pyrolysis
Daghagheleh, O. (Speaker)[1]; Schenk, J.[1]; Zheng, H.[1]; Zarl, M.[2]; Farkas, M.[2]
[1]Montanuniversität Leoben; [2]K1-MET GmbH, Linz (Austria)

4:10 PM | Lecture
Hybrid hydrogen-based reduction of iron ores
Jovičević-Klug, M. (Speaker)[1]; Souza Filho, I.R.[1]; Ma, Y.[1]; Springer, H.[1]; Raabe, D.[1]
[1]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf

C01.08: Advances in AM processing

2:50 PM | Highlight Lecture
Gaining insight into beneficial beam profiles for laser additive manufacturing
Chechik, L. (Speaker)[1]; Schmidt, M.[1]
[1]Friedrich-Alexander-Universität Erlangen-Nürnberg

3:10 PM | Lecture
The Influence of Atmosphere and Composition on Gas-Material Interaction in PBF-LB
Felber, C. (Speaker)[1]; Menning, T.[1]; Jägle, E.A.[1]
[1]Universität der Bundeswehr München, Neubiberg

3:30 PM | Lecture
Novel continuous wave laser - environmental SEM coupling. Use in research on LMD 316L post processing for strength improvement without ductility loss
Santos Macías, J.G. (Speaker)[1]; Tanguy, A.[1]; Hallais, S.[1]; Upadhyay, M.[1]
[1]Ecole Polytechnique, Palaiseau (France)

3:50 PM | Lecture
Cold Spray a different Additive Manufacturing technology - it's potentials and some applications for aerospace components
Brotsack, M. (Speaker)[1]; Bauer, C.[2]; Kondás, J.[2]; Singh, R.[1]
[1]IMPACT INNOVATIONS GMBH, Rattenkirchen; [2]Impact Innovations GmbH,

4:10 PM | Lecture
Cold Gas Spraying 3D printing of Ti bipolar plates for proton exchange membrane water electrolyzers
Garfias, A. (Speaker)[1]; Albaladejo-Fuentes, V. (Speaker)[1]; Sánchez, J.[1]; Sarret, M.[1]; Garcia Cano, I.[1]; Andreu, T.[1]
[1]University of Barcelona

C03.09: New developments I

2:50 PM | Highlight Lecture
Post-processing of ultrafine grained materials
Lewandowska, M. (Speaker)[1]; Ciemiorek-Bartkowska, M.[1]; Enzinger, N.[2]; Orlowska, M.[3]; Pixner, F.[2]
[1]Warsaw University of Technology; [2]Graz University of Technology; [3]Military University of Technology, Warsaw (Poland)

3:10 PM | Lecture
online
Ductility and formability of ultrafine-grained 5757 aluminium plates processed by multi-turn ECAP and upset forging
Ciemiorek, M. (Speaker)[1]; Lewandowska, M.[1]; Olejnik, L.[1]
[1]Warsaw University of

3:30 PM | Lecture
Effect of temperature on the hardening of a 316 stainless steel under Surface Severe Plastic Deformation
Austernaud, Y. (Speaker)[1]; Bocher, P.[2]; Grosdidier, T.[1]; Novelli, M.[1]
[1]LEM3 Laboratoire d'Etude des Microstructures et de Mécanique des Matériaux, METZ (France); [2]ETS Ecole de

3:50 PM | Lecture
On two different approaches for Equal-Channel Angular Pressing of AA5083 sheets
Illgen, C. (Speaker)[1]; Frint, P.[2]; Wagner, M.F.-X.[1]
[1]Chemnitz University of Technology; [2]Nordmetall GmbH, Chemnitz

4:10 PM | Lecture
Rapid solidification as an effective strengthening method in high-strength Zn-Li-Mn-Mg-Cu alloys processed by high-pressure torsion
Bednarczyk, W. (Speaker)[1]; Wątroba, M.[1]; Gao, N.[2]; Lewandowska, M.[1]; Langdon, T.G.[2]
[1]Warsaw University of

C07.08: Non-vacuum processes for surface modification

2:50 PM | Lecture
TiO2/rGO and TiO2/C60 nanocomposite coatings deposited via Aerosol-Assisted Atmospheric Pressure Plasma Deposition for photodegradation of water pollutants
Del Sole, R. (Speaker)[1]
[1]University of Bari Aldo Moro

3:10 PM | Lecture
Aerosol Deposition – The Room Temperature Coating Technology for Ceramics
Stock, D. (Speaker)[1]; Luck, I.-V.[2]; Schumann, M.[2]; Stöcker, T.[2]
[1]Heraeus AMLOY Technologies GmbH; [2]Heraeus Deutschland GmbH & Co. KG, Hanau

3:30 PM | Lecture
Synthesis and formulation of gold inks for inkjet printing of gas sensor electrodes
Le Porcher, B. (Speaker)[1]; Rieu, M.[1]; Viricelle, J.-P.[1]
[1]École des Mines de Saint-Étienne, Saint-Etienne (France)

3:50 PM | Lecture
CNT-incorporated Ceramic Coating on Aluminium Alloys
Huang, X.H. (Speaker)[1]; Chew, J.E.[1]; Ng, Y.[1]; Pang, J.M.[1]
[1]Institute of Materials Research and Engineering (IMRE), Agency for Science, Technology and Research (A*STAR), Singapore (Singapore)

4:10 PM | Lecture
Surface modification through self-stratification of Janus particles
Jiang, S. (Speaker)[1]
[1]Iowa State University, Ames (United States)

C02.04: Ceramics

3:10 PM | Highlight Lecture
Operando tomographic microscopy during laser-based powder bed fusion
Makowska, M.[1]; Van Petegem, S. (Speaker)[2]; Verga, F.[2]; Pfeiffer, S.[4]; Marone, F.[5]; Chang, C.[6]; Florio, K.[7]; Schlepütz, C.[1]; Wegener, K.[7]; Graule, T.[4]
[1]Paul Scherrer Institute, Villigen (Switzerland); [2]Villigen; [3]ETH

3:30 PM | Lecture
Determination of process parameters for 3D printing of an aluminum oxide feedstock using a screw-based material extrusion process
Dreier, T. (Speaker)[1]; Riaz, A.[1]; Ahrend, A.[1]; Bode, S.[1]; Milkereit, B.[1]; Seitz, H.[1]
[1]University of Rostock

3:50 PM | Lecture
Development and characterization of ceramic granulate feedstocks for an extrusion based 3D printing process
Ahrend, A. (Speaker)[1]; Riaz, A.[1]; Dreier, T.[1]; Töllner, P.[1]; Seitz, H.[1]
[1]University of Rostock

4:10 PM | Lecture
Occupational risk assessment in liquid deposition modelling material feedstock preparation and additive manufacturing of ceramic-paste based materials
Saliakas, S. (Speaker)[1]; Ntenekou, D.[2]; Tsiokou, V.[2]; Gavalas, I.[2]; Damilos, S.[1]; Karatza, A.[2]; Koumoulos,

C05.01: Welding 1

2:50 PM | Highlight Lecture
Experimental investigation of fatigue performance of tubular welded connections in offshore floating platforms for renewable energy production
Zervaki, A. (Speaker)[1]; Karamanos, S.[2]; Papatheocharis, T.[2]; Perdikaris, P.[2]

3:10 PM | Lecture
Effect of thermomechanical welding on the microstructure and mechanical properties of S700MC steel welds
Wang, P. (Speaker)[1]; Gomes, F.M.[2]; Vallant, R.[2]; Poletti, M.C.[2]; Enzinger, N.[2]
[1]Graz university of technology; [2]Graz University of Technology

3:30 PM | Lecture
online
Effects of Different Alloy Combinations on Mechanical Properties of Aluminum Alloy Resistance Spot Welded Joints
Matsukage, T. (Speaker)[1]; Tarui, T.[2]; Iyota, M.[1]
[1]Osaka Institute of Technology; [2]Nissan Motor Co., Ltd., Kanagawa (Japan)

3:50 PM | Lecture
On the Microstructural Features Affecting Cleavage Fracture in Simulated Heat Affected Zones of S690QL High Strength Steel
Bertolo, V. (Speaker)[1]; Jiang, Q.[1]; Walters, C.[1]; Sietsma, J.[1]; Popovich, V.[1]
[1]Delft University of Technology

FEMS Master Thesis Award

2:50 PM | Lecture
Presentations of the FEMS Master Thesis Award

Room HZ 1

Plenaries **B:** Structural Materials

B07.09: Microstructure and mechanical properties of materials

5:00 PM | Lecture
Influence of ageing on the microstructural evolution during thermomechanical fatigue and dwell-fatigue at elevated temperature of austenitic stainless steel
Calmunger, M. (Speaker)[1]; Chai, G.[2]; Segersäll, M.[1]; Wärner, H.[1]

5:20 PM | Lecture
Investigations of the deformation and damage behaviour of a coarse-grained anisotropic nickel-based superalloy: Experiments and Simulations
Lion, P. (Speaker)[1]
[1]RPTU Kaiserslautern-Landau

5:40 PM | Lecture
Mechanical behaviour and microstructure evolution in AA7075-T651 under dynamic loading conditions
Dalai, B. (Speaker)[1]; Esin, V.A.[2]; Åkerström, P.[1]; Moretti, M.A.[1]; Lindgren, L.-E.[1]
[1]Luleå University of Technology; [2]Mines Paris, PSL University

6:00 PM | Lecture
Modelling of scale growth under consideration of temperature, time and microstructure of steel on hot forging processes
Bergelt, T. (Speaker)[1]
[1]Chemnitz University of Technology

6:20 PM | Lecture
Study and modelling of the thermal ageing of a 316 Nb stainless steel: from mechanical and microstructural analysis to models of real conditions thermal ageing
Monnier, J. (Speaker)[1]; Buy, F.[1]; Lechartier, A.[1]; Malaplate, J.[1]; Marini, B.[1]; Michel, A.[1]; Mouton, I.[1];

Room HZ 2

B: Structural Materials

B07.21: Novel approaches in materials development

5:00 PM | Lecture
Design of Transition Metal Carbonitride Superlattice Thin Film Systems and Its Influence on Material Properties
Schmid, B. (Speaker)[1]; Koutna, N.[1]; Schöngruber, T.[1]; Wojcik, T.[1]; Bühler-Paschen, S.[1]; Kolozsvari, S.[2]; Mayrhofer, P.H.[1]
[1]TU Wien, Vienna (Austria);

5:20 PM | Lecture
online
Effect of thermal processing history on the natural aging behaviour of the 7000 series aluminum alloys
Abolhasani, A. (Speaker)[1]; Esmaeili, S.[1]; Wells, M.A.[1]; Worswick, M.J.[1]
[1]University of Waterloo

5:40 PM | Lecture
Thermodynamic analysis and modelling of novel ternary Ni-S-based bulk metallic forming system
Ma, W. (Speaker)[1]; Chegeni, M.[2]; Riegler, S.[2]; Rohde, M.[1]; Gallino, I.[2]; Busch, R.[2]; Seifert, H.J.[1]
[1]Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen; [2]University

6:00 PM | Lecture
Thermodynamic assessment of ternary Al-M-O (M= Nb, Ta) systems to enhance the development of a new generation of coarse-grained refractory composites
Gebauer, J. (Speaker)[1]; Franke, P.[1]; Seifert, H.J.[1]
[1]Karlsruhe Institute of Technology, Eggenstein-

6:20 PM | Lecture
online
Effect of graphene derivatives on the magnetic properties of NdFeB magnets
Costa Silva Filho, J. (Speaker)[1]; Carvalho da Silva, S.[2]; Fernando Queiruga Rey, J.[1]; Gallego Martinez, L.[3]; Real Janasi, S.[3]; Takiishi, H.[3]; Tsuyama Escote, M.[1]

Room HZ 3

H: Materials for Circularity and Sustainability

H03.01: Recycling of PV elements and recovery of critical raw materials

5:00 PM | Lecture
Recycling of Photovoltaic modules – ReGCell 2
D'souza, A. (Speaker)[1]
[1]SRH Berlin University Applied Science

5:20 PM | Lecture
Investigating a novel process of extracting materials from recycled photovoltaic panels to convert into feedstock for 3d printing of flexible substrate photovoltaics
D'Souza, A. (Speaker)[1]; Beck, G.[1]; Gulia, K.[2]
[1]SRH Berlin University of Applied Science; [2]University of

5:40 PM | Lecture
Isolation of Critical Raw Materials from Waste Electrical and Electronic Equipment and their Reusability in Additive Manufacturing Applications
Stratiotou Efstratiadis, V. (Speaker)[1]; Argyros, A.[1]; Efthymiopoulos, P.[2]; Maliaris, G.[2]; Michailidis, N.[1]
[1]Aristotle University of

Room HZ 4

B: Structural Materials

B05.09: Irradiation Property and Materability of High-Entropy Alloys

5:00 PM | Highlight Lecture
Elucidating damage accumulation and recovery mechanisms in reduced activation compositionally complex alloys using atom probe tomography
Hofer, C. (Speaker)[1]; Bagot, P.A.J.[1]; Moody, M.P.[1]; Goodall, R.[2]; Patel, D.[2]; Gandy, A.[2]

5:20 PM | Lecture
Effect of Friction Stir Processing on Microstructure, Mechanical and Corrosion Behaviour of a metastable, Dual-phase, High Entropy Alloy
Meena, N. (Speaker)[1]; Gunasekaran, G.[2]; Rao, A.G.[2]; Veereiah, P.[2]; Prabhu, N.[1]

5:40 PM | Lecture
online
Cyclic deformation behavior of an equiatomic CrFeNi multi-principal element alloy
Sisodia, S.[1]; Rajkowski, M.[2]; Laplanche, G.[2]; Chauhan, A. (Speaker)[1]
[1]Indian Institute of Science, Bengaluru (India); [2]Ruhr-Universität Bochum

6:00 PM | Lecture
Infrared emissivity measurements on a Cantor high entropy alloy
Gabirondo-López, J.[1]; Ballarena, M.[1]; Sainz-Menchón, M.[1]; López-Ferreño, I.[1]; Echániz, T.[1]; Straumal, B.[2]; López, G.A. (Speaker)[3]
[1]University of the Basque Country, Leioa (Spain); [2]Osipyan

Room HZ 5

B: Structural Materials

B07.05: Deformation properties

5:00 PM | Highlight Lecture
Deformation behavior of austenitic Fe-Mn-xAl-yC low density-steels at cryogenic temperatures
Gutierrez-Urrutia, I. (Speaker)[1]; Shibata, A.[1]; Tsuzaki, K.[1]
[1]National Institute for Materials Science (NIMS), Tsukuba (Japan)

5:20 PM | Lecture
Characterization of fatigue properties of nitride-aged and nitride-quenched SCM440 steel sheets
Kim, M. (Speaker)[1]; Umezawa, O.[1]
[1]Yokohama National University

5:40 PM | Lecture
Microalloying influence on precipitation behavior and mechanical properties of welded high-strength structural steels
Rhode, M. (Speaker)[1]; Kannengiesser, T.[1]; Schroeder, N.[1]
[1]Bundesanstalt für Materialforschung und -prüfung

6:00 PM | Lecture
online
Crack initiation and propagation behaviors in γ'-Fe4N layer on the nitrided steel subjected to monotonic and cyclic deformations
Koga, N. (Speaker)[1]; Saito, S.[2]; Tanahara, K.[2]; Umezawa, O.[2]
[1]Kanazawa University; [2]Yokohama National University

Room HZ 6

B: Structural Materials

B02.09: Manufacturing of Aluminium Alloys

5:00 PM | Highlight Lecture
online
Assessment of low and high cycle fatigue behaviour of the PBF-LB AlSi7Mg alloy in the as-built and heat-treated conditions: influence of defects and microstructural features
Tonelli, L. (Speaker)[1]; Liverani, E.[1]; Morri, A.[1];

5:20 PM | Lecture
Characterization at room and high temperature of Scalmalloy® lattice structures produced by PBF-LB
Lagalante, I. (Speaker)[1]; Martucci, A.[1]; Aversa, A.[1]; Lombardi, M.[1]; Manfredi, D.[1]
[1]Politecnico di Torino

5:40 PM | Lecture
Precipitation, damage and healing behaviour in a new healable Al-0.5Mg2Si alloy
Kashiwar, A. (Speaker)[1]; Arseenko, M.[1]; Simar, A.[1]; Idrissi, H.[1]
[1]Université Catholique de Louvain, Louvain-la-Neuve (Belgium)

6:00 PM | Lecture
High-Pressure-Die-Casting parameters optimization on end-of-life secondary aluminium alloy for automotive structural component
Bongiovanni, A. (Speaker)[1]; Da Silva, M. (Speaker)[2]; Castellero, A.[1]
[1]Università di Torino, Turin (Italy); [2]Fundació Eurecat,

Room HZ 7

H: Materials for Circularity and Sustainability

H10.03: Utilization of Industrial Wastes

5:00 PM | Highlight Lecture
Charcoal-based reduction of hematite for the production of magnetite from red mud
Sukur, S. (Speaker)[1]; Stević, D.[1]; Dragojlović, D.[2]; Košir, M.[2]; Švara Fabjan, E.[2]; Angelopoulos, P.[4]; Sparis, D.[4]; Gotovac Atlagić, S.[1]
[1]University of Banja Luka, Faculty of Natural Sciences and

5:20 PM | Lecture
Thermodynamics of palladium (Pd) and gold (Au) dissolution in FeO-SiO2-CaO-Al2O3-MgOsat slags for pyrometallurgical processing of industrial wastes
Kim, H. (Speaker)[1]; Kim, R.[1]; Park, H.[2]; PARK, J.[1]
[1]Hanyang University, Ansan (South Korea); [2]Korea Institute

5:40 PM | Lecture
online
Processing of by-products from the Midrex direct reduction process into secondary raw materials
Lohmeier, L. (Speaker)[1]; Höntsch, S.[1]; Herdegen, V.[1]; Braeuer, A.S.[1]; Thaler, C.[2]; Harris, C.[2]
[1]TU Bergakademie Freiberg (TUBAF); [2]voestalpine Stahl

6:00 PM | Lecture
Alternative Perspective to Valorize the Municipal Waste Incinerator Bottom Ash for Metals and Cement Industries
Adhiwiguna, I. (Speaker)[1]; Deike, R.[1]; Warnecke, R.[2]
[1]Universität Duisburg Essen; [2]GKS-Gemeinschaftskraftwerk Schweinfurt GmbH

6:20 PM | Lecture
Process concept for the integration of Shredder residue in the recycling of Waste Electrical and Electronic Equipment
Diaz, F. (Speaker)[1]; Friedrich, B.[1]; Latacz, D.[1]
[1]RWTH Aachen University

Room HZ 8

C: Processing

C01.09: PBF-LB of Ti-alloys

5:00 PM | Highlight Lecture
Effect of the incident laser beam profile during laser powder bed fusion on the microstructure and material properties of Ti-5553
Kunz, C. (Speaker)[1]; Kaban, V.[1]; Worpenberg, S.[2]; Bergmann, B.[2]; Kühn, U.[1]; Denkena, B.[2]; Hufenbach, J.K.[1]

5:20 PM | Lecture
online
Laser powder bed fusion of Ti-22Al-25Nb at low and high pre-heating temperatures
Gussone, J. (Speaker)[1]; Haubrich, J.[1]; Requena, G.[1]; Rackel, M.[2]; Tumminello, S.[1]; Barriobero-Vila, P.[3]; Kreps, F.[1]; Kelm, K.[1]; Stark, A.[2]; Schell, N.[2]; Pyczak, F.[2]
[1]German Aerospace Center

5:40 PM | Lecture
online
Insights into texture evolution in additively manufactured β-Ti alloys via large volume 3D EBSD technique
Zaefferer, S. (Speaker)[1]; Tekumalla, S.[1]; Tsai, S.-P.[2]
[1]Max Planck Institute for Iron Research, Dusseldorf; [2]National Taiwan University, Taipei (Taiwan)

6:00 PM | Lecture
Optimization of processing parameters for biocompatible Ti-Zr-Nb-Si alloy produced by selective laser melting
Li, M. (Speaker)[1]; Mozaffari-Jovein, H.[1]; Leyens, C.[2]
[1]Furtwangen University, Tuttlingen; [2]Technische Universität Dresden

6:20 PM | Lecture
Rendering high-temperature parent microstructures of additively manufactured Ti-6Al-4V
Yang, L. (Speaker)[1]; Mirihanage, W.[1]; Ramachandran, S.[2]; Bagasol, A.[3]; Browne, D.[3]; Dowling, D.[3]; Guan, Q.[1]; Wang, W.[1]

6:40 PM | Lecture
Feature Characterisation of additively manufactured Implants made of Ti6Al4V using Hybrid Machine Learning Models, Measuring Data, and Process Parameters
AL-Zaidawi, S. (Speaker)[1]; Bosse, S.[2]; Tönjes, A.[3]
[1]University of Bremen;

Room HZ 9

C: Processing

C03.01: Sintering

5:00 PM | Keynote Lecture
Influence of the relative ratio of zircon/zirconia mixtures in the microstructure of suspension plasma sprayed coating
Rosado, E.[1]; Cañas, E.[2]; Recio, P.[1]; Sánchez, E.[2]; Moreno, R. (Speaker)[3]
[1]Instituto de Cerámica y Vidrio, Madrid (Spain); [2]Instituto Universitario de Tecnología Cerámica, Castellón de la Plana (Spain); [3]Instituto de Cerámica y Vidrio - CSIC, Madrid (Spain)

5:40 PM | Lecture
3DPrinting of several technologies in one: A new approach to shape ceramics including silicon carbide
Tiwari, S. (Speaker)[1]; Malsallez, K.[2]
[1]3DCeram Sinto Tiwari, Berlin; [2]3DCeram Sinto, Bonnac La Cote (France)

6:00 PM | Lecture
FAST/SPS: NEW industrial post-process for full densification of 3D complex shape from additive manufacturing
Mackie, J. (Speaker)[1]; Beynet, Y.[1]; Epherre, R.[1]; Fregeac, A.[1]
[1]Norimat, Labège (France)

6:20 PM | Lecture
A hybrid manufacturing methodology for TiAl-Ni composites using additive manufacturing and spark plasma sintering
Davidson, K. (Speaker)[1]; Ji, F.[1]; Bartolo, P.[1]; Ramanujan, R.[1]
[1]Nanyang Technological University, Singapore (Singapore)

6:40 PM | Lecture
In situ processing of Fe-based bulk metallic glass nanocomposites in super cooled liquid region via spark plasma sintering
Prasad, D.K.V.D. (Speaker)[1]; Laha, T.[1]
[1]Indian Institute of Technology Kharagpur

Room HZ 10

C: Processing

C03.08: New developments II + Modeling

5:00 PM | Highlight Lecture
Recent developments in surface severe plastic deformation for improved gradient structures: processing parameters and surface reactivity
Grosdidier, T. (Speaker)[1]
[1]Université de Lorraine, METZ (France)

5:20 PM | Lecture
Thermomechanical processing of Al Alloys by Friction Extrusion
Suhuddin, U. (Speaker)[1]; Rath, L.[1]; Klusemann, B.[1]; Klusemann, B.[2]
[1]Helmholtz Zentrum Hereon, Geesthacht; [2]Leuphana University Lueneburg

5:40 PM | Lecture
Analysis of flow line evolution by visio-plastic analysis of an AA6060 aluminum alloy after multiple passes of ECAP
Berndt, N. (Speaker)[1]; Wagner, M.F.-X.[1]
[1]Chemnitz University of Technology

6:00 PM | Lecture
Thermal stability of new hybrid Cu GO-Al2O3 metal matrix nanocomposites produced via High-Pressure Torsion
Emerla, M. (Speaker)[1]; Bazarnik, P.[1]; Huang, Y.[2]; Huang, Y.[3]; Langdon, T.G.[3]; Lewandowska, M.[1]
[1]Warsaw University of Technology; [2]Bournemouth

6:20 PM | Lecture
Cracking induced by elastic anisotropy in hexagonal titanium
Sudhalkar, B. (Speaker)[1]; Patra, A.[1]; Samajdar, I.[1]
[1]Indian Institute of Technology Bombay, Mumbai (India)

Room HZ 11

C: Processing

C11.01: Multi-Material Additive Manufacturing I

5:00 PM | Highlight Lecture
Additive manufacturing of heterostructured materials: From 1D to 3D
Tan, C. (Speaker)[1]
[1]Singapore Institute of Manufacturing Technology (SIMTech), ASTAR

5:20 PM | Lecture
Characterization of 316L ss / 316L ss – 10% Ti6Al4V multilayer material manufactured by Laser Powder Bed Fusion
Bedmar, J. (Speaker)[1]; Lalwani, A.R.[2]; Roldán, M.[2]; Nadimpalli, V.K.[2]; Torres, B.[1]; Pedersen, D.B.[2]; Rams, J.[1]
[1]Rey Juan Carlos University,

5:40 PM | Lecture
Additive manufacturing of metal matrix composite of iron and Martian regolith simultant
Kvaratskheliya, A. (Speaker)[1]
[1]Universität Bremen

6:00 PM | Lecture
Processing of eutectic Al2O3-ZrO2-mixtures for multi-material and hybrid additive manufacturing using powder bed fusion of metals using laserbeam
Singer, C. (Speaker)[1]
[1]Fraunhofer Research Institution for Casting, Composite and Processing Technology IGCV,

Room HZ 12

C: Processing

C05.02: Welding 2

5:00 PM | Highlight Lecture
Novel designed Fe-based filler wire for laser deposition welding
Paul, B. (Speaker)[1]; Freudenberger, J.[1]; Freudenberger, J.[2]; Kimme, J.[3]; Fröhlich, A.[3]; Hufenbach, J.[1]; Hufenbach, J.[2]
[1]Leibniz Institute for Solid State and Materials Research

5:20 PM | Lecture
Design Method for Immiscible Dissimilar Welding (Mg/Fe) Based on CALPHAD
Zang, C. (Speaker)[1]; Rivera-Diaz-del-Castillo, P.[2]
[1]University of Southampton; [2]University of Southampton

5:40 PM | Lecture
A review on the use of reactive multilayer thin films to enhance the diffusion bonding process of similar and dissimilar materials
Ramos, A.S. (Speaker)[1]; Cavaleiro, A.J.[2]; Cruz, F.R.[1]; Silva, Jr., M.[1]; Simoes, S.[4]; Viana, F.[4]; Vieira, M.F.[4]; Vieira, M.T.[1]
[1]University of Coimbra; [2]Frezite,

6:00 PM | Lecture
Microstructural modification in metals by power ultrasonics
Liesegang, M. (Speaker)[1]; Beck, T.[1]
[1]RPTU Kaiserslautern-Landau

6:20 PM | Lecture
online
Effects of Heating Condition on Joint Properties of Steel/Fluororesin Dissimilar Materials using One-Sided Seam Welding
Iyota, M. (Speaker)[1]; Mimura, K.[1]; Kawafuchi, T.[2]; Washika, K.[2]
[1]Osaka Institute of Technology;

6:40 PM | Lecture
online
Joining of ultrafine-grained commercially pure aluminium and Al-Mg-Si alloy
Lipińska, M. (Speaker)[1]; Enzinger, N.[2]; Huetter, A.[2]; Lewandowska, M.[2]; Pixner, F.[2]; Szachogłuchowicz, I.[1]
[1]Military University of Technology, Warsaw (Poland); [2]Graz University of Technology;

Room HZ 14

G: Education, Strategy, and Technology Transfer

FEMS Master Thesis Award

G01.06: Materials Science Education II

5:00 PM | Lecture
Making General Physics courses more attractive; interactive handouts
López, G.A. (Speaker)[1]; Garcia de Gurtubay Galligo, I.[2]; Sáenz Aguirre, J.[2]
[1]University of the Basque Country UPV/EHU, Leioa, Bizkaia (Spain); [2]University of the Basque Country, Leioa (Spain)

5:20 PM | Lecture
Teaching Materials Science to High School Students Using Weeklong Camps
Drake, D.[1]; Hogue, F.[2]; Connelly, M.[3]; Mueller, E.M. (Speaker)[4]; O'Brien, M.K.[3]
[1]EOS North America, Pflugerville, TX (United States); [2]HogueMet, Los Angeles, CA (United States); [3]Daley Community College, Chicago, IL

5:40 PM | Lecture
A problem-based teaching strategy for materials science students using the agile project management method SCRUM
Apelt, S. (Speaker)[1]; Bergmann, U.[2]; Kruppke, B.[2]; Wiesmann, H.-P.[2]
[1]TU Dresden; [2]Technische Universität Dresden

6:00 PM | Lecture
Which complementary skills do materials engineers need in the future?
Soldera, F. (Speaker)[1]; Heß, C.[1]; Mücklich, F.[1]; Pauly, C.[1]
[1]Saarland University, Saarbrücken

6:20 PM | Lecture
online
European Space Agency Technology Transfer and Patent Management Office for transfer of materials' innovations
Holynska, M. (Speaker)[1]; Bouvet, T.[2]; Hernandez Alfageme, N.[3]; Sanchez Alvarez, M.[4]; Speidel, S.[2]; de Clercq, A.[1]

4:30 PM **I Coffee Break**
Hörsaalzentrum Foyer

Room SH 0.101

D: Characterization and Modeling

D04.07 Cost MecaNano - Mechanics of Matter at the Nano-Scale - Size Effects, Experiments and Simulation

10:30 AM | Lecture

MecaNano – European Network for the Mechanics of Matter at the Nano-Scale

Merle, B. (Speaker)[1]

[1]University of Kassel

10:50 AM | Lecture

Mechanical Flow Curves by Nanoindentation – How the Microstructure Influences the Deformation

Maier-Kiener, V. (Speaker)[1]; Schaffar, G.[1]

[1]Montanuniversität Leoben

11:10 AM | Lecture

Combinatorial and high-throughput discovery of ultrastrong alloys in the nanocrystalline CoCr system

Wieczerzak, K. (Speaker)[1]; Edwards, T.[1]; Jain, M.[1]; Michler, J.[1]; Petho, L.[1]

[1]Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun (Switzerland)

11:30 AM | Lecture

Liquid encapsulation in metal microvessels: Fabrication and characterization

Kang, S.-G.[1]; Bellón, B.[1]; Bhaskar, L.K.[1]; Aota, L.S.[1]; Kim, S.-H.[1]; Götz, A.[2]; Spiecker, E.[2]; Dehm, G.[1]; Ramachandramoorthy, R. (Speaker)[1]

[1]Max-Planck-Institut für Eisenforschung, Düsseldorf;

11:50 AM | Highlight Lecture

online

Electron beam induced giant ductility in amorphous Alumina (a-Al2O3) and a-Al2O3/Al nanolaminates

Andrey, O.[1]; Thomas, P.[1]; Idrissi, H. (Speaker)[1]; Michael, C.[1]; Jean-Pierre, R.[1]; Dominique (Nick), S.[2]

[1]Université catholique de Louvain, Louvain-la-Neuve (Belgium);

Room SH 0.105

D: Characterization and Modeling

D05.04: Catalysis and energy storage

11:10 AM | Keynote Lecture

Harvesting a Sustainable Future with Electrochemical Catalysis and Energy Storage

Jiang, Z.[1]; Banerjee, S.[2]; Rappe, A. (Speaker)[2]

[1]University of Wisconsin, Madison (United States); [2]University of Pennsylvania, Philadelphia (United States)

11:50 AM | Lecture

From heat storage to Li-ion batteries using Calphad modelling

Keuter, P. (Speaker)[1]; Aras, C.[1]; Reis, B.H.[1]; to Baben, M.[1]

[1]GTT-Technologies, Herzogenrath

Room SH 0.106

D: Characterization and Modeling

D07.04: Surfaces and Interfaces

10:30 AM | Lecture

Multiscale Modelling of Interface Energy Anisotropy in Superalloys

Ghosh, S. (Speaker)[1]; Mukherjee, R.[2]; Brandl, C.[3]

[1]The University of Melbourne, Indian Institute of Technology, kanpur; [2]Indian Institute of Technology, kanpur, Kanpur (India); [3]The University of Melbourne

10:50 AM | Lecture

Grain boundary segregation of B in TiN

Reichmann, A. (Speaker)[1]; Kainz, C.[1]; Dösinger, C.[1]; Schalk, N.[1]; Romaner, L.[1]

[1]Montanuniversität Leoben

11:10 AM | Lecture

Atomistic modeling of WC(solid)-Co(liquid) interface using classical molecular dynamics

Nourazar, M. (Speaker)[1]; Korzhavyi, P.[1]

[1]KTH Royal Institute of Technology, Stockholm (Sweden)

11:30 AM | Highlight Lecture

Minimum Energy Atomic Deposition: A novel, efficient atomistic simulation method for thin film growth

Hoefnagels, J. (Speaker)[1]; Clavier, G.[1]; Geers, M.[1]; Karewar, S.[1]; van de Sluis, O.[1]

[1]Eindhoven University of Technology

11:50 AM | Lecture

Surface Atom Mobility as a parameter for Advanced Probabilistic Modeling of Field Evaporation in Atom Probe Tomography

Shaikh, A. (Speaker)[1]

[1]Aalto University, Espoo (Finland)

Room SH 0.107

D: Characterization and Modeling

D10.04: Crystal Plasticity and Dislocation study

10:30 AM | Highlight Lecture

Studying Chemo-Mechanical Interactions at the Grain Scale

Diehl, M. (Speaker)[1]; Roongta, S.[2]; Roters, F.[2]; Shanthraj, P.[3]

[1]KU Leuven; [2]Max-Planck-Institut für Eisenforschung, Düsseldorf; [3]University of Manchester

10:50 AM | Lecture

Ab-initio informed Crystal Plasticity model for Zinc

Fioravanti, D. (Speaker)[1]; Hoefnagels, J.[2]; Maresca, F.[1]; van der Giessen, E.[1]

[1]University of Groningen; [2]Eindhoven University of Technology

11:10 AM | Lecture

Modeling the statistical distribution of fatigue crack formation lifetime in large volumes of polycrystalline microstructures

Gu, T. (Speaker)[1]

[1]Institute of Polytechnic Science and Aeronautics (IPSA), Paris (France)

11:30 AM | Lecture

Modelling of phase transformation coupled to viscoplasticity by the phase field method

Jbara, W. (Speaker)[1]; Ammar, K.[1]; Forest, S.[1]; Maurel, V.[1]

[1]MINES Paris, PSL University

11:50 AM | Lecture

Macroscopic characteristics of plastic deformation in bcc refractory metals described through dislocation mobility properties

Starikov, S. (Speaker)[1]; Drautz, R.[1]; Mrovec, M.[1]

[1]Ruhr University Bochum

Room SH 0.109

D: Characterization and Modeling

D08.04: Workflows

10:30 AM | Lecture

Computationally accelerated experimental materials characterization using pyiron

Stricker, M. (Speaker)[1]; Banko, L.[1]; Sarazin, N.[1]; Siemer, N.[2]; Neugebauer, J.[2]; Ludwig, A.[1]

[1]Ruhr-Universität Bochum; [2]Max Planck-Institut für Eisenforschung, Düsseldorf; [3]Max Planck Institut

10:50 AM | Lecture

Integration of multi-scale workflows into the pyiron IDE

Hickel, T. (Speaker)[1]; Janssen, J.[2]; Menon, S.[2]; Neugebauer, J.[2]; Waseda, O.[2]

[1]BAM Federal Institute for Materials Research and Testing, Berlin; [2]Max-Planck-Institut für Eisenforschung, Düsseldorf

11:10 AM | Lecture

Towards the digitalization of Theory and Experiments via Scientific Workflows within the SimStack Framework

Caldeira Rêgo, C.R. (Speaker)[1]; Kryeziu, J.[2]; Schaarschmidt, J.[2]; Straumal, A.[2]; Wenzel, W.[2]

[1]Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen;

11:30 AM | Lecture

Geometrical shape learning as basis for compact microstructure representations and microstructure-properties linkages

Iza Teran, R. (Speaker)[1]; Steffes-lai, D.[1]; Morand, L.[2]

[1]Fraunhofer Institute for Scientific Computing, Sankt Augustin; [2]Fraunhofer Institute for Mechanics of Materials, Freiburg

11:50 AM | Lecture

High-throughput micromechanical simulations framework and its applications to predict microstructure-property relationships using a machine learning approach

Vajragupta, N. (Speaker)[1]; Laukkanen, A.[1]; Biswas, A.[1]; Zraibi, J.[2]; Walia, H.[2]; Kamal, M.[2]; Pinomaa, T.[1]; Lindroos,

12:10 PM **I Lunch Break**
Lunch Area

12:10 PM
Poster Session
Area D
Hörsaalzentrum
Lecture Hall Center
Foyer 3rd Floor

Room SH 1.101

D: Characterization and Modeling

A: Functional Materials

D01.04: Spectroscopy with electron or ion beams

10:30 AM | Keynote Lecture

Electron Energy Loss Spectroscopy Mapping of Topology-Optimized Photonic Cavities With Extreme Dielectric Confinement

Seifner, M. (Speaker)[1]; Babar, A.[1]; Vosoughi Lahijani, B.[1]; Christiansen, R.[1]; Semenova, E.[1]; Kristensen, P.[1]; Stobbe, S.[1]; Kadkhodazadeh, S.[1]

[1]Technical University of Denmark, Kgs. Lyngby (Denmark)

11:10 AM | Lecture

Soft X-ray analysis for high resolution spectroscopy at low voltages – biomedical application

Matveev, S. (Speaker)[1]

[1]JEOL (Germany) GmbH, Freising

11:30 AM | Lecture

Large volume high resolution 3D characterization of beam sensitive materials using multi-ion source PFIB technique under cryogenic conditions

Wu, M. (Speaker)[1]; Li, L.[1]

[1]Thermo Fisher Scientific, Eindhoven (Netherlands)

11:50 AM | Lecture

Faster and more sensitive: Co-injected fluorine gas boosts Focused Ion Beam Time-Of-Flight Secondary Ion Mass Spectrometry (FIB-TOF-SIMS) performance

Wieczerzak, K. (Speaker)[1]; Michler, J.[1]

[1]Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun (Switzerland)

Room SH 1.104

A: Functional Materials

A05.01: Functional Catalytic and Nanoporous Materials-1

10:30 AM | Keynote Lecture

Developing efficient nanoporous (photo)electrocatalysts for the production of solar fuels and chemicals

Giménez, S. (Speaker)[1]; Fernández Climent, R.[1]; Gutierrez Blanco, A.[1]; Mesa, C.[1]; Montañés, L.[1]; Ng Leon, E.[1]; Robles, C.[1]; Vasquez Romero, R.[1]

[1]Universitat Jaume I, Castellón (Spain)

11:10 AM | Highlight Lecture

Computational and experimental photonic structures light management optimization of BiVO4/OPV tandem PEC/PV structures adapted for H2 and CO2R solar fuels

Ros, C. (Speaker)[1]; Ferreira, C.[1]; Bernal, F.[1]; Zhang, M.[1]; Martorell. J.[1]

11:30 AM | Lecture

Development and tuning of photoelectrodes and photocatalysts for solar fuels

Eslava, S. (Speaker)[1]; Cui, J.[1]; Daboczi, M.[1]; Kumar, S.[1]; Sena, M.[1]

[1]Imperial College London

11:50 AM | Lecture

Porous Phosphorus-Doped Boron Nitride Materials for Photocatalytic CO2 Reduction

Itskou, I. (Speaker)[1]; Held, G.[2]; Heutz, S.[1]; Petit, C.[1]; Azzan, H.[1]; Kafizas, A.[1]; Gonzalez Carrero, S.[1]; Nevjestic, I.[1]; Kerherve, G.[1]; Grinter, D.C.[2]; Kumar, S.[2]; Ferrer, P.[2]

Room SH 1.105

A: Functional Materials

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A06.01: Transparent Conducting Materials

10:50 AM | Keynote Lecture

Metal based transparent conductive materials for energy applications: an overview

Bellet, D. (Speaker)[1]; Bardet, L.[1]; Bellet, D.[2]; Jimenez, C.[1]; Munoz-Rojas, D.[1]; Nguyen, V.H.[3]; Sekkat, A.[1]

[1]Grenoble INP, POISAT (France); [2]Grenoble Institute of Technology, POISAT (France); [3]Phenikaa University, Hanoi (Vietnam)

11:30 AM | Lecture

Multifunctional coating toward smart glass

Huang, X.H. (Speaker)[1]

[1]Institute of Materials Research and Engineering (IMRE), Agency for Science, Technology and Research (A*STAR), Singapore (Singapore)

11:50 AM | Highlight Lecture

online

Using first principles computations to understand and search for new transparent conducting materials

Hautier, G. (Speaker)[1]

[1]Dartmouth College, Hanover (United States)

Room SH 1.106

A: Functional Materials

A03.01: Applications of advanced electron microscopy methods

10:30 AM | Keynote Lecture

Revealing defect evolution on charge cycling in Li- and Mn-rich cathode materials using combined ADF and ptychography in STEM

Nellist, P. (Speaker)[1]

[1]University of Oxford

11:10 AM | Lecture

Detecting charge transfer in defective 2D WS2 with electron ptychography

Pennycook, T. (Speaker)[1]; Hofer, C.[1]; Madsen, J.[2]; Susi, T.[2]

[1]University of Antwerp; [2]University of Vienna

11:30 AM | Lecture

Optimizing low dose structural imaging for materials science with fast focused probe ptychography and contrast reversal correction

Gao, C. (Speaker)[1]; Hofer, C.[1]; Pennycook, T.[1]

[1]University of Antwerp

11:50 AM | Lecture

Probing the Limits of Multi-slice Electron Ptychography for Beam Sensitive Materials

Chennit, T.[1]; Hofer, C.[2]; Pennycook, T.[2]

[1]EMAT, University of Antwerp; [2]University of Antwerp

Room SH 1.107

A: Functional Materials

A02.01: Electrical Transport in Nanostructures

10:30 AM | Lecture

Top-down (Si)Ge nanowires with arbitrary alloy composition based on ultra-low temperature epitaxy on Si(001)

Prado Navarrete, E. (Speaker)[1]; Aberl, J.[1]; Salomon, A.[1]; Brehm, M.[1]

[1]Johannes Kepler University Linz, Austria

10:50 AM | Lecture

FEBID and FIBID Processes based on CoSix Single Source Precursors and Effects of Post-Depsosition Treatment

Jungwirth, F.[1]; Jochmann, N. (Speaker)[1]; Knez, D.[2]; Porrati, F.[1]; Huth, M.[1]; Plank, H.[2]; Barth, S. (Speaker)[1]

[1]Goethe University Frankfurt, Frankfurt am Main; [2]Graz

11:10 AM | Lecture

Site-selective chemical vapor deposition on direct-write 3D nanoarchitectures

Porrati, F. (Speaker)[1]

[1]Goethe University Frankfurt, Frankfurt am Main

11:30 AM | Lecture

~50% Higher Superconducting Critical Temperature Iron-Superconductors produced by using Ar Ion Implantation, and Potential Applications

De, U. (Speaker)[1]; Sahu, K.R.[2]; Wolf, T.[3]

[1]Egra S. S. B. College, Egra 721429 (India); [2]Bhatter College, Datan 721426 (India); [3]Karlsruhe Institute

11:50 AM | Lecture

Catalyst-free MBE growth of topological crystalline insulator Pb1-xSnxTe nanowires and the modelling of the nanowire morphology

Mientjes, M. (Speaker)[1]

[1]University of Technology Eindhoven

Room SH 1.108

A: Functional Materials

A07.02: Cellulose nanomaterials: From fundamentals to applications II

10:50 AM | Keynote Lecture

online

Twisted cellulose-based structures for functional materials

Godinho, M.H. (Speaker)[1]

[1]New University of Lisbon, Almada (Portugal)

11:30 AM | Lecture

Formation of Nanofibers by Electrospinning

Wang, C. (Speaker)[1]

[1]National Cheng Kung University, Tainan (Taiwan)

11:50 AM | Lecture

Production of continuous carbon fibers from cellulose-lignin composite filaments produced by drying jet wet spinning

Cho, M. (Speaker)[1]; Hummel, M.[1]; Nygren, N.[1]; Schlapp-Hackl, I.[1]; Sederholm, H.[1]; Trogen, M.[1]

[1]Aalto University, Espoo (Finland)

12:10 PM
Poster Session
Area H
Hörsaalzentrum
Lecture Hall Center
Foyer 3rd Floor

12:10 PM **I Lunch Break**
Lunch Area

Room SH 0.101

D: Characterization and Modeling

D04.08: Pillar Compression

2:10 PM | Highlight Lecture
In situ compression of cerium oxide nanocubes in Transmission Electron Microscopy
Zhang, R.[1]; Joly-Pottuz, L.[1]; Laurens, G.[2]; Albaret, T.[2]; Dunstan, D.[3]; Chaput, F.[4]; Masenelli-Varlot, K. (Speaker)[1]
[1]Univ Lyon, INSA Lyon, Villeurbanne (France); [2]Univ Lyon, Université Claude Bernard Lyon 1,

2:30 PM | Lecture
Plasticity in zirconia-based ceramics: a study by in situ SEM compression and simulations
Demetrio de Magalhães, M. (Speaker)[1]; Huynh, G. (Speaker)[2]; Albaret, T.[2]; Amodeo, J.[3]; Chevalier, J.[1]; Comby-Dassonneville, S.[3]; Cornélius, T.W.[3]; Douillard, T.[1]; Meille, S.[1]; Ogata, S.[4];

2:50 PM | Lecture
In depth analysis of Zinc Nano tensile tests using DIC and EBSD
König, D. (Speaker)[1]; Vermeij, T.[1]; Maresca, F.[2]; Hoefnagels, J.[1]
[1]Eindhoven University of Technology; [2]University of Groningen

3:10 PM | Lecture
Dynamic Testing of Iron-Aluminium Alloy Microparticles Fabricated using a Solid-State Dewetting
Sonawane, D. (Speaker)[1]; Bhaskar, L.K.[1]; Bellon, B.[1]; Chatain, D.[2]; Palm, M.[1]; Best, J.[1]; Dehm, G.[1]; Ramachandramoorthy, R.[1]
[1]Max-Planck-Institut für Eisenforschung GmbH,

3:30 PM | Lecture
Determining critical resolved shear stresses in single-crystalline and fine-grained Zn micropillars
Watroba, M. (Speaker)[1]
[1]Swiss Federal Laboratories for Materials Science and Technology (EMPA), Thun (Switzerland)

3:50 PM | Lecture
In situ 3D study of synthetic rock salt under triaxial loading conditions
Du, N. (Speaker)[1]; Bornert, M.[2]; Dimanov, A.[1]; Aimedieu, P.[2]; de Greef, V.[1]
[1]Laboratoire de Mécanique des Solides, Palaiseau (France); [2]Laboratoire Navier, Marne-la-Vallée (France)

4:10 PM | Lecture
Microcast metals: processing and tensile behaviour
Mortensen, A. (Speaker)[1]; Borasi, L.[1]
[1]Laboratory of Mechanical Metallurgy-École Polytechnique Fédérale de Lausanne (EPFL)

Room SH 0.105

D: Characterization and Modeling

D05.05: Battery materials - modelling and characterisation

2:10 PM | Highlight Lecture
Application of a novel operando light-scattering technique for the study of Li-ion dynamics and the characterisation of electrode materials
Merryweather, A.[1]; Schnedermann, C.[1]; Langley, C. (Speaker)[2]
[1]Cambridge University; [2]Illumion, Cambridge (United Kingdom)

2:30 PM | Lecture
Complementary investigation of lithium-ion batteries on the particle scale via single-particle measurements and simulations
Wiedemann, J. (Speaker)[1]; Agrawal, A.[1]; Hein, S.[1]; Kopljar, D.[1]; Danner, T.[1]; Latz, A.[1]
[1]German Aerospace Center (DLR), Stuttgart

2:50 PM | Lecture
On the nanoscale electrochemical conversion in Li-S batteries using operando scattering, stochastic modeling, and cryo TEM
Prehal, C. (Speaker)[1]; von Mentlen, J.-M.[1]; Freunberger, S.[2]; Wood, V.[1]
[1]ETH Zürich; [2]Institute of Science and Technology Austria (ISTA), Klosterneuburg (Austria)

3:10 PM | Lecture
Understanding the role of the solid-electrolyte interphase in Li and Na batteries by operando transmission electron microscopy
Gong, C.[1]; Bruce, P.[1]; Robertson, A. (Speaker)[2]; Pu, S.[1]; Gao, X.[1]; Yuan, Y.[1]; Li, Z.[1]; Liu, B.[1]; Zhang, S.[1]; Yang, S.[1]; Pasta, M.[1]
[1]University of Oxford; [2]University

3:30 PM | Lecture online
Molecular volcano plots: thermodynamically sound but kinetically insufficient
Zaar, F. (Speaker)[1]; Araujo, C.M.[1]; Emanuelsson, R.[1]; Olsson, S.[1]; Strømme, M.[1]; Sjödin, M.[1]
[1]Uppsala University

3:50 PM | Lecture online
A theoretical investigation of the void-mediated crack propagation and dendrite growth in all-solid-state batteries
Wang, W. (Speaker)[1]
[1]The Hong Kong Polytechnic University, HongKong (Hong Kong SAR of China)

4:10 PM | Lecture
Unsupervised anomaly detection approach for non-destructive quality control in cylindric Li-ion battery cells
Rathod, K. (Speaker)[1]; Jansche, A.[1]; Kopp, A.[1]; Bernthaler, T.[1]; Schneider, G.[1]
[1]Aalen University of Applied Science - Technology and Economics

Room SH 0.106

D: Characterization and Modeling

D07.05: Microstructure

2:10 PM | Keynote Lecture
Hydrogen induced strengthening of iron: insights from atomistics
Shah, V.[1]; Csányi, G.[2]; van der Giessen, E.[1]; Maresca, F. (Speaker)[1]
[1]University Of Groningen; [2]University of Cambridge

2:50 PM | Lecture
Computational tools for the ab-initio design of advanced structural alloys
Raju Natarajan, A. (Speaker)[1]
[1]École Polytechnique Fédérale de Lausanne

3:10 PM | Lecture
Investigating the Mechanisms of Dust-Wall Interactions in Nuclear Fusion Devices: Insights from Molecular Dynamics Simulations
Dwivedi, P. (Speaker)[1]; Fraile, A.[2]; Polcar, T.[1]
[1]Czech Technical University in Prague; [2]Bangor University, Gwynedd, LL57 2DG (United Kingdom)

3:30 PM | Lecture online
Modeling the precipitation strengthening in copper added austenitic stainless steel
Biswal, S. (Speaker)[1]; Barik, R.[1]; Chakrabarti, D.[1]; Dutta, A.[1]
[1]Indian Institute of Technology Kharagpur

3:50 PM | Lecture
Thermo-Mechanical study of TiCxN(1-x) by molecular dynamics simulations
Barrera, A. (Speaker)[1]; García, G.[1]; Arias, I.[1]; Espinoza, C.[1]; Ramos-Moore, E.[1]
[1]Pontifical Catholic University of Chile, Santiago (Chile)

4:10 PM | Lecture
Precipitation of Cr-rich clusters in Fe-Cr alloys correlated with C and N solutes: first principle-based Monte Carlo simulations
Fedorov, M. (Speaker)[1]; Wróbel, J.[1]; London, A.[2]; Kurzydłowski, K.[3]; Fu, C.-C.[4]; Tadić, T.[5]; Dudarev, S.[2]; Duc Nguyen-Manh, D.[2]
[1]Warsaw University of Technology;

Room SH 0.107

D: Characterization and Modeling

D10.05: Multiphase-field and Microstructure modeling

2:30 PM | Highlight Lecture
Chemo-mechanical multiphase-field modeling: Application to microstructural processes during intercalation in cathode materials
Daubner, S.[1]; Schneider, D. (Speaker)[2]; Weichel, M.[1]; Nestler, B.[2]
[1]Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen;

2:50 PM | Lecture
Multi-phase-field modeling of liquid-phase sintering for prediction of microstructural evolution in Nd-Fe-B sintered magnets
Ishii, A. (Speaker)[1]; Koyama, T.[2]; Abe, T.[1]; Ode, M.[1]
[1]National Institute for Materials Science, Tsukuba (Japan); [2]Nagoya University

3:10 PM | Lecture
Prediction of recrystallization texture using a combined multi-phase-field/crystal plasticity approach
Sugathan, S. (Speaker)[1]; Ali, T.[1]; Yoon, B.-H.[2]; Chang, K.[2]; Cha, P.-R.[1]
[1]Kookmin University, Seoul (South Korea); [2]Kyung Hee University, Yongin-City (South Korea)

3:30 PM | Lecture
Thermal conductivity evaluation for physically-based polycrystalline nanostructures using phase-field and phonon transport simulations
Miyoshi, E. (Speaker)[1]; Hori, T.[2]; Yasuda, N.[2]
[1]Osaka Metropolitan University, Koganei (Japan); [2]Tokyo University of Agriculture and Technology, Koganei (Japan)

3:50 PM | Lecture
Simplified growth model for precipitation and growth of carbides under PARA and NPLE Conditions
Chen, Q.[1]; Ågren, J.[1]; Grundy, N.[2]; Wu, K.[3]; Jepson, J.[2]; Schneider, A. (Speaker)[2]
[1]Thermo-Calc Software AB and KTH, Stockholm (Sweden); [2]Thermo-Calc Software AB, Stockholm (Sweden); [3]Thermo-

4:10 PM | Lecture
Microstructure and texture evolution during the manufacturing of non-oriented electrical steel
Sistaninia, M. (Speaker)[1]; Angerer, P.[1]; Antretter, T.[2]; Kreuzer, H.[3]; Prevedel, P.[1]; Raninger, P.[1]
[1]Materials Center Leoben Forschung GmbH; [2]Montanuniversitaet Leoben, Chair

Room SH 0.109

D: Characterization and Modeling

D08.05: Experimental Aspects Data Collection and Transfer

2:10 PM | Lecture
Workflows of experimental materials science in PASTA-ELN
Brinckmann, S. (Speaker)[1]; Schwaiger, R.[2]; Tsybenko, H.[2]
[1]Forschungszentrum Jülich GmbH; [2]Forschungszentrum Jülich

2:30 PM | Lecture
Digitalizing a lab course for undergraduate students: ELN, ontology, data management
Bruns, S. (Speaker)[1]; Bayerlein, B.[2]; Grönewald, M.[1]; Kryeziu, J.[2]; Schilling, M.[2]; Waitelonis, J.[4]
[1]TU Darmstadt; [2]Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin; [3]Karlsruher Institut für Technologie (KIT); [4]Leibniz-

2:50 PM | Lecture
Building the nanoMECommons Database: a workflow for indentation data digitalisation to numerical simulations
Mercier, D. (Speaker)[1]; Di Stefano, D.[1]; Dykeman, D.[1]; Ren, Y.[1]
[1]Ansys Inc., Lyon (France)

3:10 PM | Lecture
From testing to simulation: A generalized data schema for a seamless material data workflow
Papenfuß, N. (Speaker)[1]; Ehrig, T.[2]; Just, M.[2]; Klepsch, L.[1]
[1]WIAM GmbH, Dresden; [2]IMA Materialforschung und Anwendungstechnik GmbH, Dresden

3:30 PM | Lecture
Adopting FAIR data practices in materials science: Semantic representation of a quantitative precipitation analysis
Bayerlein, B. (Speaker)[1]; Skrotzki, B.[1]; Zia, G.-A.[1]; Schilling, M.[1]; Hanke, T.[2]; Hartrott, P.[2]; Fliegener, S.[2]; Kryeziu, J.[3]; Waitelonis, J.[4]; Sack, H.[4]

3:50 PM | Lecture
openBISmantic: Improving the interoperability of MSE (meta)data stored in the data management platform openBIS through semantic web technologies
El-Athman, R.[1]; Antons, R. (Speaker)[2]; Valdestilhas, A.[3]; Rizkallah, M.[4]; Hanke, T.[2]; Muth, T.[3]

4:10 PM | Lecture online
Development of an Automated 3D Metallography System and its Application in Microstructure Analysis
Lemiasheuski, A. (Speaker)[1]; Bajer, E.[1]; Göbel, A.[1]; Hesse, R.[1]; Oder, G.[1]; Bettge, D.[1]
[1]Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin

Room SH 1.101

D: Characterization and Modeling
A: Functional Materials

D01.05: Combination of scattering techniques

2:50 PM | Highlight Lecture
Standardisation of neutron- and synchrotron based residual stress analysis
Thiry, M. (Speaker)[1]; Canelo Yubero, D.[1]; Zangenberg, N.[2]
[1]Helmholtz-Zentrum Hereon, Hamburg; [2]Danish Technological Institute, Aarhus (Denmark)

3:10 PM | Lecture
Cracks and micro-cracks characterisation in iron base hardfacing material for nuclear power plant valves using nano tomography
Yescas, M. (Speaker)[1]; Paddea, S.[2]
[1]Framatome, Paris (France); [2]Stress-Space Ltd, Didcot (United Kingdom)

3:30 PM | Lecture
Dynamic precipitation in high resistance 7XXX aluminium alloys
Bouayoune, A. (Speaker)[1]
[1]INSA, Lyon (France)

3:50 PM | Lecture
High-throughput characterisation of the evolution of precipitation hardening during overaging in aluminium alloys
Perrin, T. (Speaker)[1]; De Geuser, F.[1]; Deschamps, A.[1]; Despres, A.[1]; Heugue, P.[2]
[1]Univ. Grenoble Alpes, CNRS, Grenoble INP, SIMaP, F-38000; [2]Safran Transmission Systems,

4:10 PM | Lecture
High resolution measurements and modelling of ultra-fast crystallisation kinetics in Zr-based metallic glass with added oxygen
Tidefelt, M. (Speaker)[1]
[1]Malmö University

Room SH 1.104

A: Functional Materials

A05.02: Functional Catalytic and Nanoporous Materials-2

2:30 PM | Lecture
Glycerol valorization on BiVO4 and TiO2 photoelectrodes
Andreu, T. (Speaker)[1]; Molera, M.[2]; Sarret, M.[1]
[1]University of Barcelona; [2]Universitat de Barcelona

2:50 PM | Lecture
Atomic layer deposition of Ti-MIL-125-like metal-organic-framework thin films towards hydrogen evolution photocatalysts in water splitting
Rath, J. (Speaker)[1]
[1]Technical University Vienna

3:10 PM | Lecture
3D printing of photocatalytic composites containing titania nanoparticles for water pollutants degradation
Bernasconi, R. (Speaker)[1]; Bellè, U.[1]; Brigatti, S.[1]; Diamanti, M.V.[1]
[1]Politecnico di Milano

3:30 PM | Lecture
Hybrid aeromaterials for volumetric photothermal response
Saure, L.M. (Speaker)[1]; Adelung, R.[1]; Feng, X.[2]; Kienle, L.[1]; Kohlmann, N.[1]; Nia, A.S.[2]; Ravishankar, N.[2]; Schütt, F.[1]; Shetty, S.[3]
[1]Kiel University; [2]TU Dresden; [3]Indian Institute of Science, Bangalore (India)

3:50 PM | Lecture
Solar light-driven activated g-C3N4/TiO2 photocatalysts synthesized by microwave irradiation
Matias, M.L. (Speaker)[1]
[1]NOVA University of Lisbon

4:10 PM | Lecture
Hydrogen generation on silicon nanowires
Kim, E.C.[1]; Schleusener, A.[1]; Turishchev, S.[2]; Dietzek-Ivanšić, B.[3]; Sivakov, V. (Speaker)[4]
[1]Leibniz Institute of Photonic Technology, Jena; [2]Voronezh State University; [3]Friedrich Schiller University Jena; [4]Leibniz-Institute of Photonic Technology IPHT, Jena

Room SH 1.105

A: Functional Materials

A06.02: Chromogenic Materials

2:10 PM | Highlight Lecture online
Development of Low-Voltage-Driven Multi-Colored Electrochromic Device using Dry-Deposited V2O5
Lee, C.S. (Speaker)[1]; Choi, S.[1]; Kim, J.[1]; Shin, D.[1]
[1]Hanyang University, Gyeonggi-do (South Korea)

2:30 PM | Lecture
Plasmonic nanostructures of indium-tin oxide ITO and substoichiometric tungsten oxide WO3-x as innovative electrochromic materials for highly-selective dual-band VIS-NIR smart windows
Maho, A. (Speaker)[1]
[1]Université de Bordeaux / Institut

2:50 PM | Lecture online
Electrochromic properties of various materials deposited on metallic nanowire networks as transparent electrode
Ambreen, A. (Speaker)[1]; Faceira, B.[2]; Mazel, A.[2]; Sanchez-Velasquez, C.[1]; Bardet, L.[1]; Muñoz-Rojas, D.[1]; Bellet, D.[1]; Rougier, A.[2]
[1]Univ. Grenoble Alpes, CNRS,

3:10 PM | Lecture
Strongly thermochromic YSZ/W-doped VO2/YSZ coatings for smart-window applications
Kaufman, M.[1]; Farrukh, S. (Speaker)[1]; Vlček, J.[1]
[1]University of West Bohemia, Plzeň (Czech Republic)

3:30 PM | Lecture
Energy storage properties of electrochromic WO3-MoO3 composite films
Jian, W.-B. (Speaker)[1]; Huang, J.-W.[1]; Wei, C.-C.[1]
[1]National Yang Ming Chiao Tung University, Hsinchu (Taiwan)

3:50 PM | Lecture online
Niobium Oxide Thin Films Grown on Flexible ITO-Coated PET Substrates
Marciel, A. (Speaker)[1]
[1]University of Aveiro

4:10 PM | Lecture
Photochemical precharging of tungsten trioxide for enhanced transmittance modulation in electrochromic devices
Brändler, L. (Speaker)[1]; Niklaus, L.[1]; Schott, M.[1]; Löbmann, P.[1]
[1]Fraunhofer Institute for Silicate Research ISC, Würzburg

Room SH 1.106

A: Functional Materials

A03.02: Characterization of composite, thin film materials and colloidal materials

2:30 PM | Lecture
Cyclic degradation of superelasticity of Fe-Ni-Co-Al-Ti shape memory alloy with strong texture studied by in situ deformation
Lehnert, R. (Speaker)[1]
[1]TU Bergakademie Freiberg

2:50 PM | Lecture
On the impact of thermal treatments on shape memory properties of [001] orientated Fe Ni Co Al Ti single crystals
Remich, V. (Speaker)[1]; Krooß, P.[1]; Lauhoff, C.[2]; Niendorf, T.[1]; Sobrero, C.[3]
[1]University of Kassel; [2]RMIT Centre for Additive Manufacturing, Melbourne (Australia); [3]CONICET-Universidad Nacional de Rosario

3:10 PM | Lecture
Phase elucidation in VO2 films for smart windows: an HRTEM and EELS study
Rai, A.[1]; Mihailescu, C.N.[2]; Delimitis, A. (Speaker)[1]; Istrate, C.[3]; Iacob, M.[3]; Locovei, C.[3]; Leca, A.[3]; Dorcioman, G.[2]; Socol, G.[2]; Hansen, V.[1]; Kuncser, V.[3]
[1]University of Stavanger; [2]National Institute for Laser, Plasma and

3:30 PM | Lecture
Atomic-scale insights into compositional and structural evolution of Co-Mn spinel oxide nanoparticles during oxygen evolution reaction
He, B. (Speaker)[1]; Li, T.[1]
[1]Ruhr-Universität Bochum

3:50 PM | Lecture
Robust integration of small-diameter fiber optic sensors for distributed strain sensing in fiber reinforced composite materials
Bareiro, O. (Speaker)[1]; Girmen, C.[2]; Gries, T.[3]
[1]RWTH Aachen University; [2]Fraunhofer-Institut für Produktionstechnologie IPT,

4:10 PM | Lecture
Effects of nanoliposomes on the physical and chemical properties of colloidal GelMA-based scaffolds
Omidvari, E. (Speaker)[1]; Tamayol, A.[2]; sanchez-gonzalez, l.[1]; Samandari, M.[1]; kahn, c.[1]; arab-tehrany, e.[3]
[1]université de lorraine, nancy (France); [2]connecticut university; [3]université de Lorraine, nancy

Room SH 1.107

A: Functional Materials

A02.02: Optical Properties of Semiconductor Nanostructures

2:10 PM | Highlight Lecture
Electrical Transport in Monolithic Al-Si/Al-Ge Heterojunction based Nanowire Schottky Barrier Field-Effect Transistors
Behrle, R. (Speaker)[1]; Sistani, M.[1]; Barth, S.[2]; Murphey, C.G.[3]; Cahoon, J.F.[3]; den Hertog, M.I.[4]; Momtaz, Z.S.[4]; Weber, W.M.[1]
[1]TU Wien, Vienna (Austria); [2]Goethe Universität Frankfurt, Frankfurt am Main; [3]University of North Carolina, Chapel Hill (United States); [4]Université Grenoble-Alpes

2:50 PM | Highlight Lecture
Indications for lasing in hexagonal crystal phase SiGe nanowires
Haverkort, J. (Speaker)[1]; van Tilburg, M.[1]; Farina, R.[1]; Peeters, W.[1]; Vettori, M.[1]; Koolen, R.[1]; van Lange, V.[1]; Jansen, M.[1]; Verheijen, M.[1]; Finley, J.[2]; Bakkers, E.[1]
[1]Eindhoven University of Technology; [2]Technische Universität München, Garching

3:30 PM | Lecture
Light emission from hexagonal SiGe multishells
Peeters, W.[1]; van Lange, V.[1]; Vettori, M.[1]; Verheijen, M.[1]; Bakkers, E.[1]; Haverkort, J. (Speaker)[1]
[1]Eindhoven University of Technology

3:50 PM | Lecture
Understanding Nanowire Laser Performance – Insights from Experimental Big-Data
Church, S. (Speaker)[1]; Patel, N.[1]; Al-Abri, R.[1]; Al-Amairi, N.[1]; Vilasam, A.[2]; Tan, H.[2]; Jagadish, C.[2]; Zhang, Y.[3]; Liu, H.[4]; Parkinson, P.[1]
[1]University of Manchester; [2]Australian National University, Canberra (Australia); [3]Zheijang

4:10 PM | Lecture
Implantation Doping and Recrystallization in Hexagonal Silicon Germanium Nanowires
Bollier, I. (Speaker)[1]; Vettori, M.[2]; Peeters, W.H.[2]; Bakkers, E.P.[2]; Schmid, H.[1]
[1]IBM Research Europe, Rueschlikon (Switzerland); [2]Eindhoven University of Technology

Room SH 1.108

A: Functional Materials

A07.03: Cellulose-based functional materials for electronics and sensors

2:50 PM | Highlight Lecture
Sustainable flexible electronics
Smolander, M. (Speaker)[1]; Hakola, L.[2]; Orelma, H.[2]; Torvinen, K.[2]; Välimäki, M.[2]
[1]VTT Technical Research Centre of Finland Ltd, Espoo (Finland); [2]VTT Technical Research Centre of Finland, Espoo (Finland)

3:10 PM | Lecture online
Cellulose-based ionic conductors for green electronic applications
Cunha, I. (Speaker)[1]; Carvalho, J.T.[1]; Ferreira, S.H.[1]; Martins, J.[1]; Martins, R.[1]; Pereira, L.[2]
[1]CENIMAT / CEMOP, Caparica (Portugal); [2]CENIMAT / CEMOP and AlmaScience, Caparica (Portugal)

3:30 PM | Lecture
Cellulose-based optical and electronic sensing systems: From a substrate to active elements
Orelma, H. (Speaker)[1]; Hokkanen, A.[2]; Jaiswal, A.[2]; Mohammadhossein, B.[2]; Smolander, M.[2]; Torvinen, K.[2]
[1]VTT Technical Research Centre of Finland Ltd, Espoo (Finland); [2]VTT-Technical Research Centre of

3:50 PM | Lecture
Micro-engineered graphene-hydrogel composites as soft actuators
Hauck, M. (Speaker)[1]; Adelung, R.[1]; Feng, X.[2]; Saure, L.M.[1]; Schütt, F.[1]; Shaygan Nia, A.[2]; Zeller-Plumhoff, B.[3]
[1]Kiel University; [2]Technische Universität Dresden; [3]Helmholtz-Zentrum Hereon, Geesthacht

4:10 PM | Lecture
Smart cellulose-based structures for architectural applications
Scholz, R. (Speaker)[1]; Langhansl, M.[2]; Walther, F.[1]; Zollfrank, C.[2]
[1]TU Dortmund University; [2]Technical University of Munich, Straubing

Room SH 0.101

D: Characterization and Modeling

D04.09. Micromechanics in Metal & Steel Research

5:00 PM | Lecture

Nanomechanical investigation of strain hardening and its influence on the damage formation in a commercial DP800 steel

Wollenweber, M. (Speaker)[1]; Al-Samman, T.[1]; Korte-Kerzel, S.[1]; Kusche, C.[1]; Medghalchi, S.[1]

[1]RWTH University, Aachen

5:20 PM | Lecture

Micromechanical study of damage initiation and propagation in dual-phase steels

Alsharif, A.[1]; Dowding, R.[2]; Pinna, C. (Speaker)[1]

[1]The University of Sheffield; [2]Metropolitan University, Manchester (United Kingdom)

5:40 PM | Lecture

Sites-specific phase transformation study of dual-phase martempered rods using EBSD and high-speed nanomechanical testing

Hasan, M. (Speaker)[1]; Seekala, H.[2]; Phani, P.S.[2]; Janakiram, S.[1]; Rajulapati, K.V.[1]

[1]University of Hyderabad; [2]International Advanced Research

6:00 PM | Lecture

In-situ Microstructural Analysis and Modeling of TRIP Steel Matrix Reinforced with Zirconia Particles

Qayyum, F. (Speaker)[1]; Brendorf, S.[1]; Chao, C.[2]; Chiu, C.[2]; Guk, S.[1]; Prahl, U.[1]

[1]TU Bergakademie Freiberg; [2]National Taiwan University of Science and Technology, Taipei (Taiwan)

6:20 PM | Lecture

Towards correct measurements of hardness and elastic modulus of surface coatings: choosing the right test conditions

Nohava, J. (Speaker)[1]; Favre, V.[1]; Meister, D.[2]; Thevenaz, I.[1]

[1]Anton Paar TriTec SA, Peseux (Switzerland); [2]Anton Paar Germany, Ostfildern

Room SH 0.105

D: Characterization and Modeling

D05.06: Thermochemical energy storage and Magnetic materials

5:00 PM | Lecture

Modeling Structural Changes in a Fixed Bed Reactor for Thermochemical Heat Storage During Continuous Cycling

Prill, T. (Speaker)[1]; Gollsch, M.[1]; Jahnke, T.[1]; Linder, M.[1]

[1]German Aerospace Center (DLR), Stuttgart

5:20 PM | Lecture

Modelling Non-Equilibrium Precipitation Kinetics in CuCrZr for Use in Plasma Facing Components

Engel, S. (Speaker)[1]; Quinta da Fonseca, J.[2]; Shanthraj, P.[3]

[1]The University of Manchester; [2]University of Manchester; [3]United Kingdom Atomic Energy Authority (UKAEA), Culham Science Centre, Abingdon (United Kingdom)

5:40 PM | Lecture online

Data-driven approach to predict the intrinsic magnetic properties for hard magnetic 14:2:1 phase using chemical compositional features

Choudhary, A.-K. (Speaker)[1]; Bernthaler, T.[1]; Goll, D.[1]; Hohs, D.[1]; Jansche, A.[1]; Schneider, G.[1]

[1]Aalen University of Applied Sciences - Technology and

6:00 PM | Lecture

Salt particles for thermochemical energy storage: hydration mechanism and power output

Cotti, M. (Speaker)[1]; Adan, O.[2]; Fischer, H.[2]; Huinink, H.[3]

[1]Eindhoven University of Technology; [2]TNO, Eindhoven (Netherlands); [3]Eindhoven Eniversity of Technology

6:20 PM | Lecture

Numerical exploration on the thermal response of metallic Primitive-Schwarz lattice/organic PCMs composites

Molteni, M. (Speaker)[1]; Candidori, S.[1]; Gariboldi, E.[1]; Graziosi, S.[1]

[1]Politecnico di Milano

6:40 PM | Lecture

Multicomponent mixtures of salts and metals for thermal energy storage application

Sergeev, D. (Speaker)[1]; Qi, J.[2]; Morsa, A.[2]; Keuter, P.[3]; to Baben, M.[3]; Hack, K.[3]; Müller, M.[2]

[1]NETZSCH-Gerätebau GmbH, Selb; [2]Forschungszentrum Jülich; [3]GTT-Technologies, Herzogenrath

Room SH 0.106

D: Characterization and Modeling

D07.06: Thermodynamics

5:00 PM | Highlight Lecture

Accurate thermodynamic properties with direct upsampling: Application to elements from group IV, V and VI

Forslund, A. (Speaker)[1]; Grabowski, B.[1]; Jung, J.H.[1]; Srinivasan, P.[1]

[1]Universität Stuttgart

5:20 PM | Lecture

Ab-initio informed thermodynamic modeling and uncertainty quantification in metallic alloys

Spitaler, T. (Speaker)[1]; Romaner, L.[1]

[1]Montanuniversität Leoben

5:40 PM | Lecture

Combining DFT and CALPHAD for the investigation of atomic ordering in the fcc Ni-33 at.%Cr model alloy

Huang, L. (Speaker)[1]; Brimbal, D.[2]; Schuler, T.[1]; Soisson, F.[1]

[1]CEA ISAS, Gif-sur-Yvette (France); [2]Framatome, Courbevoie (France)

6:00 PM | Lecture

Formation and migration of self-interstitial atoms in Fe-Ni systems

Mainguy, T. (Speaker)[1]; Fu, C.-C.[1]; Li, K.[2]; Nastar, M.[1]

[1]Université Paris-Saclay, CEA, Gif-sur-Yvette (France); [2]University of Toronto

6:20 PM | Lecture

Impact of magnetic excitation on vacancy formation and migration in Fe-Cr systems

Bozkurt, H. (Speaker)[1]; Barreteau, C.[2]; Fu, C.-C.[1]; Soisson, F.[1]

[1]Université Paris-Saclay, CEA, Gif-sur-Yvette (France); [2]Université Paris-Saclay, CEA, CNRS, SPEC, France, Gif-sur-Yvette (France)

6:40 PM | Lecture

Atomistic calculations on SiC polytype stability

Rajabzadeh, Z.[1]; Halkali, C.[1]; Romaner, L. (Speaker)[1]

[1]Montanuniversität Leoben

Room SH 0.107

D: Characterization and Modeling

D10.06. Additive manufacturing and Smart structures

5:00 PM | Highlight Lecture

Combining Phase Field Modeling and Deep Learning for Accurate Modeling of Crystal Orientation in Solidification Microstructures obtained by Wire Arc Additive manufacturing

Herbeaux, A. (Speaker)[1]; Bergheau, J.-M.[2]; Klöcker, H.[3]; Maurice. C.[3]; Villani. A.[3]

5:20 PM | Lecture

Experimentally informed multiscale creep modelling of additive manufactured Ni-based superalloys

Kianinejad, K. (Speaker)[1]

[1]Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin

5:40 PM | Lecture

Micro-macro modeling of fatigue behavior of friction-stir hybrid welded joint of AlSi10Mg parts produced by additive manufacturing and casting

Nammalvar Raja Rajan, A. (Speaker)[1]; Krochmal, M.[2]; Wegener, T.[2]; Hartmaier, A.[1]; Niendorf, T.[2]; Moeini, G.[1]

[1]Westphalian University of Applied

6:00 PM | Lecture

Influence of Multi-Element Grain Boundary Segregation on Static Recrystallization in Ferritic Steels

Jechtl, T.[1]; Romaner, L.[2]; Scheiber, D. (Speaker)[1]

[1]Materials Center Leoben Forschung GmbH; [2]Montanuniversität Leoben

Room SH 0.109

D: Characterization and Modeling

D08.06: Materials Data Platforms: Applications to Materials Development

5:00 PM | Lecture

A digital revolution in materials development: the OntoTrans project

Roscioni, O.M. (Speaker)[1]; Goldbeck, G.[1]

[1]Goldbeck Consulting LTD, Cambridge (United Kingdom)

5:20 PM | Lecture

MInt, a digital platform for academia-industry collaboration in materials R&D

Demura, M. (Speaker)[1]; Minamoto, S.[1]; Kadohira, T.[1]; Ito, K.[1]

[1]National Institute for Materials Science, Tsukuba (Japan)

5:40 PM | Lecture

A Useful Reference Process for Scientific Publication: Heat Treatments, Tensile Tests, and Metallography Represented via Comprehensive Ontologies

Birkholz, H. (Speaker)[1]; Jung, M.[2]; Gumbsch, P.[2]; Mädler, L.[3]

[1]Leibniz-Institut für Werkstofforientierte Technologien

6:00 PM | Lecture

Streamlining the material development process through Workflows within the Platform MaterialDigital

Schaarschmidt, J. (Speaker)[1]; Caldeira Rego, C.R.[1]; Hickel, T.[2]; Kryeziu, J.[1]; Wenzel, W.[1]

[1]Karlsruhe Institute of Technology (KIT); [2]Bundesanstalt für Materialforschung und -prüfung

6:20 PM | Lecture

Design of finite temperature materials properties enabled by innovative digital concepts

Hickel, T. (Speaker)[1]; Sözen, H.[2]; Hegde, O.[3]; Körmann, F.[1]; Waseda, O.[3]; Janssen, J.[3]; Neugebauer, J.[3]

[1]BAM Federal Institute for Materials Research and Testing, Berlin; [2]Uni Oldenburg; [3]Max-

6:40 PM | Lecture

Digitalization of a high-throughput alloy development process

Eisenbart, M. (Speaker)[1]; Bauer, F.[1]; Klotz, U.[1]; Hanke, T.[2]; Huschle, T.[2]; Weber, M.[2]; Dziwis, G.[3]

[1]fem Forschungsinstitut Edelmetalle + Metallchemie, Schwäbisch Gmünd; [2]Fraunhofer-Institut für Werkstoffmechanik IWM, Freiburg; [3]Institut für

4:30 PM | Coffee Break
Hörsaalzentrum Foyer

Room SH 1.101

D: Characterization and Modeling

A: Functional Materials

A01.01: Advanced characterization methods of 2D materials

5:00 PM | Highlight Lecture

In Situ Characterisation of Graphene Growth on Liquid Metal Catalysts by Chemical Vapour Deposition

Belova, V. (Speaker)[1]; Jankowski, M.[1]; Konovalov, O.[1]; Renaud, G.[2]; Saedi, M.[3]; Groot, I.[3]

[1]European Synchrotron Radiation Facility - ESRF, Grenoble (France); [2]Université Grenoble Alpes/CEA;

5:20 PM | Lecture

Role of defects in graphene-electrolyte charge transfer

Frank, O. (Speaker)[1]

[1]Czech Academy of Sciences, Prague 8 (Czech Republic)

5:40 PM | Lecture

Quantitative MXene spectroscopy in TEM from experiments and ab initio simulations: multilayer stacking vs surface effects

Bilyk, T.[1]; Mauchamp, V. (Speaker)[1]; Hsiao, H.-W.[2]; Yuan, R.[2]; Bugnet, M.[2]; David, M.-L.[1]; Célérier, S.[4]; Zuo, J.-M.[2]; Pacaud, J.[1]

[1]Université de Poitiers, ISAE-

6:00 PM | Highlight Lecture

Studying Dielectric Disorder of van der Waals Materials by Near Field Optical Microscopy and Tip Enhanced Spectroscopy

Kusch, P. (Speaker)[1]

[1]Freie Universität Berlin

6:20 PM | Lecture

Highly tailorable pseudocapacitive 3D-thin film structures for supercapacitor applications

Stern, J.-O. (Speaker)[1]; Krüger, H.[1]; Spurling, D.[2]; Adelung, R.[1]; Nicolosi, V.[2]; Schütt, F.[1]

[1]Kiel University; [2]Trinity College Dublin

6:40 PM | Lecture

Ultra-thin functional layers and thin-film technology for industrial applications

Godja, N.C. (Speaker)[1]; Schalkhammer, T.[1]

[1]RHP GmbH, Wiener Neustadt (Austria)

Room SH 1.104

A: Functional Materials

A03.03: Functional Catalytic and Nanoporous Materials 3

5:00 PM | Highlight Lecture online

Identical Location TEM of NiMo Catalysts for Hydrogen Evolution Reaction

Neumüller, D. (Speaker)[1]; Rafailovic, L.D.[1]; Eckert, J.[1]; Gammer, C.[2]

[1]Montanuniversität Leoben; [2]Erich Schmid Institute of Materials Science, Leoben (Austria)

5:20 PM | Lecture

Hypercrosslinked Polymer Solid Acid Catalysts

Woodward, R. (Speaker)[1]; Blocher, A.[1]; Mayer, F.M.[1]; Schweng, P.[1]; Tikovits, T.[1]

[1]University of Vienna

5:40 PM | Lecture

Conversion of Palmitic Acid into Parrafin for Bio-avtur through Deoxygenation Reaction over bimetal oxide NiMoO4/SBA-15 Catalyst

Krisnandi, Y.K. (Speaker)[1]; Mahatma, A.T.[1]; Abdullah, I.[1]

[1]Universitas Indonesia, Depok (Indonesia)

Room SH 1.105

A: Functional Materials

A06.03: Smart Materials and Devices

5:00 PM | Highlight Lecture

Towards a standard characterization of electrochromic materials and devices performance

Padilla, J. (Speaker)[1]; Shen, D.E.[2]; Österholm, A.[2]; Reynolds, J.[2]; Niklaus, L.[3]; Schott, M.[3]; Posset, U.[3]; Faceira, B.[4]; Mjejri, I.[4]; Rougier, A.[4]; Alesanco, Y.[5]; Viñuales, A.[5]

5:20 PM | Lecture

Impact of crosslinker chain length on the viscosity of gel polymer electrolyte for automized assembly of electrochromic devices

Dahms, S. (Speaker)[1]; Niklaus, L.[1]; Schott, M.[1]; Giffin, G.[2]; Giffin, G.[1]; Löbmann, P.[1]; Löbmann, P.[2]

[1]Fraunhofer Institute for Silicate Research, Würzburg; [2]Julius-

5:40 PM | Lecture

Roll-to-roll processed electrochromic films for retrofit applications

Schott, M. (Speaker)[1]; Niklaus, L.[1]

[1]Fraunhofer Institute for Silicate Research ISC, Würzburg

6:00 PM | Lecture

Functional cover glass materials for solar energy applications

Karlsson, S. (Speaker)[1]

[1]RISE Research Institutes of Sweden AB, Växjö (Sweden)

6:20 PM | Lecture online

Impact of mechanical strain on the piezoelectric characteristics of ZnO semiconducting nanonets for implementation in Nanogenerators

Sharma, S. (Speaker)[1]; Braccini, M.[1]; Volpi, F.[1]; Ardila, G.[1]; Ternon, C.[1]

[1]University of Grenoble Alpes

6:40 PM | Lecture

Hybrid Carbon-Based Nanomaterials as Building Blocks for Innovative Multi-Tasking Thermally-Chargeable Textile Supercapacitors

Pereira, C. (Speaker)[1]; Teixeira, J.S.[1]; Costa, R.S.[2]; Nunes, M.[1]; Pires, A.L.[2]; Pereira, A.M.[2]

[1]LAQV-REQUIMTE, Faculty of Sciences, University of Porto;

Room SH 1.106

A: Functional Materials

A03.03: Characterization methods for structural materials and alloys

5:00 PM | Lecture

Effect of annealing temperature and buffer layer on structural and mechanical properties of Ti-Zr-Mo multilayer shape memory thin films

Marupalli, B.C.G. (Speaker)[1]; Sahu, B.P.[2]; Mitra, R.[1]; Aich, S.[1]

[1]Indian Institute of Technology Kharagpur; [2]University of Michigan

5:20 PM | Lecture

Graphene oxide hydrogels: a study on methylene blue adsorption kinetics and capacity at different temperatures

Gutiérrez, F. (Speaker)[1]; Diaz-Droguett, D.[1]

[1]Pontificia Universidad Católica de Chile, Santiago (Chile)

5:40 PM | Lecture

Development of polycrystalline NiMnGa by open die pressing toward new elastocaloric properties

Villa, E. (Speaker)[1]; Tamandi, M.[2]; Caimi, M.[2]; Bassani, E.[3]; Passaretti, F.[3]; Righi, L.[4]; Villa, F.[3]

[1]Consiglio Nazionale delle Ricerche CNR, Lecco (Italy); [2]University of Milano Bicocca; [3]CNR ICMATE,

6:00 PM | Lecture

Influence of silver content in combination with the addition of solid solution hardening elements on the compression creep behavior of Sn-Ag-Cu lead-free solder alloys

Kreiner, C. (Speaker)[1]; Höppel, H.W.[2]; Tetzlaff, U.[1]

[1]Technische Hochschule Ingolstadt; [2]Friedrich-Alexander-

6:20 PM | Lecture

Rapid solidification of VFeSb-based Half-Heusler alloys

Li, N. (Speaker)[1]

[1]Northwestern Polytechnique University Xi'an, Xi'an Shaanxi (China)

6:40 PM | Lecture

Thermomechanical and elastocaloric characterization of NiMnTi shape memory alloy for solid-state cooling applications

Villa, F. (Speaker)[1]; Ruggieri, P.[2]; Bennato, N.[1]; Righi, L.[3]; Casati, R.[4]; Passaretti, F.[1]; Villa, E.[1]

[1]CNR ICMATE, Lecco (Italy); [2]Università degli studi Milano -

Room SH 1.107

A: Functional Materials

A02.03: Nanostructured Semiconductors: Synthesis

5:00 PM | Lecture

Synthesis of Nanowires and Nanotubes via Spark Discharge FCCVD

Vazquez-Pufleau, M. (Speaker)[1]; Gomez Palos, I.[1]; Arevalo, L.[1]; Vilatela, J.J.[1]

[1]IMDEA Materials, Madrid (Spain)

5:20 PM | Lecture

Toward metal oxide nanowire webs: synthesis by floating catalyst and parameter exploration through in-situ measurements

Gómez-Palos, I. (Speaker)[1]; Vazquez-Pufleau, M.[1]; Vilatela, J.J.[1]

[1]IMDEA Materials, GETAFE (Spain)

5:40 PM | Lecture

Alternative earth-abundant catalyst for epitaxial zinc phosphide nanowire growth

Escobar Steinvall, S. (Speaker)[1]; Dick, K.A.[1]; Lehmann, S.[1]; Marnauza, M.[1]

[1]Lund University

6:00 PM | Lecture

Synthesis of nanostructures by self-assembly of selected inorganic ions

Zhang, X. (Speaker)[1]; Anggara, K.[1]; Srot, V.[1]; Wu, X.[1]; van Aken, P.A.[1]; Kern, K.[1]

[1]Max Planck Institute for Solid State Research, Stuttgart

6:20 PM | Lecture

TiO2 nanotube (TNT) growth on titanium alloys and their corrosion behaviour in Simulated Body Fluid (SBF)

Jadhav, H. (Speaker)[1]; Patro, A.K.[1]; Pande, S.S.[1]; Tatiparti, S.S.V.[1]; Mote, R.[1]

[1]Indian Institute of Technology Bombay, Mumbai (India)

Room SH 1.108

A: Functional Materials

A07.04: Cellulose-based functional materials for energy devices

5:00 PM | Highlight Lecture

Stable High-Performance 3D Supercapacitor Electrodes by Templating Polypyrrole on Cellulose Nanocrystals

Sun, Z.[1]; Eyley, S.[1]; Guo, Y.[2]; Salminen, R.[1]; Thielemans, W. (Speaker)[1]

[1]KU Leuven, Kortrijk (Belgium); [2]University of Ghent

5:20 PM | Lecture

Carbon yarn-based supercapacitors with in situ regenerated cellulose hydrogel for sustainable wearable electronics

Carvalho, J.T. (Speaker)[1]; Coelho, J.[1]; Cunha, I.[1]; Fortunato, E.[1]; Martins, R.[1]; Pereira, L.[2]

[1]CENIMAT|i3N, Caparica (Portugal); [2]CENIMAT|i3N &

5:40 PM | Lecture

Flexible and high ionically conductor gel electrolyte based on carboxymethyl cellulose blended with biodegradable polymers for Zn-air batteries

Garcia-Gaitan, E. (Speaker)[1]

[1]Centre for Cooperative Research on Alternative Energies (CIC energiGUNE), Basque Research and Technology Alliance (BRTA),

6:00 PM | Lecture

Single Electrode Yarn based Triboelectric Nanogenerators Intercalated with NCCs Electrophoretic Deposited Films

Barras, R. (Speaker)[1]; Barquinha, P.[1]; Gaspar, D.[1]; Grey, P.[1]; Martins, R.[1]; Pereira, L.[1]

[1]CenimatJi3N, Almada (Portugal)

4:30 PM | Coffee Break
Hörsaalzentrum Foyer

Room HZ 1

Plenaries B: Structural Materials

Closing Ceremony

B07.10: Characterisation of steels and steel alloys

10:30 AM | Lecture

Combinatorial study of composition-dependent phase transformations in steels: high-throughput experiments help building a predictive model

Ksibi, A.[1]; Van Landeghem, H.P.[1]; Deschamps, A. (Speaker)[2]; Bonnet, F.[3]; Denand, B.[4]; Geandier, G.[4]

[1]SIMAP Grenoble INP, Saint Maretin d'Heres (France); [2]Université

10:50 AM | Lecture

Influences of Superimposed Ultrasonic Vibration on the Flow Stress of Specimen with Different Initial Diameter-Height-Ratio of a Ferrite-Perlite and Austenite Stainless Steel

Burmeister, M. (Speaker)[1]; Kerscher, E.[1]

[1]TU Kaiserslautern

11:10 AM | Lecture

Characterisation of a low-carbon cast steel with a TiC-MMC reinforcement

Moreira, A.B. (Speaker)[1]; Ribeiro, L.M.M.[1]; Vieira, M.F.[1]

[1]Faculty of Engineering of the University of Porto; LAETA/INEGI—Institute of Science and Innovation in Mechanical and Industrial Engineering

11:30 AM | Lecture

Characterization of microstructure, mechanical properties, and high-cycle fatigue properties of bainitic steels

Gülbay, O. (Speaker)[1]; Ackermann, M.[1]; Gramlich, A.[1]; Krupp, U.[1]

[1]RWTH Aachen University

11:50 AM | Lecture

Effect of cold work on creep deformation behaviour of austenitic stainless steel 304HCu

Parabatini, S. (Speaker)[1]

[1]Indian Institute of Technology Madras, Chennai (India)

12:10 PM | Lecture

Ferritic spinodal decomposition in a low alloyed duplex stainless steel UNS S32101

Pigato, M. (Speaker)[1]; Gennari, C.[1]; Settimi, A.G.[1]; Francesch, M.[1]; Pezzato, L.[1]; Meszaros, I.[2]; Calliari, I.[1]

[1]University of Padova; [2]University of Technology and Economics of Budapest

12:30 PM | Lecture

Time-dependent deformation behaviours of three stainless steels at elevated temperature

Xu, J. (Speaker)[1]; Calmunger, M.[1]; Chai, G.[2]

[1]Linköping University; [2]Alleima EMEA AB, Sandviken (Sweden)

Room HZ 2

B: Structural Materials

B05.12: Advanced Characterisation and Simulation of High-Entropy Alloys

10:50 AM | Lecture

Correlative TEM/APT Techniques for Characterization of Secondary Hardening in CoCrNi-based Alloys with Varying Mo Content

Köbrich, M. (Speaker)[1]; Göken, M.[1]; Neumeier, S.[1]

[1]Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)

11:10 AM | Lecture

Effects of chemical segregation on total scattering-based local lattice distortion measurements in RHEAs

Hu, Y. (Speaker)[1]; Owen, L.R.[2]; Playford, H.[3]; Guo, S.[1]; Colliander, M.H.[1]

[1]Chalmers University of Technology, Gothenburg (Sweden); [2]The University of Sheffield; [3]STFC Rutherford Appleton Laboratory,

11:30 AM | Lecture

Design and characterisation of a FeNiCrMn-Al High Entropy Alloy

Castellote-Alvarez, R. (Speaker)[1]; San-Martín, D.[1]; Milenkovic, S.[2]; Molina-Aldareguia, J.[2]; Toda-Caraballo, I.[1]

[1]National Center for Metallurgical Research (CENIM-CSIC), Madrid (Spain); [2]IMDEA Materials Institute,

11:50 AM | Lecture

Dislocation in High Entropy Alloys at finite temperatures

Le, H. (Speaker)[1]; Nöhring, W.[1]; Patewka, L.[1]

[1]University of Freiburg

12:10 PM | Lecture

Interplay between dislocations and correlated stress environment in random alloys

Geslin, P.-A. (Speaker)[1]; Rida, A.[1]; Rodney, D.[2]; Sboui, B.[1]

[1]CNRS / INSA-Lyon, Villeurbanne (France); [2]Université Lyon 1, Villeurbanne (France)

Room HZ 4

B: Structural Materials

B05.10: Novel Alloy Design for High-Entropy Alloys

10:50 AM | Lecture

Phase stability in full temperature and composition space of the Co-Cr-Fe-Mn-Ni system predicted by TCHEA

Jansson, A. (Speaker)[1]

[1]Thermo-Calc Software AB, Solna (Sweden)

11:10 AM | Lecture

pySSpredict: A Python-based Solid-Solution Strength Prediction Toolkit for Designing Complex Concentrated Alloys

Wen, D. (Speaker)[1]; Titus, M.[2]

[1]University of Liverpool; [2]Purdue University, West Lafayette (United States)

11:30 AM | Lecture online

Optimum design of entropy alloy composition in chromium iron nickel

Ren, W. (Speaker)[1]; Wang, W.-L.[2]; Zhang, Y.-X.[3]

[1]Northwestern Polytechnical University Xi'an; [2]Northwestern Polytechnical University, Xi'an (China); [3]Xi'an University of Posts and Telecommunications, Xi'an (China)

11:50 AM | Lecture online

Amorphous to crystalline: high-throughput thermal stability investigation on TiZrHfNbTa high-entropy alloy system

Cheng, C. (Speaker)[1]; Reng, R.[2]; Zou, Y.[1]

[1]University of Toronto; [2]Canadian Light Source, Saskatoon (Canada)

12:10 PM | Lecture

Structural Stability of Supported High-Entropy Alloy Nanoparticles: A Computational Approach

Laux, J.K. (Speaker)[1]; Sulaiman, V.I.[1]; Albe, K.[1]

[1]Technische Universität Darmstadt

12:30 PM | Lecture

Zinc, an unlikely FCC stabilizer element in high entropy alloys

Hilhorst, A. (Speaker)[1]; Chen, W.[1]; Hautier, G.[2]; Jacques, P.J.[1]; Marchal-Marchant, V.[1]

[1]UCLouvain, Ottignies-Louvain-la-Neuve (Belgium); [2]Dartmouth College, Hanover (United States)

Room HZ 5

B: Structural Materials

B01.10: Understanding microstructure evolution of steels

10:30 AM | Keynote Lecture

Influence of hot compression on the microstructure of aluminium alloyed steels

Krupp, U. (Speaker)[1]; Emmrich, R.[1]

[1]Institut für Eisenhüttenkunde, Aachen

11:10 AM | Lecture

In-situ Measurement of Bainite/martensite Surface Relief by Digital Holographic Microscopy

Hou, R. (Speaker)[1]; Inoue, J.[2]

[1]The University of Tokyo; [2]the University of Tokyo

11:30 AM | Lecture

Microstructure and solute distribution during ageing of a 18% Ni maraging 300 steel manufactured by laser powder bed fusion

Santana, A. (Speaker)[1]; Capdevila, C.[1]; Clarke, A.J.[2]; Eres-Castellanos, A.[2]; G. Caballero, F.[1]; Poplawsky, J.D.[3]; Rementeria, R.[4]

[1]National Centre for Metallurgical Research (CENIM-CSIC), Madrid

11:50 AM | Lecture

Geometrical aspects of variant pairing in lath martensite of Fe-Ni-Cr-C alloy

Takahashi, N. (Speaker)[1]; Shinohara, Y.[1]; Tanaka, Y.[2]; Kawata, H.[2]; Inamura, T.[1]

[1]Tokyo Institute of Technology, J3-22, 4259 Nagatsutacho, Midori-ku, Yokohama (Japan); [2]Nippon Steel Corporation, 1-8 fusocho, Amagasaki, Hyogo (Japan)

12:10 PM | Lecture

Role of dislocation characteristics on the recrystallization of martensite in a low-carbon steel

Dannoshita, H. (Speaker)[1]; Ogawa, T.[2]; Yamashita, T.[2]; Harjo, S.[3]; Umezawa, O.[1]

[1]Yokohama National University; [2]Nagoya University, Aichi (Japan); [3]Osaka University, Ibaraki (Japan); [4]Japan Atomic Energy Agency,

12:30 PM | Lecture

Effect of combined additional B and Mo on recrystallization behavior in steel

Yasuyuki, O. (Speaker)[1]

[1]Chiba

Room HZ 6

B: Structural Materials

B02.04: Magnesium Alloys

11:10 AM | Highlight Lecture online

Multi-solute solid solution behavior of magnesium alloys and its application on materials design

Yuan, Y. (Speaker)[1]; Pan, F.[1]

[1]Chongqing University

11:30 AM | Lecture

Microstructure Control of Long Period Stacking Ordered (LPSO) Forming Magnesium Alloys

Odell, S. (Speaker)[1]; Davis, A.[1]; Robson, J.[1]

[1]University of Manchester

11:50 AM | Lecture

New insights into AZ91 grain refinement by combining cooling curve experiments with an inverse heat flow model

Hao, X. (Speaker)[1]; Xu, Z.[1]; Gourlay, C.[1]; Li, Q.[1]

[1]Imperial College London

12:10 PM | Lecture

Influence of energy on the additive manufacturing of WE43 alloy

de la Pezuela, J. (Speaker)[1]; Rams, J.[1]; Torres, B.[1]

[1]Rey Juan Carlos University, Móstoles (Spain)

12:30 PM | Lecture

Benefits of PEO coatings on Additively Manufactured Magnesium

Sharma, A. (Speaker)[1]; Zerrer, J.[1]; Buling, A.[1]

[1]ELB – Eloxalwerk Ludwigsburg Helmut Zerrer GmbH

Room HZ 7

H: Materials for Circularity and Sustainability

H10.04: Metal Recycling

10:30 AM | Highlight Lecture

Becoming independent of primary sources: Smart technologies for production of sophisticated products from fully circular aluminum materials

Zinn, C. (Speaker)[1]; Solanki, K.[1]; von Hehl, A.[1]

[1]University of Siegen

10:50 AM | Lecture

Copper precipitates: A step towards longer fatigue life

Elbeltagy, A. (Speaker)[1]; Gramlich, A.[1]; Krupp, U.[1]

[1]RWTH Aachen University

11:10 AM | Lecture

Data-driven Modelling for Metal Yield Prediction in Hydrometallurgical Recycling Processes of Lithium-ion Batteries in Batch Reactor

Song, W. (Speaker)[1]; Diaz, F.[1]; Friedrich, B.[1]

[1]RWTH Aachen University

11:30 AM | Lecture

High throughput characterization of gradient casted 6XXX alloys to evaluate the impact of recycling impurities on forming properties

Guerin, P. (Speaker)[1]; Deschamps, A.[1]; De Geuser, F.[1]; Lhuissier, P.[1]; Mas, F.[2]

[1]Univ. Grenoble Alpes, CNRS, Grenoble INP; [2]Constellium

11:50 AM | Lecture

Metallurgical Challenges on the Path to Green Aluminium

Strobel, K. (Speaker)[1]; Dichtl, C.[1]; Tosone, R.[1]

[1]AMAG rolling GmbH, Ranshofen (Austria)

12:10 PM | Lecture

Experimental and Computational Investigation of Heat Treatment Response of Recycled Al-Si-Mg Alloy for Sustainable Structural Die Casting Applications

Cinkilic, E. (Speaker)[1]; Moodispaw, M.[2]; Zhang, J.[2]; Miao, J.[2]; Luo, A.[2]

[1]Hakkari University; [2]The Ohio State University, Columbus (United

12:30 PM | Lecture

Challenge and Potential of Cu Residues in Recycling Steel

Krupp, U. (Speaker)[1]; Springer, H.[1]; Gramlich, A.R.M.[1]

[1]RWTH Aachen University

Room HZ 8

C: Processing

C01.10: Material and process development in DED

10:50 AM | Highlight Lecture

Grain refinement by ultrasound assisted laser direct energy deposition of 316L wire

Heidowitzsch, M. (Speaker)[1]; Samuel, C.[2]; Gerdt, L.[2]; Mätje, J.-F.[2]; Kaspar, J.[2]; Riede, M.[2]; Lopez, E.[2]; Brückner, F.[2]; Leyens, C.[2]

[1]Fraunhofer Institute for Material and Beam Technology IWS Dresden; [2]Fraunhofer Institute for

11:10 AM | Lecture

The effect of cyclic heat treatment on microstructure evolution during Plasma Arc Additive Manufacturing employing an SEM in-situ heating study

Koenig, C. (Speaker)[1]; Mishra, D.[2]; Bjerregård Sneppen, T.[1]; Bastos da Silva Fanta, A.[1]; Kabliman, E.[2]; Mayr, P.[2]; Jinschek, J.[1]

11:30 AM | Lecture

Deep Learning Anomaly Detection in Directed Energy Deposition using Hyperspectral In-Situ Monitoring Data

Snyers, C. (Speaker)[1]; Ertveldt, J.[1]; Helsen, J.[1]

[1]Vrije Universiteit Brussel, Brussels (Belgium)

11:50 AM | Lecture

Assessment of Plasma Metal Deposition (PMD) for the manufacturing of magnesium alloys

Neubauer, E. (Speaker)[1]; Ariza, E.[2]

[1]RHP-TECHNOLOGY GMBH, Seibersdorf (Austria); [2]RHP Technology GmbH, Seibersdorf (Austria)

12:10 PM | Lecture

Development of β-phase strengthened Titanium alloy to achieve improved strength and ductility via laser processing

Mohanty, I. (Speaker)[1]; Misra, S.[1]; Kar, S.K.[1]; Saha, P.[1]

[1]Indian Institute of Technology Kharagpur, kharagpur (India)

12:30 PM | Lecture

Influence of wall thickness on the microstructure and mechanical behaviour of Ti6Al4V deposited using wire-fed directed energy deposition

Gonnabattula, A. (Speaker)[1]; Gnanavel, S.[1]; Vesangi, A.K.[2]; Kanjarla, A.K.[1]

[1]Indian Institute of Technology, Madras, Chennai (India); [2]Vikram

Room HZ 9

C: Processing

C06.02: Ceramic Processing I

10:30 AM | Lecture

Development of New Diamond-based composites with high entropy alloy binders

Liu, B. (Speaker)[1]; Feng, J.[2]; Liu, Y.[1]

[1]Central South University, Changsha (China); [2]Sino-Powder Superhard Materials Co., Zhengzhou (China)

10:50 AM | Lecture

Neat net shaping of ceramics by hybrid Additive Manufacturing & direct sintering

Neirinck, B. (Speaker)[1]; Hick, M.[1]; Erauw, J.-P.[2]

[1]Aerosint SA, Herstal (Belgium); [2]Belgian Ceramic Research Center, Mons (Belgium)

11:10 AM | Lecture online

Development of customized ceramic fibres and fibre interphases for CMC applications

Rüdinger, A. (Speaker)[1]; Glaser, L.[1]; Herborn, R.[1]; Vierhaus, P.[1]

[1]Fraunhofer Institute for Silicate Research ISC / Center HTL, Würzburg

11:30 AM | Lecture online

Application of Freeze Granulation Technique on Gas Atomized Powders to Reach Full Density through sintering and capsule-free hot isostatic pressing

Nagaram, A.B. (Speaker)[1]; Nyborg, L.[1]; Maistro, G.[2]; Cao, M.[2]; Adolfsson, E.[4]; Magnusson, H.[5]; Berglund, R.[3]; Oikonomou. C.[2]; Cao. Y.[1]:

11:50 AM | Lecture

Multi-directional freeze casting of porous ceramics

Zhai, W. (Speaker)[1]; Dong, X.[1]

[1]National University of Singapore

12:10 PM | Lecture

Thermal and thermomechanical properties of carbon reinforced Al and Al + Mg matrix composites

Silvain, J.-F. (Speaker)[1]; BAUDIER-PONS, M.[1]; Benjamin, T.[2]; Lacombe, G.[2]; Lu, Y.[3]; Paquin, Y.[4]; de Langlade, R.[4]

[1]ICMCB-CNRS, Pessac (France); [2]Minapack, Vezeronce Curtin

12:30 PM | Lecture

Core-Shell Structuring of Kaolinized Granite

Stojaković, M. (Speaker)[1]; Stević, D.[1]; Sukur, S.[1]; Salčin, E.[2]; Paraš, S.[1]; Mádai, F.[3]; Mádai, V.[3]; Gotovac Atlagić, S.[1]

[1]University of Banja Luka; [2]Ministry of Energy and Mining, Banja Luka (Bosnia and Herzegovina); [3]University of Miskolc, Miskolc-Egyetemváros (Hungary)

Room HZ 10

C: Processing

C05.05: Welding and Joining 2

10:30 AM | Lecture

Bending behaviour of hybrid aluminum-wood plates

Graf, E. (Speaker)[1]; Müller, U.[2]; Domitner, J.[1]; Sommitsch, C.[1]; Auer, P.[1]; Matz, P.[3]; Kurzböck, C.[3]; Krenke, T.[4]; Painer, J.[4]; Schönauer, T.[5]; Frieß, M.[5]; Gruber, L.[5]

[1]Graz University of Technology; [2]University of Natural Resources and Life Sciences Vienna,

10:50 AM | Lecture

Experimental study on the feasibility of joining plywood with steel using flow drill screws

Vitzthum, K. (Speaker)[1]

[1]W.E.I.Z. Forschungs & Entwicklungs gGmbH, Weiz (Austria)

11:10 AM | Lecture

Study on the reinforcement of load introduction points of sandwich structures using the TFP-technology

Geiger, M. (Speaker)[1]; Baumann, J.[2]; Marx, A.[1]; Schiebel, P.[1]

[1]Faserinstitut Bremen e.V.; [2]Universität Bremen

11:30 AM | Lecture

Influence of LPBF-parameters and heat treatment on machinability and chip formation of additively manufactured Ti-5Al-5Mo-5V-3Cr alloy

Worpenberg, S. (Speaker)[1]; Bergmann, B.[1]; Denkena, B.[1]; Hufenbach, J.[2]; Kunz, C.[2]; Kühn, U.[2]

[1]Leibniz University Hannover,

11:50 AM | Lecture

Influence of the cutting edge preparation on the residual stresses in the cutting edge area of PcBN and PCD tools

Breidenstein, B.[1]; Bergmann, B.[1]; Vogel, N. (Speaker)[1]

[1]Institute of Production Engineering and Machine Tools / Leibniz University Hannover

12:10 PM | Lecture

Influence of the input variables on the process data and process result during drilling Toolox33

Berndt, M. (Speaker)[1]

[1]Technische Universität Kaiserslautern

12:30 PM | Lecture

Die-sinking electrical discharge machining of nickel-based alloy with different tungsten carbide-cobalt grades

Bolz, R. (Speaker)[1]

[1]Fraunhofer Institute for Production Systems and Design Technology, Berlin

C10.07: Thermomechanical and subtractive material processing - Part 1

Room HZ 11

C: Processing

C11.02: Multi-Material Additive Manufacturing II

10:50 AM | Keynote Lecture

Multi-material additive manufacturing of hierarchical hybrid structures

Eckert, J. (Speaker)[1]

[1]Montanuniversität Leoben

11:30 AM | Lecture

Additive manufacturing of bimetallic composites

Filimonov, A. (Speaker)[1]

[1]Universität Bremen

11:50 AM | Lecture

Metallurgical challenges in laser powder bed fusion multi-material additive manufacturing

Hilhorst, A. (Speaker)[1]; Jacques, P.J.[1]; Jimenez, M.[2]; Li, X.[3]; Neirinck, B.[3]; Van der Rest, C.[1]

[1]UCLouvain, Ottignies-Louvain-la-Neuve (Belgium); [2]CRM Group, Liège (Belgium); [3]Aerosint, Herstal (Belgium)

12:10 PM | Lecture

Phase Evolution During Multi-Material Laser Powder-Bed Fusion via Operando Synchrotron X-Ray Diffraction

Özsoy, A. (Speaker)[1]; Van Petegem, S.[1]

[1]Paul Scherrer Institute, Villigen (Switzerland)

12:30 PM | Lecture

Multi-Material Additive Manufacturing" Process for 3-ton Methane Combustor Using Powder-based Direct Energy Deposition

Haller, H.-Z. (Speaker)[1]; Jang, J.[1]; Lim, B.[2]; Lim, J.[1]

[1]InssTek; [2]Korea Aerospace Research Institute, Daejeon (South Korea)

Room HZ 12

C: Processing

C05.03: Welding and Joining 1

10:30 AM | Highlight Lecture online

A novel crack-free and refined 2195-Ti/CeB6 composites prepared by laser powder bed fusion

Xi, L. (Speaker)[1]; Gu, D.[1]; Xu, J.[1]

[1]Nanjing University of Aeronautics and Astronautics

10:50 AM | Lecture

Phase formation in Inconel 625 during non-equilibrium solidification from undercooled liquid state.

Kaban, I. (Speaker)[1]; Kaban, V.[1]; Han, X.[1]; Nawer, J.[2]; Matson, D.M.[2]

[1]Leibniz Institute for Solid State and Materials Research Dresden; [2]Tufts University, Medford (United States)

11:10 AM | Lecture

Graphene and carbon nanotubes functionality in Sn-Ag-Cu solder alloy

Khodabakhshi, F. (Speaker)[1]; Khatibi, G.[2]

[1]University of Tehran; [2]Vienna University of Technology

11:30 AM | Lecture

Interface optimization for thermal residual stress reduction at laser-brazed ceramic-stainless steel joints for miniaturized energy sensors

Feng, J. (Speaker)[1]; Herrmann, M.[1]; Reinecke, A.-M.[1]; Hurtado, A.[1]

[1]Technische Universität Dresden

11:50 AM | Lecture

Cu-oxide nanoparticles for low-temperature sinter-bonding: in-situ synchrotron analysis of oxide reduction and sintering

Rheingans, B. (Speaker)[1]; Janczak-Rusch, J.[1]; Jeurgens, L.P.H.[1]

[1]Empa, Duebendorf (Switzerland)

12:10 PM | Lecture

Continuous joining of carbon fiber-reinforced LM-PAEK laminates with advanced laser in-situ joining

Pohl, E. (Speaker)[1]; Bleil, N.[1]; Langer, M.[1]; Lasagni, A.F.[2]; Rauscher, P.[1]

[1]Fraunhofer Institute for Material and Beam Technology IWS, Dresden; [2]Technische Universität Dresden

12:30 PM | Lecture

Characterization of the properties of heat-staked FLM-printed components

Kuettner, A. (Speaker)[1]

[1]Ostbayerische Technische Hochschule Regensburg (OTH)

Room HZ 14

C: Processing

G: Education, Strategy, and Technology Transfer

C06.04: Ceramic Processing III

10:30 AM | Lecture

Inkjet deposition of semi-hard magnetic cobalt ferrite coatings

Cervellera, F.[1]; Bernasconi, R. (Speaker)[1]; Maspero, F.[1]; Galassi, C.[1]; Magagnin, L.[1]; Lecis, N.F.M.[1]

[1]Politecnico di Milano

10:50 AM | Lecture

Elaboration of porous metallic powders by liquid metal dealloying

Lesage, L. (Speaker)[1]; Geslin, P.-A.[1]; Mary, N.[1]; Le Bourlot, C.[1]; Maire, E.[1]; Wada, T.[2]; Kato, H.[2]

[1]INSA Lyon, Villeurbanne (France); [2]Tohoku University, Sendai (Japan)

11:10 AM | Lecture

Powder metallurgy processing of FeCrAl ODS alloys with different Ti and V contents

Stasiak, T. (Speaker)[1]; Chrominski, W.[1]; Zielinski, M.[1]; Jagielski, J.[1]; Jasinski, J.[1]; Chmurzynski, W.[1]; Kurpaska, L.[1]; Chmielewski, M.[1]; Frelek-Kozak, M.[1]; Mulewska, K.[1]; Wilczopolska, M.[1]; Kowal, M.[1]

[1]National Centre for Nuclear

11:30 AM | Lecture

Gas atomization of copper and copper alloys: Analysis of the manufacturing routine and aging behavior of Cu-OFE, CuCr1Zr and CuNi2.5SiCr

von Lintel, H. (Speaker)[1]; Jahns, K.[2]; Krupp, U.[2]

[1]University of Applied Sciences Osnabrück; [2]IEHK Steel Institute, RWTH Aachen University

11:50 AM | Lecture online

Mechanical Properties of Metal Matrix Nanocomposites Produced by Powder Metallurgy

Carneiro, I.[1]; Simões, S. (Speaker)[1]

[1]DEMM/FEUP, Porto (Portugal)

12:10 PM | Lecture

New duplex composite stainless steels elaborated by powder metallurgy

Mvodo Eba, R. (Speaker)[1]

[1]Université de Bourgogne, Dijon (France)

Room HZ 1

Plenaries B: Structural Materials

Closing Ceremony

12:50 PM **I Lunch Break**
Lunch Area

Room HZ 2

B: Structural Materials

Room HZ 4

B: Structural Materials

Room HZ 5

B: Structural Materials

Room HZ 6

B: Structural Materials

Room HZ 7

H: Materials for Circularity and Sustainability

12:10 PM
Poster Session
Area A
Hörsaalzentrum
Lecture Hall Center
Foyer 3rd Floor

B07.11: Characterisation of composite materials

2:50 PM | Lecture
Detection of hidden Damages in Fibre Laminates using low-quality Transmission X-ray Imaging, X-ray Data Augmentation by Simulation, and Machine Learning
Bosse, S. (Speaker)[1]; Shah, C.[2]; von Hehl, A.[2]
[1]University of Bremen; [2]University of Siegen

3:10 PM | Lecture | online
Mesoscopic strain evolution during the tensile testing of a woven flax fiber composite
Fortese, G.[1]; Riva, E.[1]; Nicoletto, G. (Speaker)[1]
[1]Università di Parma

3:30 PM | Lecture | online
Friction Measurement on Fibers for the Filament Winding
Bergmann, B. (Speaker)[1]
[1]Leibniz-Institut für Verbundwerkstoffe GmbH, Kaiserslautern

3:50 PM | Lecture
Micromechanical modeling of ABS composite filament reinforced by iron oxide particles
Tungtrongpairoj, à. (Speaker)[1]; Doungkeaw, K.[1]; Suttipong, P.[1]
[1]King Mongkut's University of Technology North Bangkok

B07.12: Evaluation of service performance of steels

2:50 PM | Highlight Lecture
Towards High-Strength High-Damping Steels: A CALPHAD Assisted Alloy Design Study
Rackwitz, J. (Speaker)[1]; Tasan, C.[1]; Olson, G.[1]
[1]Massachusetts Institute of Technology, Cambridge (United States)

3:10 PM | Lecture
Liquid-metal embrittlement of an advanced high-strength-steel driven by segregation induced phase formation at grain boundaries
Ikeda, Y. (Speaker)[1]; Chakraborty, A.[2]; Darvishi-Kamachali, R.[3]; Ghassemi-Armaki, H.[4]; Maass, R.[3]; Ni, H.-C.[5]; Zuo, J.-M.[5]

3:30 PM | Lecture
Mechanical properties of press hardening steels: Influence of tempering and auto-tempering
Maissara, K. (Speaker)[1]; Forouzan, F.[1]; Forouzan, F.[2]; Åkerfeldt, P.[1]; Åkerström, P.[1]; Vuorinen, E.[1]; Antti, M.-L.[1]
[1]Lulea University of Technology; [2]Höganäs AB

3:50 PM | Lecture
Micromechanical and microstructural characterization of the cut edge damage of Complex-Phase and Dual-Phase steels for automotive applications: Nanoindentation maps and local residual stress measurement by FIB-DIC
Ortiz Membrado, L. (Speaker)[1]; Parareda, S.[2]

4:10 PM | Lecture | online
Mechanical properties of Cu/martensitic steel multilayered sheet with high strength - electrical conductivity balance
Kato, R. (Speaker)[1]; Koga, N.[1]; Watanabe, C.[1]
[1]Kanazawa University

B05.11: Additive Manufacturing of High-Entropy Alloys

2:50 PM | Highlight Lecture
Improvement of dynamic mechanical properties and its mechanisms of additive manufactured FCC-type high entropy alloys
Liu, B. (Speaker)[1]; Liu, Y.[1]; Wang, B.[1]; Li, J.[2]; Fang, Q.[2]
[1]Central South University, 长沙 (China); [2]Hunan University, 长沙 (China)

3:10 PM | Lecture
Designing and Synthesizing Oxidation Resistant Refractory High-Entropy Alloys (RHEAs) in the Al-Cr-Mo-Ta-Ti Material System by means of Laser Metal Deposition (LMD)
Kaspar, J. (Speaker)[1]; Gerdt, L.[1]; Grün, P.[1]; Leyens, C.[2]; Mittag, A.[1]; Zimmermann, M.[2]
[1]Fraunhofer Institute for Material

3:30 PM | Lecture
Strengthening and fracture mechanisms of a precipitation hardening high-entropy alloy fabricated by laser powder bed fusion
Liu, Z.-Y. (Speaker)[1]
[1]Shenzhen University

3:50 PM | Lecture
Design of Ti-rich High Entropy Alloys with TRIP Effect for Laser Additive Manufacturing
Zang, C. (Speaker)[1]; Gong, P.[2]; Rainforth, W.M.[3]; Rivera-Diaz-del-Castillo, P.[4]
[1]University of Southampton; [2]University of Newcastle; [3]University of Sheffield; [4]Univsersity of Southampton

4:10 PM | Lecture
Influence of powder bed fusion - laser beam parameters on microstructure and mechanical properties of a non-equiatomic metastable HEA
Nyborg, L. (Speaker)[1]; Anilkumar, V.[1]; Guo, S.[1]; Malladi, B.[1]
[1]Chalmers University of Technology, Göteborg (Sweden)

B01.11: Advanced Evaluations methods of steels

2:50 PM | Highlight Lecture
Classification of diffraction data of steels subjected to various heat treatments by machine learning algorithms
Gamsjäger, E. (Speaker)[1]; Wiessner, M.[2]
[1]Montanuniversität Leoben; [2]Anton Paar GmbH, Graz (Austria)

3:10 PM | Lecture
Atomistic simulation of the collective carbon motion during the martensite aging
Huang, L. (Speaker)[1]; Maugis, P.[2]
[1]CEA ISAS, Gif-sur-Yvette (France); [2]Aix-Marseille University

3:30 PM | Lecture
Analytic Electron Microscopy in Steels: From Microstructure Characterization to Phase Transformation Mechanisms
Wang, H. (Speaker)[1]; Somsen, C.[1]; Li, Y.[1]; Detemple, E.[2]
[1]Ruhr-Universität Bochum; [2]AG der Dillinger Hüttenwerke, Dillingen/Saar

3:50 PM | Lecture
Evolution of Dislocation Structure during Plastic Deformation in Lath Martensite of Low-Carbon Steel Observed by ECCI
Gong, S. (Speaker)[1]; Inoue, J.[2]
[1]The University of Tokyo; [2]the University of Tokyo

4:10 PM | Lecture
Influence of nitrogen on the microstructural evolutions upon tempering in a low alloyed steel investigated by in situ HEXRD and post mortem HRTEM
Costa Salazar, M. (Speaker)[1]; Denand, B.[1]; Denis, S.[1]; Geandier, G.[1]; Ghanbaja, J.[1]; Skiba, O.[2]; Teixeira, J.[1]
[1]Institut Jean Lamour, Nancy

B02.05: Titanium Alloys

2:30 PM | Lecture
Comparative study of the elastic and compressive properties of monomodal and bimodal porous copper fabricated via powder metallurgy technique
Ray, S. (Speaker)[1]; Jana, P.[1]; Kar, S.K.[1]; Roy, S.[1]
[1]Indian Institute of Technology Kharagpur, KHARAGPUR (India)

2:50 PM | Highlight Lecture | online
Twinning Induced dynamic recrystallization of CP-Ti during cryocompression
Chaudry, U. (Speaker)[1]; Jun, T.[1]
[1]Incheon National University, incheon (South Korea)

3:10 PM | Lecture
Critical assessment of the influence of porosity on the mechanical properties of beta-metastable titanium alloys
Dethier, S. (Speaker)[1]; Coffigniez, M.[1]; Jacques, P.J.[1]
[1]UCLouvain, Louvain-la-Neuve (Belgium)

3:30 PM | Lecture
Stress induced martensitic transformation during cold rolling of metastable Ti-5553 alloy
Arohi, A.C. (Speaker)[1]; Sen, I.[1]
[1]Indian Institute of Technology Kharagpur

3:50 PM | Lecture
Finite-strain micromechanical modeling of twin, dislocation and grain boundary interactions
Liu, C. (Speaker)[1]; Roters, F.[1]; Raabe, D.[1]
[1]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf

4:10 PM | Lecture
Electron beam dissimilar joining of titanium to aluminium
Śliwiński, P. (Speaker)[1]; Kopyściański, M.[2]
[1]Łukasiewicz - Górnośląski Instytut Technologiczny, Gliwice (Poland); [2]AGH University of Science and Technology, Kraków (Poland)

H10.05: Slag-metal Reactions

3:10 PM | Highlight Lecture | online
A Fundamental Understanding of Sustainability for Welding Flux towards High Heat Input Applications
Wang, C. (Speaker)[1]; Wang, Z.[1]; Tian, H.[1]
[1]Northeastern University, Shenyang (China)

3:30 PM | Lecture
Numerical Assessment of Slag Flow in the packed bed of SiC and Coke Particles in the Lower Part of Blast Furnace
Geleta, D.D. (Speaker)[1]
[1]Korea University, Seoul (South Korea)

3:50 PM | Lecture | online
Sustainable manganese ferroalloys production through the HAlMan process
Safarian, J. (Speaker)[1]
[1]Norwegian University of Science and Technology (NTNU), Trondheim (Norway)

4:10 PM | Lecture
Thermodynamics of MgO solubility in slags for pyrometallurgical treatment of spent LIB
Nam, S. (Speaker)[1]; Choi, J.[2]; PARK, J.[1]
[1]Hanyang University, Ansan (South Korea); [2]Research Institute of Industrial Science and Technology (RIST), Pohang (South Korea)

Room HZ 8

C: Processing

Room HZ 9

C: Processing

Room HZ 10

C: Processing

Room HZ 11

C: Processing

Room HZ 12

C: Processing

Room HZ 14

C: Processing
G: Education, Strategy, and Technology Transfer

12:10 PM
Poster Session
Area G
Hörsaalzentrum
Lecture Hall Center
Foyer 3rd Floor

12:50 PM **I Lunch Break**
Lunch Area

13:00 PM **I Panel**
G01.03: Panel-Discussion
Strategy Panel

C01.11: Modeling and Simulation in AM

2:50 PM | Highlight Lecture
Next generation of multi-physics process models for laser metal deposition guided by large-scale atomistic simulations and benchmark experiments
Turlo, V. (Speaker)[1]
[1]Empa - Swiss Federal Laboratories for Materials Science and Technology, Thun (Switzerland)

3:10 PM | Lecture
Machine learning meets laser powder bed fusion: material synthesis by design
Chernyavsky, D.[1]; Kononenko, D.[1]; Han, J.[2]; van den Brink, J.[1]; Hufenbach, J.K.[1]; Kosiba, K. (Speaker)[3]
[1]Leibniz Institute for Solid State and Materials Research Dresden e.V.; [2]Korea Institute of Industrial Technology, Incheon (South Korea);

3:30 PM | Lecture
Controlling Metal Additive Manufacturing using Time-dependent Magnetic Fields
Kao, A. (Speaker)[1]; Fan, X.[2]; Krastins, I.[3]; Lee, P.[2]; Pericleous, K.[1]; Soar, P.[1]; Tonry, C.[1]
[1]University of Greenwich, London (United Kingdom); [2]UCL, London (United Kingdom); [3]University of Latvia, Riga (Latvia)

3:50 PM | Lecture
The effect of process parameters on the residual stresses in additive manufactrued superalloys
Fisk, M. (Speaker)[1]
[1]Malmö University

4:10 PM | Lecture
The Thermo-Calc Additive Manufacturing Calculator: An integrated CALPHAD-based FEM tool
Jansson, A. (Speaker)[1]
[1]Thermo-Calc Software AB, Solna (Sweden)

C03.08: Thermomechanical and subtractive material processing - Part 2

2:50 PM | Lecture | online
Impact of build speed on pore characteristics of 316L stainless steel processed by powder bed fusion – laser beam
Gunnerek, R. (Speaker)[1]
[1]757201-7262, Göteborg (Sweden)

3:10 PM | Lecture
Mechanical and microstructural investigation on Cu-OFE prototypes to determine their optimal manufacturing strategy for CERN applications
Moros, A. (Speaker)[1]; Catalán Lasheras, N.[1]; Morales Sánchez, P.[1]; Motschmann, F.[1]; Perez Fontenla, A.T.[1]; Rodríguez Castro, E.[1]

3:30 PM | Lecture
Precise parallel processing of a magnetic shape memory alloy using PECM
Böttcher, F. (Speaker)[1]; Schneider, J.[1]; Edelmann, J.[1]; Ul Husnain, R.[2]
[1]Fraunhofer Institut für Werkzeugmaschinen und Umformtechnik IWU, Chemnitz; [2]Technische Universität Chemnitz

3:50 PM | Lecture | online
Observations on the machining of additively manufactured deterministic cellular structure through electrical discharge machining process
Singh, M. (Speaker)[1]; Gusain, S.[1]; Mishra, S.K.[1]; Calleja, A.[2]; Ramkumar, J.[1]; Lacalle, L.N.L.d.[3]
[1]Indian Institute of Technology

4:10 PM | Lecture
Catalytic action of natural clay on polyolefins during reactive processing
Saron, C. (Speaker)[1]; Ferreira da Silva, E.[1]; José de Andrade Junior, A.[1]
[1]University of São Paulo - USP, Lorena School of Engineering – EEL

C08.03: Ceramic Processing II

3:10 PM | Lecture
Accelerated Development of Novel Soft Magnetic Materials for Next Generation Electrical Machines
Tan, L.P. (Speaker)[1]; Ramanujan, R.V.[1]; Padhy, S.P.[1]; Tsakadze, Z.[1]; Teh, W.H.[2]; Chen, S.[2]; Lee, C.J.J.[2]; Wei, F.[2]; Tan, D.[2]; Chaudhary, V.[3]
[1]Nanyang Technological University, Singapore (Singapore); [2]Institute of

3:30 PM | Lecture
Nanocoated Copper Powder for Improved Offline and In-situ Absorption during Laser Power Bed Fusion
Cheng, K. (Speaker)[1]; Hooper, P.[1]
[1]Imperial College London, LONDON (United Kingdom)

3:50 PM | Lecture
Blacklight sintering of ferroelectric ceramics within a few seconds
Fulanovic, L. (Speaker)[1]; Scherer, M.[1]; Frömling, T.[1]; Porz, L.[1]; Rödel, J.[1]
[1]Technische Universität Darmstadt

4:10 PM | Lecture
Experiment informed phase field model of Yttria stabilized Zirconia
Poudel, S. (Speaker)[1]; Timofiejczuk, A.[1]; Bialas, O.[1]; Kunwar, A.[1]
[1]Silesian University of Technology, Gliwice (Poland)

C11.03: Multi-Material Additive Manufacturing III

2:50 PM | Highlight Lecture
Additive manufacturing of metal-polymer hybrid structures: challenges and current trends
Amancio, S. (Speaker)[1]
[1]Graz University of Technology

3:10 PM | Lecture | online
ZrC+TiC synergically reinforced aluminum matrix composites with micro/nanoscale reinforcements prepared by laser powder bed fusion
XI, L. (Speaker)[1]; Feng, L.[1]; GU, D.[1]
[1]Nanjing University of Aeronautics and Astronautics

3:30 PM | Lecture
Direct sintering of multi-material parts obtained using an Additive Manufacturing approach
Neirinck, B. (Speaker)[1]; Huang, S.[2]; Vleugels, J.[2]; Deillon, L.[3]; Bernet, M.[3]; Bambach, M.[3]
[1]Aerosint SA, Herstal (Belgium); [2]KULeuven; [3]ETH Zürich

3:50 PM | Lecture
A critical review of the additive manufacturing of layered Fe-Si composites for soft magnetic applications
Gargarella, P. (Speaker)[1]; Andreoli, A.[2]; Pinotti, V.[2]
[1]Federal University of Sao Carlos; [2]Federal University of São Carlos

4:10 PM | Lecture | online
Advances for the FDM additive manufacturing of PETG coatings and composites with AW 5182 aluminium
Guerrero-Vacas, G. (Speaker)[1]; Rodríguez-Alabanda, O. (Speaker)[2]
[1]University of Córdoba; [2]University of Córdoba

C05.04: Welding 3

2:50 PM | Lecture
Feasibility study on self-piercing riveting of aluminum alloy sheets with wood veneer plates
Domitner, J. (Speaker)[1]; Auer, P.[1]; Stippich, J.[1]; Graf, E.[1]; Vitzthum, K.[2]; Silvayeh, Z.[1]; Sommitsch, C.[1]; Krenke, T.[2]
[1]Graz University of Technology; [2]W.E.I.Z. Forschungs & Entwicklungs gGmbH, Weiz (Austria)

3:10 PM | Lecture
Evaluation on microstructural and mechanical properties of clad pipes of API X65 PSL II steel and Inconel 625 welded by orbital friction stir welding
Volff Amavisca, C. (Speaker)[1]; Bergmann, L.[2]; Dornelles Ramos, F.[3]; Reguly, A.[4]; Klusemann, B.[1]
[1]Leuphana University Lüneburg;

3:30 PM | Lecture
Metallurgical and Mechanical Properties of Friction Stir Welded Pure Titanium
Regev, M. (Speaker)[1]; Spigarelli, S.[2]
[1]Braude College, Karmiel (Israel); [2]DIISM, Università Politecnica delle Marche, Ancona (Italy)

3:50 PM | Lecture
Dissimilar metal TIG weld joints of multiple-principal element alloys (MPEA) to conventional austenitic steel 316L
Rhode, M. (Speaker)[1]; Erxleben, K.[1]; Richter, T.[1]; Schroepfer, D.[1]; Michael, T.[1]
[1]Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin

4:10 PM | Lecture
FEM silmulation of HFMI treatment on GMAW welds of S700MC steel
Lekkas, A. (Speaker)[1]; Zervaki, A. (Speaker)[2]
[1]National Technical University of Athens, ATHENS (Greece); [2]NATIONAL TECHNICAL UNIVERSITY OF ATHENS

C11.04: Multi-Material Additive Manufacturing IV

2:50 PM | Highlight Lecture | online
Coupling microstructure and topology to produce robust Inconel 718 lattices by additive manufacturing
Banait, S.[1]; Liu, C.[2]; Campos, M.[3]; Pham, M.-S.[2]; Perez-Prado, M.T. (Speaker)[1]
[1]IMDEA Materials Institute, Getafe (Spain); [2]Imperial College London; [3]Carlos III University, Madrid (Spain)

3:10 PM | Lecture
Negative thermal expansion behaviour of metallic metamaterials produced via multi-material L-PBF
Prestes, I. (Speaker)[1]; Buchmann, E.[1]; Höfer, P.[1]; Jägle, E.[1]
[1]Universität der Bundeswehr München, Neubiberg

3:30 PM | Lecture | online
Computational thermodynamic analysis applied to multicomponent alloy design of Functionally Graded Materials (FGM) and High Entropy Alloys (HEAs)
Valilla, J. (Speaker)[1]; Mohammadzadeh, A.[1]; Sabirov, I.[1]; Torralba, J.M.[1]; Tourret, D.[1]

3:50 PM | Lecture | online
MultiMat³ - Development of Materials and Material Combinations for Arburg Plastic Freeforming (APF) and Fused Filament Fabrication (FFF)
Kühnert, I. (Speaker)[1]; Labuschagné, J.[2]; Leuteritz, A.[1]; Oosthuizen, H.[1]; Schöne, E.[1]; Spörer, Y.[1]
[1]Leibniz-Institut fuer Polymerforschung Dresden e. V.

4:10 PM | Lecture
Development of Metal-Diamond Hybrid Composite through Powder Bed Fusion and Powder Metallurgy
Rahmani Ahranjani, R. (Speaker)[1]
[1]CiTin– Centro de Interface Tecnológico Industrial, Viana do Castelo (Portugal)

Room SH 0.101

D: Characterization and Modeling

D01.06: Light microscopy and neutron scattering

10:50 AM | Keynote Lecture
High-Resolution, High-Speed Digital Holographic Microscopy of Slip Band Formation in Iron
Guevara, J.A. (Speaker)[1]; Inoue, J.[1]
[1]The University of Tokyo, Kashiwa (Japan)

11:30 AM | Lecture
Resource quality control for rubber production and in-line analysis
AlSalka, Y. (Speaker)[1]; Schwabe, S.[1]; Geweke, J.[1]; Ctistis, G.[1]; Lenth, C.[1]; Schröder, P.[1]; Wackerbarth, H.[1]
[1]Institut für Nanophotonik Göttingen e. V.

D04.10: Modelling and data based approaches

11:50 AM | Lecture
A data-based approach to estimate small misorientations from Kikuchi patterns
Chauniyal, A. (Speaker)[1]; Stricker, M.[1]; Thome, P.[2]
[1]ICAMS, Bochum; [2]Institute of Materials, Bochum

12:10 PM | Lecture
Effect of tempering temperature on the strength of lath martensite in 15-5 PH stainless steel
Fischer, T. (Speaker)[1]; Zhou, T.[1]; Dahlberg, C.F.[1]; Hedström, P.[1]
[1]KTH Royal Institute of Technology, Stockholm (Sweden)

Room SH 0.105

D: Characterization and Modeling

D01.06: Light microscopy and neutron scattering

11:50 AM | Lecture
VULCAN: A new instrument type for nondestructive deep probing stress measurements
Birk, J.O. (Speaker)[1]; Bachmann, F.[2]; Jeppesen, H.B.[1]; Kharashvili, G.[3]; Lauridsen, E.[2]; Leemreize, H.[1]; Plewinski, F.[3]; Purushottam, R.[2]; Zangenberg, N.[1]
[1]Danish Technological Institute,

12:10 PM | Lecture
Investigation of hydrogen distribution in hybrid Ti-Mg implant materials using neutron tomography
Kumar, R.[1]; Haramus, V. (Speaker)[1]; Trtik, P.[2]; Limberg, W.[1]; Serdechnova, M.[1]; Blawert, C.[1]; Ebel, T.[1]; Willumeit-Römer, R.[1]
[1]Helmholtz Zentrum Hereon, Geesthacht; [2]Paul Scherrer

Room SH 0.106

D: Characterization and Modeling

D07.07: Oxides

10:50 AM | Lecture | online
DFT prediction of a new inversion boundary structure in Sb-doped ZnO
Ribić, V. (Speaker)[1]; Rečnik, A.[1]; Komelj, M.[1]; Kokalj, A.[1]; Branković, Z.[2]; Zlatović, M.[3]; Branković, G.[2]
[1]Jožef Stefan Institute, Ljubljana (Slovenia); [2]Institute for Multidisciplinary Research, Belgrade (Serbia); [3]Faculty of

11:10 AM | Lecture
Ab initio study of the photocatalytic nitrogen reduction reaction on Ru-TiO_2 clusters
Žibert, T. (Speaker)[1]; Huš, M.[1]; Likozar, B.[1]
[1]National Institute of Chemistry, Ljubljana (Slovenia)

11:30 AM | Lecture
Carbon Dioxide Capture with Carbon Nanotubes: A Molecular Simulation Study
Winarto, W. (Speaker)[1]; Brumby, P.[2]; Yasuoka, K.[2]
[1]Brawijaya University, Malang (Indonesia); [2]Keio University, Yokohama (Japan)

11:50 AM | Lecture | online
Insights into Carbon Dioxide Sorption and Dynamics in Ionic Liquids using Molecular Simulation
Karanasiou, K.[1]; Panou, M.[1]; Vergadou, N. (Speaker)[1]
[1]National Centre for Scientific Research "Demokritos", Athens (Greece)

12:10 PM | Highlight Lecture
New molecular models and methods for all-atom simulations of magnetic nanoparticles
Mahmood, A.U.[1]; Yingling, Y. (Speaker)[1]
[1]North Carolina State University, Raleigh (United States)

Room SH 0.107

D: Characterization and Modeling
H: Materials for Circularity and Sustainability

D10.07: Materials Modelling: Applications

10:50 AM | Highlight Lecture
Multiscale modelling of efficient thermoelectric devices
Music, D. (Speaker)[1]
[1]Malmö University

11:10 AM | Lecture
Quantum Annealing for Materials Science Modeling
Sandt, R. (Speaker)[1]; Le Bouar, Y.[2]; Spatschek, R.[1]
[1]Forschungszentrum Jülich GmbH; [2]Université Paris-Saclay, ONERA, CNRS, Châtillon (France)

11:30 AM | Lecture
Model-based Optimization of the Thermal in Laser-welding and Directed Energy Deposition (DED)
Sattari, M. (Speaker)[1]; Ebrahimi, A.[2]; Luckabauer, M.[1]; Römer, G.[1]
[1]University of Twente, Enschede (Netherlands); [2]Delft University of Technology

D10.08: Modeling of Stress-Strain and Swelling behavior

11:50 AM | Lecture
A Cellular Automaton – Finite Element Framework of Dynamic Recrystallization as A Constitutive Model for High Strain Rate Hot Deformation
Sakalkale, K. (Speaker)[1]; Karagadde, S.[1]
[1]Indian Institute of Technology Bombay, Mumbai (India)

12:10 PM | Lecture
Modeling of Bituminized Waste Products swelling behavior due to water uptake under confined conditions
Chen, Y. (Speaker)[1]; Champenois, J.-B.[2]; Dangla, P.[1]; Granet, S.[2]; Melot, G.[3]
[1]Navier, Ecole des Ponts, Univ Gustave Eiffel, CNRS, Marne la Vallée (France); [2]CEA, DES, ISEC, DPME, Univ Montpellier, Marcoule

Room SH 0.109

D: Characterization and Modeling

D08.07: Materials Data Platforms: General Aspects

10:50 AM | Lecture
Materials Data Repository metadata schema and cross-database federation
Matsuda, A. (Speaker)[1]; Tanabe, K.[1]; Ishii, M.[1]; Kadohira, T.[1]
[1]National Institute for Materials Science, Tsukuba (Japan)

11:10 AM | Lecture
From text data to word embeddings in Materials Science
Zhang, L. (Speaker)[1]; Stricker, M.[1]
[1]Ruhr University Bochum

11:30 AM | Lecture
The Open Translation Environment: Automated and modular pipelines for semantic interoperability to open simulation platforms
Büschelberger, M. (Speaker)[1]; Lønstad Bleken, F.[2]; Gouttebroze, S.[2]; Wiik, K.[2]; Friis, J.[2]; Nahshon, Y.[1]; Helm, D.[1]
[1]Fraunhofer Institute for Mechanics

11:50 AM | Lecture
OpenSemanticLab: A Reference Implementation for Open Semantic Materials Research
Stier, S. (Speaker)[1]; Gold, L.[1]; Popp, M.[1]; Räder, A.[1]; Triol, A.[1]
[1]Fraunhofer Institute for Silicate Research ISC, Würzburg

12:10 PM | Lecture
DICE: NIMS data platform for Materials Science and Engineering
Kadohira, T. (Speaker)[1]; Yoshikawa, H.[1]; Fujima, J.[1]; Matsuda, A.[1]; Fujiwara, Y.[1]; Minamoto, S.[1]; Demura, M.[1]
[1]National Institute for Materials Science, Tsukuba (Japan)

12:10 PM I Lunch Break
Lunch Area

12:10 PM
Poster Session
Area A
Hörsaalzentrum
Lecture Hall Center
Foyer 3rd Floor

Room SH 1.101

A: Functional Materials

A01.02: Modelling and structural engineering of 2D materials

10:30 AM | Keynote Lecture
2D Magnetic Membranes in Motion
van der Zant, H. (Speaker)[1]
[1]Delft University of Technology

11:10 AM | Highlight Lecture
Modeling the group-IV induced proximity effects on epitaxial graphene
Gemming, S. (Speaker)[1]; Peña Unigarro, A.D.[1]; Ghosal, C.[1]; Tegenkamp, C.[1]; Seemann, L.[1]; Stopp, S.[1]; Hentschel, M.[1]
[1]TU Chemnitz

11:30 AM | Lecture
Fine tuning 2D transition metal (MXene) thin films properties using ion irradiation
Benmoumen, A. (Speaker)[1]; David, M.-L.[1]; Gautron, E.[2]; Hurand, S.[1]; Célérier, S.[3]; Loupias, L.[1]; Tangui, S.[1]; Moreau, P.[4]; Mauchamp, V.[1]
[1]Université de Poitiers; [2]Jean Rouxel Institute of Materials in Nantes; [3]CNRS, Poitiers (France);

11:50 AM | Lecture | online
Synthesis and characterization of two-dimensional MXenes using nanostructured ternary MAX-phase thin films prepared by magnetron sputtering as precursors
Torres, C.E.[1]; Eggert, L.[2]; Miranda, M.[2]; Quispe, R.[1]; Calderon, N.Z.[1]; Camargo, M.K.[1]; Bund, A.[2]; Schaaf, P.[2];

12:10 PM | Lecture
Rational linker design for two-dimensional sulfide/metal oxide hybrids
Hofer, M. (Speaker)[1]; Hensgen, L.[2]; Myakala, S.[1]; Cherevan, A.[1]; Eder, D.[1]; Bayer, B.C.[1]
[1]Technische Universität Wien (TU Wien), Vienna (Austria); [2]Tribotecc GmbH, Arnoldstein (Austria)

12:30 PM | Lecture
Controlled orientation of hexagonal boron nitride platelets for directed high thermal conductivity
He, H. (Speaker)[1]; Le Ferrand, H.[1]
[1]Nanyang Technological University, Singapore (Singapore)

Room SH 1.104

A: Functional Materials

A06.04: Functional Catalytic and Nanoporous Materials-4

10:50 AM | Highlight Lecture
Size-Controlled Synthesis of Hairy Conjugated Microporous Polymer Nanoparticles via Dispersion Polymerization and Their Size-Dependent Photocatalytic Reactivity
Kim, S. (Speaker)[1]; Landfester, K.[1]; Ferguson, C.[1]
[1]Max Planck Institute for Polymer Research, Mainz

11:10 AM | Lecture
Role of Ca doping in the activity and stability of LaCoO3 nanoparticle electrocatalysts towards oxygen evolution reaction
Bai, F. (Speaker)[1]; Li, T.[1]
[1]Ruhr University Bochum

11:30 AM | Lecture | online
Synergistic electrochemical reduction of nitrates to ammonia with Cu/Ti-based materials
Chavez, M. (Speaker)[1]; Biset, M.[1]; Morante, J.R.[1]; Murcia, S.[2]
[1]Catalonia Institute for Energy Research, Barcelona (Spain); [2]Catalonia Institut for Energy Research (IREC), Sant Adrià del Besòs (Spain)

11:50 AM | Lecture
Al-Ni-Fe melt-spun alloys for catalytic application
Zięba, A. (Speaker)[1]; Stan-Głowińska, K.[1]; Duraczyńska, D.[2]; Rogal, Ł.[1]; Lityńska-Dobrzyńska, L.[1]
[1]Institute of Metallurgy and Materials Science Polish Academy of Sciences, Kraków (Poland); [2]Institute of Catalysis and Surface Chemistry Polish Academy of

12:10 PM | Lecture
Structure and properties of zeolites synthesized from 2:1 illite clay for phenol decomposition in contaminated solutions
Randers, M. (Speaker)[1]; Rundans, M.[1]; Sedmale, G.[1]
[1]Riga Technical University

12:10 PM
Poster Session
Area G
Hörsaalzentrum
Lecture Hall Center
Foyer 3rd Floor

Room SH 1.105

A: Functional Materials

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A06.04: Materials for energy applications

11:30 AM | Highlight Lecture | online
Application of phase change materials for versatile optical components
Shurvinton, R.[1]; Lemarchand, F.[1]; Moreau, A.[1]; Lumeau, J. (Speaker)[1]
[1]Institut Fresnel, Marseille (France)

11:50 AM | Lecture | online
Enhancement methods of magnetocaloric properties for near room temperature applications
Lee, A.-Y. (Speaker)[1]; Kang, K.H.[1]; Chung, K.C.[1]; Lee, M.-H.[2]; Kim, J.-W.[1]
[1]Korea Institute of Materials Science, Changwon-si (South Korea); [2]Korea Institute of Industrial Technology, Incheon (South Korea)

12:10 PM | Lecture
Al-Si-Sn based alloys as composite phase change materials for thermal energy storage applications: microstructural features and thermal response
Molteni, M. (Speaker)[1]; Bassani, P.[2]; Garibaldi, E.[1]
[1]Politecnico di Milano; [2]CNR, Lecco (Italy)

Room SH 1.106

A: Functional Materials

A03.04: Spectroscopy and diffraction for nanomaterials

10:50 AM | Keynote Lecture | online
Operando Insight into Interfacial Catalytic Processes in Energy Conversion
Roldan Cueanya, B. (Speaker)[1]
[1]Fritz-Haber-Institut der Max Planck Gesellschaft, Berlin

11:30 AM | Lecture
4D evolution of the nanoporous sintered Ag on a Cu substrate during thermal aging
Milhet, X. (Speaker)[1]; Colin, J.[1]; N'Tsoaglo, K.[1]; Signor, L.[1]
[1]Prime Institute, Chasseneuil - Futuroscope (France)

11:50 AM | Lecture
Temperature-resolved vibrational disorder effects on the EXAFS signal of solid catalysts with different metal aggregation degrees
Henao, W. (Speaker)[1]; Agostini, G.[2]; López-Luque, I.[1]; Prieto, G.[1]
[1]Instituto de Tecnología Química (ITQ), CSIC-UPV, Valencia (Spain); [2]ALBA-CELLS Synchrotron Light

12:10 PM | Lecture
Analysis of the Photoluminescence properties of Dy3+-doped CdS Q-dots dispersed in borosilicate glass
Kumi-Barimah, E. (Speaker)[1]; Al-Murish, M.[1]; Jha, A.[1]; Liu, Y.[1]
[1]University of Leeds

Room SH 1.107

A: Functional Materials

A02.04: Metallic Nanostructures I

10:30 AM | Highlight Lecture
Functional 3D Network Structures by Effective Assembly of 1D and 2D Nanomaterials
Schütt, F. (Speaker)[1]
[1]Kiel University

11:10 AM | Highlight Lecture
Metallic nanowires assembled by DNA Origami
Erbe, A. (Speaker)[1]; Chennur, M.[1]; Kielar, C.[1]; Rodriguez-Barea, B.[1]; Ruiz, D.[2]; Samano, E.[2]; Seidel, R.[3]
[1]Helmholtz-Zentrum Dresden-Rossendorf; [2]UNAM, Ensenada (Mexico); [3]Universität Leipzig

11:50 AM | Lecture
Tin-based phases engineering on planar and nanostructured silicon surfaces
Liu, P.[1]; Schleusener, A.[1]; Lippmann, S.[2]; Zieger, G.[1]; van Spronsen, M.[3]; Turishchev, S.[4]; Sivakov, V. (Speaker)[5]
[1]Leibniz Institute of Photonic Technology, Jena; [2]Friedrich Schiller University Jena; [3]Diamond

12:10 PM | Lecture
Electrochemical properties of electrodeposited 3-dimensional Au1-xAgx alloy nanowire networks
Li, M. (Speaker)[1]; Moreno Fernandez, H.A.[2]; Schubert, I.[1]; Sigle, W.[3]; Toimil Molares, M.E.[1]; Trautmann, C.[1]; Ulrich, N.[1]
[1]GSI Helmholtz Centre for Heavy Ion Research, Darmstadt;

Room SH 1.108

A: Functional Materials

A08.01: Session 01

10:50 AM | Highlight Lecture
Field induced oxygen vacancy migration in anatase thin films
Knez, D. (Speaker)[1]
[1]Graz University of Technology

11:10 AM | Lecture
Effect of thermal induced strain on electrical properties off-stoichiometric Cu2/3Cr4/3O2 delafossite
Moreira, M. (Speaker)[1]
[1]Luxembourg Institute of Science and Technology, Belvaux (Luxembourg)

11:30 AM | Lecture
Fast growth of Zr-ZrO2 core-shell composites by Joule resistive heating
Ramos Justicia, J.F.[1]; Ballester, J.L.[1]; Urbieta, A.[1]; Fernández Sánchez, P. (Speaker)[2]
[1]University Complutense, Madrid (Spain); [2]Universidad Complutense de Madrid

11:50 AM | Lecture
Growth and structural characterization of h-LuMnO3 thin films deposited by MOCVD
A. Bassou, A. (Speaker)[1]; Fernandes, J.[1]; Figueiras, F.[2]; Tavares, P.[1]
[1]Universidade de Trás-os-Montes e Alto Douro, Vila Real (Portugal); [2]Fac. Ciências da Univ. Porto

12:10 PM | Lecture
Small Electron Polaron Formation and Competing Adiabatic vs Non-adiabatic Transport in TaON
Dey, M. (Speaker)[1]; Singh, A.K.[1]; Singh, A.[1]
[1]Indian Institute of Science, Bangalore (India)

12:10 PM I Lunch Break
Lunch Area

Room SH 0.101

D: Characterization and Modeling

D04.11: New Experimental Approaches at the Micron Scale

2:10 PM | Highlight Lecture
Precise modulus determination on micron-scaled cantilevers using a dynamic resonance shift technique
Alfreider, M. (Speaker)[1]; Hohenwarter, A.[1]; Kiener, D.[1]; Meindlhumer, M.[1]
[1]Montanuniversität Leoben

2:30 PM | Lecture
Novel micromechanical test strategies of on-chip interconnect stack structures including FEM modelling
Weitz, S. (Speaker)[1]; Clausner, A.[1]; Jost, B.[1]; Zschech, E.[2]
[1]Fraunhofer IKTS, Dresden; [2]deepXscan GmbH, Dresden

2:50 PM | Lecture
A 'quasi-2D' integrated experimental-numerical approach to high-fidelity mechanical analysis of metallic microstructures
Vermeij, T. (Speaker)[1]; Wijnen, J.[1]; Peerlings, R.[1]; Geers, M.[1]; Hoefnagels, J.[1]
[1]Eindhoven University of Technology

3:10 PM | Lecture
Room temperature viscous flow of micon scale amorphous silica induced by electron beam irradiation
Bruns, S. (Speaker)[1]; Minnert, C.[1]; Pethö, L.[2]; Michler, J.[2]; Durst, K.[1]
[1]Technische Universität Darmstadt; [2]EMPA, Thun (Switzerland)

3:30 PM | Lecture
Non-destructive mechanical characterization of coatings and surfaces up to 600°C using a new AlN sensor for surface acoustic wave spectroscopy
Makowski, S. (Speaker)[1]; Zawischa, M.[2]; Hoang, T.-T.[2]; Barth, S.[3]; Schettler, S.[2]; Schneider, D.[2]; Weihnacht, V.[2]

3:50 PM | Lecture
Nanoindentation using SMART and SMART CUBES for non-ambient conditions
Bedorf, D. (Speaker)[1]; Habor, D.[1]; Knieps, M.[1]; Stein, W.[1]
[1]SURFACE nanometrology, Hückelhoven

Room SH 0.105

D: Characterization and Modeling

D01.07: Novel image data processing and analysis routines

2:10 PM | Lecture
Identification of dislocation structures in experimental Laue microdiffraction patterns
Udofia, B. (Speaker)[1]
[1]Ruhr-Universität Bochum

2:30 PM | Lecture
Live ptychography
Weber, D. (Speaker)[1]; Müller, E.[2]; Dunin-Borkowski, R.E.[1]; Bangun, A.[1]; Clausen, A.[1]; Ehrig, S.[3]; Schropp, A.[4]; Achilles, S.[4]; Poghosyan, E.[2]; Bussmann, M.[3]; Hoffmann, N.[3]
[1]Forschungszentrum Jülich GmbH; [2]Paul-Scherrer-Institut, Villigen (Switzerland); [3]Helmholtz-Zentrum Dresden-Rossendorf; [4]DESY,

2:50 PM | Lecture
LiberTEM-live: High-performance live data processing
Clausen, A. (Speaker)[1]; Bryan, M.[2]; Dunin-Borkowski, R.E.[1]; Weber, D.[1]
[1]Forschungszentrum Jülich GmbH, Grenoble (France); [2]CEA-LETI, Grenoble (France)

Room SH 0.106

D: Characterization and Modeling

D04.12: Soft Matter & Special Applications

2:10 PM | Lecture
In-situ TEM study and nanomechanical characterization on two-dimensional covalent organic frameworks
Bowen, Z. (Speaker)[1]
[1]Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Dresden

2:30 PM | Lecture
Network approach for the analysis of the irreversible deformation of ductile solids containing porosities
Andriollo, T. (Speaker)[1]; Kouznetsova, V.[2]; Alessandretti, L.[3]
[1]Aarhus University; [2]Eindhoven University of Technology; [3]Technical University of Denmark, Kgs. Lyngby (Denmark)

2:50 PM | Lecture
On the influence of the adhesive layer in elastomer reinforcing textile cords deformation mechanism
Auteri, G. (Speaker)[1]
[1]CentraleSupélec, Gif-sur-Yvette (France)

3:10 PM | Lecture
Micro-Mechanical Analysis of Bio Inspired Interphases in Fiber Reinforced Polymer- and Concrete Composites
Utech, T. (Speaker)[1]; Scheffler, C.[2]
[1]Leibniz Institute of Polymer Research Dresden (IPF); [2]Leibniz-Institut für Polymerforschung Dresden e.V.

3:30 PM | Lecture
Stiffness, strength and fracture toughness estimation of graphene sheets and carbon nanotubes
Hwu, C. (Speaker)[1]; Yeh, Y.K.[1]
[1]National Cheng Kung University, Tainan (Taiwan)

3:50 PM | Lecture
Cu-based thin foils for healthcare: correlation among microstructure, mechanical and antiviral properties
Lorenzetti, L. (Speaker)[1]; Bernardi, E.[1]; Brandolini, M.[2]; Chiavari, C.[1]; Corniani, E.[3]; Galliani, G.[4]; Gatti, G.[2]; Hähner, P.[3]; Martini, C.[1]; Sambri, V.[2]
[1]University of Bologna; [2]The Great

Room SH 0.107

D: Characterization and Modeling
H: Materials for Circularity and Sustainability

H03.02: Recycling of composite materials from batteries, fuel cells and integrated electronics

2:10 PM | Keynote Lecture
Recovery of metallic resources from end-of-life solid oxide cell stacks
Lastam, J. (Speaker)[1]; Sergeev, D.[1]; Müller, M.[1]; Schwaiger, R.[1]
[1]Forschungszentrum Jülich

2:50 PM | Lecture
Rotatory drum electrode for electrochemical recycling of composite materials
Khadse, H. (Speaker)[1]; Choi, B.-K.[2]; D'Souza, A.[2]; Beck, G.[2]
[1]SRH Berlin University Applied Science; [2]SRH Berlin University of Applied Sciences

3:10 PM | Lecture
Recycling of Integrated Electronics using Polymer Separation Layers
Brasse, Y. (Speaker)[1]; Laguna-Moreno, M.[1]; Grözinger, T.[2]; Horter, T.[2]; Janek, F.[2]; Emmerechts, C.[3]; Clanet, J.-M.[4]; Grymonprez, B.[4]; Kraus, T.[1]
[1]INM Leibniz Institute for New Materials, Saarbrücken; [2]Hahn-

Room SH 0.109

D: Characterization and Modeling

D03.08: Interoperability, Advanced Materials, Manufacturing

2:10 PM | Lecture
Towards an efficient description of graphene-based macromaterials
Fuchs, F. (Speaker)[1]; Niemann, L.[2]; Rothe, T.[1]; Stoll, M.[3]; Köhne, M.[2]; Schuster, J.[1]
[1]Fraunhofer Institute for Electronic Nano Systems ENAS, Chemnitz; [2]Robert Bosch GmbH, Renningen; [3]Chemnitz University of Technology

2:30 PM | Lecture
ReaxPro Famework: Towards interoperable workflows for catalytic materials and reactive processes
Francisco Morgado, J.[1]; Büschelberger, M. (Speaker)[1]; Kumaraswamy, K.[1]; Lopez-Tarifa, P.[2]; Aguirre, N.[3]; Helm, D.[1]
[1]Fraunhofer Institute for Mechanics of Materials IWM, Freiburg im

2:50 PM | Lecture
Ontology-based material data management in additive manufacturing domain
Bjarsch, T. (Speaker)[1]; Beinersdorf, H.[2]; Drechsler, K.[3]; Reimann, J.[4]
[1]Fraunhofer IGCV, Augsburg; [2]MFPA Weimar; [3]TU München, Munich; [4]TU Ilmenau

3:10 PM | Lecture
Materials Modelling MarketPlace platform demonstrated by a use case for Additive Manufacturing of Super-Alloys
Nahshon, Y. (Speaker)[1]; Bierwisch, C.[1]; Hagelien, T.[2]; Helm, D.[1]; Koschmieder, L.[3]; Sowa, R.[4]; de Andres, P.[1]
[1]Fraunhofer Institute for Mechanics of Materials IWM, Freiburg im

3:30 PM | Lecture
Everything in motion and nothing stops – Deep Dive into the pultrusion process
Bader, E.R. (Speaker)[1]; Löpitz, D.[2]
[1]Fraunhofer Institute for Machine Tools and Forming Technology, Chemnitz; [2]Fraunhofer Institut for Machine Tools and Forming Technologies, Chemnitz

Room SH 1.101

A: Functional Materials

A01.03: Large-area preparation and application of 2D materials

2:10 PM | Highlight Lecture | online
Nanofluidics in nanolaminate membranes based on two-dimensional materials
Voiry, D. (Speaker)[1]
[1]University of Montpellier

2:30 PM | Lecture
Printing novel 2D sulfides as catalysts for electrochemical water splitting
Baumgartner, B. (Speaker)[1]; Hofer, M.[1]; Nastran, M.[1]; Iervolino, F.[2]; Apaydin, D.[1]; Eder, D.[1]; Bayer, B.[1]
[1]TU Wien; [2]Politecnico Milano

2:50 PM | Lecture
High-yield liquid phase exfoliated graphene utilizing low boiling co-solvent solutions and ammonia
Nastran, M. (Speaker)[1]; Eder, D.[1]; Bayer-Skoff, B.[1]; Peschek, P.[1]; Valenzik, I.[2]; Rath, J.[1]; Fickl, B.[1]; Schubert, J.[1]; Szabo, G.[1]; Wilhelm, R.A.[1]; Schmidt, J.[3]
[1]Technische Universität Wien,

3:10 PM | Lecture
Predicting exfoliation of MXenes via ab-initio thermodynamics
Malik, A.M. (Speaker)[1]
[1]Technical University of Darmstadt

3:30 PM | Lecture
Scalable Chemical Vapour Deposition of Monolayer Graphene Films on Iron
Fickl, B. (Speaker)[1]; Artner, W.[1]; Zhang, D.[2]; Dipolt, C.[3]; Bayer, B.[1]; Eder, D.[1]
[1]Technische Universität Wien, Vienna (Austria); [2]Shanghai University; [3]RÜBIG Technologie GmbH & CO KG, Wels (Austria)

3:50 PM | Lecture
Metal Catalyst-free CVD-grown Single-Layer Graphene on c-Plane Sapphire
Wang, Z. (Speaker)[1]
[1]PGI-7, Jülich

4:10 PM | Lecture
Impact of Epitaxial High-κ Dielectric Gd2O3 on Optical Properties of MoSe2 Monolayer
Ghosh, K. (Speaker)[1]; Dhara, A.[1]; Dhara, S.[1]; Fissel, A.[2]; Osten, H.-J.[2]; Roy Chaudhuri, A.[1]
[1]Indian Institute of Technology, Kharagpur; [2]Leibniz University, Hannover

Room SH 1.104

A: Functional Materials

A05.05: Functional Catalytic and Nanoporous Materials-S

2:10 PM | Highlight Lecture
Spatiotemporal operando spectroscopy elucidating the role of support material in the case of NOx reduction using hydrocarbon
Gholkar, P. (Speaker)[1]; Hayashi, T.[2]; Kinoshita, Y.[2]; Muramoto, K.[2]; Nguyen, H.[3]; Urakawa, A.[1]
[1]Delft University of Technology; [2]Toyota motor Corporation, Japan

2:30 PM | Lecture
Electrochemical applications of biomass-derived mesoporous carbons: From water treatment to fuel cells
Sirés, I. (Speaker)[1]; Lanzalaco, S.[2]; Cabot, P.L.[1]; Durante, C.[3]
[1]Universitat de Barcelona; [2]Universitat Politècnica de Catalunya, Barcelona (Spain); [3]University of Padua, Padova

2:50 PM | Lecture | online
Functional mesoporous silica for the immobilization of the polyphenol oxidase AbPPO4: towards mimicking key enzymatic processes in peat soils
Iriarte Mesa, C. (Speaker)[1]; Pretzler, M.[1]; von Baeckmann, C.[2]; Kählig, H.[1]; Rompel, A.[1]; Kleitz, F.[1]
[1]University of Vienna; [2]Universitat

3:10 PM | Lecture
Nickel and iron modified perovskites for chemical looping partial oxidation of methane
Guy, M. (Speaker)[1]; Hu, W.[1]; Kousi, K.[2]; Neagu, D.[3]; Metcalfe, I.[1]
[1]Newcastle University; [2]University of Surrey; [3]University of Strathclyde

3:30 PM | Lecture
Quantitative Analysis of Individual Atoms in the Channels of Beryl
Knez, D. (Speaker)[1]
[1]Graz University of Technology

3:50 PM | Lecture | online
Synthesis and characterization of MOF/GO materials and applications
Martínez, E. (Speaker)[1]; Xuriguera, E.[1]; Andreu, T.[1]; Carrión, S.[2]; Segarra, M.[1]; Martínez, M.[1]
[1]Universitat de Barcelona; [2]Fundació Greennova, Barcelona (Spain)

Room SH 1.105

A: Functional Materials

A06.05: Energy Conversion Materials and Sensors

2:10 PM | Highlight Lecture
Thermoelectric materials and modules based on thermoplastic polymer-carbon nanotube composites
Krause, B. (Speaker)[1]; Pötschke, P.[1]
[1]Leibniz-Institut für Polymerforschung Dresden e.V.

2:30 PM | Lecture
Eumelanin-based radical dopants as a tool for thermoelectric performance enhancement of PEDOT:PSS
Pezzella, A. (Speaker)[1]; Esposito, R.[1]; Ferraiuolo, R.[1]; Maglione, M.G.[2]; Tassini, P.[2]; Vitiello, G.[1]; d'Errico, G.[1]
[1]University of Naples Federico II; [2]ENEA, Portici (Italy)

2:50 PM | Lecture
Performance of Thin Pd Films for Application in Hydrogen Gas Separation Membranes and Sensor Technology: The Effect of the Substrate and Morphology
Bottger, A. (Speaker)[1]; Verma, N.[1]; Delhez, R.[1]; van der Pers, N.[1]; Huizenga, R.[1]
[1]Delft university of Technology

3:10 PM | Lecture
Effects of Severe Plastic Deformation on Vanadium for Application in Hydrogen Gas Separation Membranes
Matsumoto, Y. (Speaker)[1]; Kimoto, Y.[2]; Sato, H.[3]
[1]National Institute of Technology, Oita College; [2]National Institute of Technology, Oita College (Now at Kyushu University); [3]Hydronext Inc., Oita (Japan)

3:30 PM | Highlight Lecture
Development chromogen materials for smart windows
Purans, J. (Speaker)[1]
[1]Institute of Solid State Physics University of Latvia

Room SH 1.106

A: Functional Materials

A03.05: Scanning microscopy and calorimetry methods for materials characterization

2:10 PM | Lecture
A study on microstructure and corrosion behaviour of Fe-based HVOF metallic glass coating for biomass fired power plant boiler
Kim, S.-Y. (Speaker)[1]; Lee, M.-H.[1]; Song, G.[2]; Lee, K.[3]; Han, J.[1]
[1]KITECH, INCHEON (South Korea); [2]Kongju university, CHEONAN

2:30 PM | Lecture | online
Accelerated aging of novel promising lead-free protective coatings for solar reflectors
Sanchez-Moreno, R. (Speaker)[1]; Sutter, F.[2]; Baghouil, S.[3]; Gehrig, C.[4]; Wiesinger, F.[2]; Schrade, E.[4]; Wette, J.[1]; Fernández-García, A.[1]
[1]Centro de Investigaciones Energéticas, Medioambientales y

2:50 PM | Lecture
Characterization of functional materials by in situ SEM electrical-nanoindentation
Boujrouf, C. (Speaker)[1]; Rusinowicz, M.[1]; Verdier, M.[1]; Iruela, S.[1]; Antoni-Zdziobek, A.[1]; Champion, Y.[1]; Parry, G.[1]; Braccini, M.[1]; Volpi, F.[1]
[1]Université Grenoble Alpes

3:10 PM | Lecture
Deformation infrared calorimetry and tensile tests in temperature gradient for characterization of superelastic NiTi
Heller, L. (Speaker)[1]; Alarcon, E.[1]
[1]Institute of Physics of the Czech Academy of Sciences, Prague (Czech Republic)

3:30 PM | Lecture | online
Materials Selection for Surface EVA Suit development
Chouard, Y.[1]; Gouyé, A.[1]; Delessert, C.[1]; Schmied, S.[2]; Schweins, M.[2]; Groemer, G.[3]; Oezdemir-Fritz, S.[3]; Das, S.[4]; Holynska, M. (Speaker)[4]
[1]COMEX, Marseille (France); [2]DITF, Denkendorf; [3]OeWF, Innsbruck (Austria); [4]ESA, Noordwijk (Netherlands)

3:50 PM | Lecture
Towards quantitative nanomechanical characterisation of embedded polymer powder for additive manufacturing
Li, Z. (Speaker)[1]; Brand, U.[1]
[1]Physikalisch-Technische Bundesanstalt, Braunschweig

Room SH 1.107

A: Functional Materials

A02.05: Metallic Nanostructures II and C-Containing Nanostructures

2:10 PM | Lecture
Effects of High Surfactant Concentrations on the Morphology and Structure of Grown Sb Nanowire Arrays in Etched Ion-Track Membranes
Wagner, M. (Speaker)[1]; Hsun Lin, K.[1]; Trautmann, C.[1]; Sigle, W.[2]; Toimil-Molares, M.E.[1]
[1]GSI Helmholtzzentrum für

2:30 PM | Lecture
Advanced synthesis strategies for cost-effective Nanoporous Gold from metastable Au33Fe67 alloy
Raj, D.[1]; Fiore, G.[1]; Scaglione, F.[1]; Rizzi, P. (Speaker)[1]
[1]University of Torino

2:50 PM | Lecture
Control of crystal morphologies by tuning thermodynamic conditions of chemical vapor transport-based growth in Fe–Si and Co–Si systems
Abdel-Haq, W. (Speaker)[1]; Froeschke, S.[2]; Burkhardt, U.[1]; Borrmann, H.[1]; Gooth, J.[3]
[1]Max Planck Institute for Chemical Physics of Solids, Dresden;

3:10 PM | Lecture
One-Step Synthesis of Dynamically Shaped Stiff Silicone Nanorods
Chen, K. (Speaker)[1]; Seeger, S.[1]
[1]University of Zurich, Zürich (Switzerland)

3:30 PM | Lecture | online
Synthesis process and mechanical, tribological and electro-tribological performance of Ti2AlC and Ti3AlC2 MAX phases thin films for applications as sliding electrical contacts
Quispe Dominguez, R. (Speaker)[1]
[1]Universidad Nacional de San Antonio Abad del Cusco

3:50 PM | Lecture
Conductive polymer nanowires synthetized through a templateless electrochemical route
Wang, D.[1]; Pillier, F.[1]; Cachet, H.[1]; Debiemme-Chouvy, C. (Speaker)[1]
[1]Sorbonne Université, CNRS, Paris (France)

4:10 PM | Lecture
Investigation of the piezoresistivity of PLA/CNT nanocomposite with an improved solvent-casting process
Zhang, Z. (Speaker)[1]; Li, Q.[1]; Tagarielli, V.[1]
[1]Imperial College London

Room SH 1.108

A: Functional Materials

A08.02: Session 02

2:10 PM | Highlight Lecture
Protection of NOx sensors from sulfur poisoning in glass furnaces by the optimization of "SO2 trap"
Naddour, C. (Speaker)[1]; Rieu, M.[1]; Boreave, A.[2]; Gil, S.[2]; Vernoux, P.[2]; Viricelle, J.P.[1]
[1]Mines Saint-Etienne; [2]Université Claude Bernard Lyon 1, Villeurbanne (France)

2:30 PM | Lecture | online
Revisiting the synthesis and optoelectronic characterization of AZO thin films
Enrique, L. (Speaker)[1]; Trevejo, J.[1]; Bravo, F.[1]; Lizárraga, K.[1]; Serquen, E.[1]; Perez, E.[1]; Llontop, P.[1]; Guerra, A.[1]
[1]Pontifical Catholic University of Peru, Lima (Peru)

2:50 PM | Lecture
Environmental applications of nano- and microstructures of ZnO doped with Ni and Ag
Gómez Muñoz, G.[1]; Sotillo, B.[1]; Urbieta, A.[1]; Fernández Sánchez, P. (Speaker)[2]
[1]University Complutense, Madrid (Spain); [2]Universidad Complutense de Madrid

3:10 PM | Lecture
Synthesis of high entropy oxide thin films by MOCVD and study of their transport properties
Raison, A. (Speaker)[1]; Dragoe, D.[1]; Dragoe, N.[1]; Prud'homme, N.[1]; Wang, W.[2]
[1]Université Paris-Saclay, Orsay (France); [2]Southern University of Science and Technology, Shenzhen (China)

3:30 PM | Lecture
Synthesis, processing and printability of oxide electroceramics for energy conversion and gas sensing applications
Zouridi, L. (Speaker)[1]; Gagaoudakis, E.[2]; Mantsiou, E.[2]; Sfakianou, A.[2]; Vourros, A.[3]; Garagounis, I.[4]; Kiriakou, V.[5]; Marnellos, G.E.[4]; Binas, V.[2]
[1]University of Crete, Heraklion

POSTER SESSION

Poster sessions are a central part of the FEMS EUROMAT congress, where researchers and innovators from around the globe share their groundbreaking research findings and network with industry leaders. They provide a unique opportunity to present your research and learn about the latest materials science and engineering advances.

Poster sessions will take place Monday through Thursday during the lunch break between 12:40 PM to 2:50 PM. Please meet the authors during that period at their posters.

Day	Area
Monday, 04 September	B: Structural Materials F: Materials for Healthcare
Tuesday, 05 September	C: Processing E: Energy and Transportation
Wednesday, 06 September	D: Characterization and Modeling H: Materials for Circularity and Sustainability
Thursday, 07 September	A: Functional Materials G: Education, Strategy, and Technology Transfer

Important Information for Poster Authors
All posters must be hung by 10:00 AM to 5:00 PM and taken down no later than 7:00 PM on the same day. Posters hanging beyond that time frame will be removed by our staff.

Poster prices
The best poster of each area will be awarded with € 300. The winners will be announced at the Closing Remarks (Hörsaalzentrum - Lecture Hall Center, Room HZ 1) on Thursday, 7 September, 4:30 PM.

A: Functional Materials

A01-52 - online - Glucose sensors based on MoS2 nanosheets working in Phosphate-buffered saline
Tran, M. (Speaker)[1]; Nguyen, H.[1]; Nguyen, H.[1]; Nguyen, T.[1]; Vu, P.[1]
[1]VinUniversity, Hanoi (Vietnam)

A01-130 - Synthesis and characterization of metal sulfide nanoribbons on graphene by self-assembly of inorganic ions
Zhang, X. (Speaker)[1]; Anggara, K.[1]; Srot, V.[1]; Wu, X.[1]; van Aken, P.A.[1]; Kern, K.[1]
[1]Max Planck Institute for Solid State Research, Stuttgart

A01-864 - Fabrication and Characterization of Electronic Devices from Wafer Scale Grown Single Layer Graphene and Few-Layer Hexagonal Boron Nitride
Eshete, Y. (Speaker)[1]; Daus, A.[2]; Hoffmann-Eifert, S.[1]; Wang, Z.[1]
[1]Forschungszentrum Jülich, Julich; [2]RWTH Aachen University

A01-936 - Up-scaling the synthesis of Graphene-based Aeromaterials by dry-chemical etching
Möller, M. (Speaker)[1]; Adelung, R.[1]; Reimers, A.[1]; Saure, L.[1]; Schütt, F.[1]
[1]Technical Faculty - Kiel University"

A01-1665 - online - Design of gradient structured materials by laser processing of amorphous metal alloys
Nykyruy, Y.[1]; Mudry, S.[1]; Plevachuk, Y. (Speaker)[1]
[1]Ivan Franko National University of Lviv

A01-1683 - online - Surface structure of ferrofluids on the base of eutectic melts
Shtablavyi, I.[1]; Plevachuk, Y. (Speaker)[1]; Kulyk, Y.[1]; Klepach, M.[1]; Mudry, S.[1]
[1]Ivan Franko National University of Lviv

A01-1889 - Energy-Harvesting, Self-Healing Sensor for Accurate Limb Motion and Respiratory Pattern Tracking
Meena, J.S.[1]; Khanh, T.D.[1]; Kim, J.-W. (Speaker)[1]
[1]Sungkyunkwan University, Suwon (South Korea)

A01-1907 - Fabrication of highly-efficient multifunctional Cs0.33WO3@g-C3N4 based nanocomposites immobilized in CF@ Rayon/PU Janus membranes for photothermal conversion, water evaporation, synergic photocatalysis and its practical application in wastewater treatment
Wu, C.M. (Speaker)[1]; Motora, K.G.[1]
[1]National Taiwan University of Science and Technology, Taipei (Taiwan)

A01-1912 - Manufacturing Pickleball Rackets with Sandwich Composite Construction and 3D Printing Core Layer
Chen, J.-C. (Speaker)[1]; Wu, C.-M.[2]
[1]Lee-Ming Institute of Technology, New Taipei (Taiwan); [2]National Taiwan University of Science and Technology, Taipei (Taiwan)

A01-1954 - Characterization of ultra-broadband fs-laser pulses using atomically thin WS2
Hernandez Rueda, J. (Speaker)[1]; Pérez-Benito, Ã.[1]; Martínez Maestro, L.[1]; Noordam, M.L.[2]; Kuipers, L.[2]; Weigand, R.[1]
[1]Universidad Complutense de Madrid; [2]Delft University of Technology

A01-1955 - Synthesis and Characterization of NiO, Mn-based Oxides and Spinel NiMn2O4 Micro- and Nanostructures Grown by a Vapor-solid Method
Torres, C. (Speaker)[1]
[1]Inter American University of Puerto Rico, Ponce (Puerto Rico)

A01-1956 - Study of SnO2/NiO micro and nanostructures grown by a vapor-solid method using different precursors
Rivera, I. (Speaker)[1]
[1]Inter American University of Puerto Rico, Bayamon (Puerto Rico)

A01-1972 - Properties of the PLA composites reinforced with copolymerized aramid nanofiber
Hyeon, J. (Speaker)[1]; Yu, G.C.[1]; Kang, E.H.[1]; Lee, S.G.[1]
[1]Chungnam National University, Daejeon (South Korea)

A01-2028 - New Functional Materials with Application on Modular Construction
Barros, A. (Speaker)[1]; Campanhã, D.[1]; Soares, J.[1]
[1]CeNTI, V.N. Famalicão (Portugal)

A02-583 - Lattice thermal expansion of as-grown bent GaAs nanowires due to optical excitation measured by X-ray pump probe experiment
Anjum, T. (Speaker)[1]
[1]Universität Siegen

A02-750 - Ge-Based Nanowires: Formation of Metastable Solid Solutions
Krause, V. (Speaker)[1]; Behrle, R.[2]; Seifner, M.[3]; Haverkort, J.[4]; Wagner, M.[1]; Sistani, M.[2]; Barth, S. (Speaker)[1]
[1]Goethe University Frankfurt, Frankfurt am Main; [2]TU Wien, Vienna (Austria); [3]Technical University of Denmark, Kongens Lyngby (Denmark); [4]Eindhoven University of Technology

A02-930 - Proximity-coupled Josephson-junction arrays by direct-write
Porrati, F. (Speaker)[1]
[1]Goethe University Frankfurt, Frankfurt am Main

A02-1010 - Hexagonal Ge grown on self-assisted GaAs nanowires in molecular beam epitaxy
Dudko, I. (Speaker)[1]; Chauvin, N.[1]; Penuelas, J.[1]; Dursap, T.[1]; Lamirand, A.D.[1]; Botella, C.[1]; Regreny, P.[1]; Danescu, A.[1]; Brottet, S.[1]; Bugnet, M.[2]; Walia, S.[3]
[1]Ecole Centrale de Lyon, Ecully (France); [2]INSA Lyon; [3]RMIT University, Melbourne (Australia)

A02-1017 - Compact custom PLD tools for in-situ and in-vacuo neutron and X-ray investigations
Dikaia, O. (Speaker)[1]; Goikhman, A.[2]; Grunin, A.[2]; Maksimova, K.[2]; Prokopovich, P.[2]
[1]KönigsSystems UG, Schenefeld; [2]Königssystems UG, Hamburg

A02-1494 - Formation kinetics and mechanical properties of gels of ultrathin gold nanowires
Curto, Y. (Speaker)[1]; Arora, S.[1]; González-García, L.[2]; Kraus, T.[2]; Niebuur, B.-J.[1]
[1]INM Leibniz Institute for New Materials, Saarbrücken; [2]Saarland University, Saarbrücken

A02-1596 - Computer simulation of physical and chemical characteristics of nanotubes formed from alkali metal and halogen
Istlyaup, A. (Speaker)[1]; Myasnikova, L.[1]
[1]K.Zhubanov Aktobe Regional University

A02-1758 - online - Shape-controlled Electrodeposition of Silver Nanoplates
Bräuer, P. (Speaker)[1]
[1]Technische Universität Darmstadt

A02-1871 - Compact custom PLD tools for in-situ and in-vacuo neutron and X-ray investigations
Maksimova, K.[1]; Grunin, A.[1]; Dikaia, O. (Speaker)[1]; Prokopovich, P.[1]; Goikhman, A.[1]
[1]Königssystems UG, Schenefeld

A02-1941 - Plasmonic nanoparticles growth in polymeric thin films in situ monitored by spectroscopic ellipsometry
En Naciri, A. (Speaker)[1]
[1]University of Lorraine, METZ (France)

A03-58 - Microstructure Evolution and Mechanical Response of Ti-Zr-Nb Shape Memory Alloy
Lin, C.-Y. (Speaker)[1]
[1]National Sun Yat-sen University (Taiwan)

A03-428 - Tailoring magneto-electric response of CoFe2O4-BaTiO3 nanoparticles for application in wireless neuromodulation
Milojkovic, A. (Speaker)[1]; Kumari, P.[1]; Kozielski, K.[1]
[1]Technical University Munich

A03-751 - The ion-beam sputtering deposited multilayers for experimental research by a synchrotron and neutron methods
Dikaia, O. (Speaker)[1]; Maksimova, K.[1]; Novikov, D.[2]; Smolentsev, G.[3]; Vorobiev, A.[4]; Goikhman, A.[1]
[1]Königssystems UG, Schenefeld; [2]DESY, Hamburg; [3]Paul Scherrer Institut, Villigen (Switzerland); [4]Uppsala University

A03-775 - Validating Texture and Lattice Strain Multiscale Models via In-situ Neutron Diffraction and Shear Tests
Polatidis, E. (Speaker)[1]; Capek, J.[2]; Upadhyay, M.[3]
[1]University of Patras; [2]Paul Scherrer Institute, Villigen (Switzerland); [3]Ecole Polytechnique, Paris (France)

A03-861 - Residual stress of TiAl(Si)N monolayers and multilayers: A comparative study of curvature, sin2ψ, and thermal stress calculation methods
de Souza Lamim, T. (Speaker)[1]; Martinez Martinez, D.[1]; Chemin, J.-B.[1]; Valle, N.[1]; Penoy, M.[2]; Useldinger, R.[2]; Bourgeois, L.[2]; Choquet, P.[1]
[1]Luxembourg Institute of Science & Technology - LIST, Esch-sur-Alzette (Luxembourg); [2]CERATIZIT Luxembourg, Mamer (Luxembourg)

A03-1254 - Combined process for fine and spherical Cu-Zr alloy particle preparation
Kim, S.-Y. (Speaker)[1]; Han, C.[1]
[1]KITECH - Korea Institute of Industrial Technology, INCHEON (South Korea)

A03-1255 - In-situ tungsten nano-particle synthesis and direct dispersion on tungsten spheroidized micro-powder
Kim, S.-Y. (Speaker)[1]; Han, C.[1]
[1]KITECH - Korea Institute of Industrial Technology, INCHEON (South Korea)

A03-1511 - Microstructure and mechanical properties of new Fe-based NCAT shape memory alloys
Czerny, M. (Speaker)[1]
[1]Polish Academy of Sciences, Kraków (Poland)

A03-1528 - Microstructure, martensitic transformation andmagneto-mechanical properties of Ni50-xMn25Ga25-yCoxCuy (x,y=1-6) melt-spun ribbons
Kowalska, M. (Speaker)[1]
[1]Polish Academy of Sciences, Kraków (Poland)

A03-1564 - Effect of ageing treatment on the antibacterial behaviour of cast stainless steels alloyed with Cu
Moreira, A.B. (Speaker)[1]; Mota, C.D.[2]; Freitas, F.[2]; Ferraz, M.P.[3]; Ribeiro, L.M.M.[1]; Vieira, M.F.[1]
[1]Faculty of Engineering of the University of Porto; LAETA/INEGI—Institute of Science and Innovation in Mechanical and Industrial Engineering; [2]Faculty of Engineering of the University of Porto; [3]Faculty of Engineering of the University of Porto; i3S—Instituto de Investigação e Inovação em Saúde—Associação, Universidade do Porto; INEB—Instituto de Engenharia Biomédica, Universidade do Porto

A03-1819 - Synthesis and Characterization of Environment friendly Na0.4K0.1Bi0.5TiO3 Ceramics for Multifunctional Applications
Varade, P. (Speaker)[1]; Kulkarni, A.[2]; N. Shara, S.[2]; Pandey, A.[2]; Venkataramani1, N.[2]
[1]Indian Institute of Technology Bombay, Mumbai (India); [2]Indian Institute of Technology-Bombay, Mumbai (India)

A03-1852 - The Materials Galaxy: A Social Network Analysis Approach to Uncovering Materials Properties
Jalali, M. (Speaker)[1]
[1]Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen

A03-1882 - Unraveling atomic structure details of rhombohedral twinning in antimony
Wang, H. (Speaker)[1]
[1]Ottignies-Louvain-la-Neuve

A03-1897 - High temperature wettability as a key parameter in the process of manufacturing metal matrix composites
Bigos, A. (Speaker)[1]; Szymanski, Ã.[2]; Sobczak, N.[3]; Sobczak, J.[2]; Tokarski, T.[2]; Maziarz, W.[3]; Olejnik, E.[2]; Chulist, R.[3]; Bruzda, G.[4]
[1]Polish Academy of Sciences, Krakow (Poland); [2]AGH University of Science and Technology in Cracow, Kraków (Poland); [3]Polish Academy of Science, Krakow (Poland); [4]Łukasiewicz Research Network, Krakow (Poland)

A03-1902 - Structural and electrical properties of KTN heterolayer thin films prepared by the chemical solutionl deposition
Lee, S. (Speaker)[1]; Lee, M.[1]; Lee, S.[1]; Park, B.[1]; Park, J.[2]
[1]Gyeongsang National University, Jinju (South Korea); [2]Korea Institute of Ceramic Engineering and Technology, Jinju (South Korea)

A03-1957 - Trapping, size characterization and photoluminescence of metallic and dielectric nanoparticles
Weigand, R.[1]; Martínez Maestro, L.[1]; Cabrera Granado, E.[1]; Antón-Revilla, M.[1]; van Oosten, D.[2]; Hernandez-Rueda, J. (Speaker)[1]
[1]Universidad Complutense de Madrid; [2]Universiteit Utrecht, Madrid (Spain)

A03-1959 - online - Interaction of different types of polyethylene and waxes as a binder system for the Metal Injection Molding process
Páez-Pavón, A. (Speaker)[1]; García-Galván, F.R.[1]; G. Merodio-Perea, R.[1]; Lado-Touriño, I.[1]
[1]Universidad Europea de Madrid, Villaviciosa de Odón (Spain)

A03-1982 - Structural and thermal characterization of Zr-based bulk metallic glasses via fast differential scanning calorimetry and synchrotron X-ray diffraction
Stanko, S. (Speaker)[1]; Schawe, J.[2]; Löffler, J.[1]
[1]ETH Zürich; [2]Mettler Toledo, Nänikon (Switzerland)

A03-1987 - Geometric effects along the bcc - hcp transformation path: the case of orthorhombic martensite in Ti alloys
Demakov, S.[1]; Kylosova, I.[1]; Stepanov, S.[1]; Bönisch, M. (Speaker)[2]
[1]Ural Federal University, Ekaterinburg (Russia); [2]KU Leuven

A03-1994 - SUPERPORE-X: Functionally graded porous Hastelloy-X nickel superalloy as a new class of materials for gas turbine seals applications
Bętkowska, A. (Speaker)[1]
[1]Lukasiewicz Research Network- Krakow Institute of Technology, Kraków (Poland)

A05-196 - Comparison of TiO2 immobilization techniques over a electro-spun fiber mat for photocatalytic applications
Sandua, X. (Speaker)[1]
[1]Public University of Navarre, Pamplona (Spain)

A05-226 - Influence of Saccharides on the Porosity of Hydroxyapatite for its Performance as a Catalyst
Brant de Campos, J. (Speaker)[1]; Cristina Vieira Barbaceli, A.[2]; Jose Moura, F.[3]; Sampaio Aguilar, M.[2]
[1]Rio de Janeiro State University; [2]Universidade Estácio de Sá, Rio de Janeiro (Brazil); [3]Pontifícia Universidade Catolica, Rio de Janeiro (Brazil)

A05-647 - Preparation of multi-composite nanoparticle based thin-films for gas sensing
Shaji, K. (Speaker)[1]
[1]University of West Bohemia, Plzen (Czech Republic)

A05-674 - Hybridizing liquid phase exfoliated 2D-sulfides with metal-organic frameworks for photocatalytic applications
Isufaj, N. (Speaker)[1]
[1]Technische Universität Wien

A05-689 - Partial substitution of 2-Methyl-Imidazol in ZIF-67
Narciso, J. (Speaker)[1]; Ramos-Fernández, E.[1]; Villalgordo-Hernández, D.[1]
[1]University of Alicante

A05-820 - Reaction kinetics studies of porous TiO2-based photocatalytic membranes produced by FFF
Ortega-Columbrans, P. (Speaker)[1]; Escribano, J.A.[2]; Ferrari, B.[3]; Sanchez-Herencia, A.J.[3]
[1]Spanish National Research Council (ICV-CSIC) & COLFEED4Print S.L., Madrid (Spain); [2]COLFEED4Print S.L., Madrid (Spain); [3]Spanish National Research Council (ICV-CSIC), Madrid (Spain)

A05-977 - Enabling methanol selectivity in MoS2 catalysts for CO2 hydrogenation: the role of the ZnO support
Andrade Silva Alves, G. (Speaker)[1]; Pacholik, G.[1]; Wagner, T.[1]; Föttinger, K.[1]
[1]TU Wien

A05-994 - 3D Direct writing of electrodes and catalysts for water treatment
Sirés, I. (Speaker)[1]; Cabot, P.L.[1]; Padilla, J.A.[1]; Xuriguera, E.[1]
[1]Universitat de Barcelona

A05-1266 - Electrocatalytic Reaction of Luminol at Diamond Conductive Electrodes for Electrochemiluminescence-Based Sensors
Ivandini, T.A. (Speaker)[1]; Einaga, Y.[1]; Rahmawati, I.[1]
[1]Universitas Indonesia, Depok (Indonesia)

A05-1275 - Solid State Synthesis and Reflection Spectra of Ce2Zr3(MoO4)9:Ti and Ce2Zr3(MoO4)9:Ti,Eu
Exeler, J. (Speaker)[1]; Jüstel, T.[1]
[1]FH Münster, Steinfurt

A05-1401 - Synthesis and characterisation of high entropy alloy nanoparticles for oxygen reduction reaction
Zhai, Z. (Speaker)[1]
[1]Bochum

A05-1916 - Fabrication of a sustainable 3D g-C3N4/WS2 heterojunction and evaluation of its photocatalytic performance
Lincy G, M.V. (Speaker)[1]; Chowdhury, S.[1]; Ghangrekar, M.M.[1]
[1]Indian Institute of Technology Kharagpur

A05-1922 - Developing an Innovative Technology for the Efficient Removal of Indoor micro-nano plastics by Porous Nano-Materials
Sheraz, M. (Speaker)[1]
[1]KITECH - Korea Institute of Industrial Technology, Ansan-si (South Korea)

A05-1925 - Copper–Cobalt Bimetallic Phosphides as efficient electrocatalysts for Overall Water Splitting and methanol oxidation reaction
Bandyopadhyay, D. (Speaker)[1]; Ghosh, S.[2]; Bar Sadan, M.[1]
[1]Ben-Gurion University of the Negev, Israel, Beer Sheva (Israel); [2]CSIR-Central Mechanical Engineering Research Institute (CMERI), Durgapur (India)

A05-2030 - Copper sulfate crosslinked Fe-chitosan hydrogels: A template for binary MOF synthesis.
Joseph, J. (Speaker)[1]
[1]University of Jyväskylä

A06-441 - online - Optimization of the application of the commercial Solkote paint by dip-coating methodology on stainless steel substrate and determination of the service life of the optimised absorber
Farchado, M. (Speaker)[1]; Barandica, N.[1]; Germán, N.[1]; Morales, Ã.[1]; San Vicente, G.[1]
[1]Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT), madrid (Spain)

A06-843 - online - Influence of substrate nature on the electrochromic properties of Oriented Surface-Anchored Metal-Organic Frameworks (SurMOFs) thin Films
Mazel, A.[1]; Ambreen, A. (Speaker)[2]; Rocco, L.[1]; Penin, N.[1]; Bellet, D.[2]; Rougier, A.[1]
[1]CNRS, Univ. Bordeaux, Bordeaux INP, ICMCB, UMR 5026, 33600, Pessac (France); [2]Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP, 38000, Grenoble (France)

A06-1038 - Study of the thermochromic performance of hydrothermally synthesized Vanadium dioxide films
Mantsiou, E. (Speaker)[1]; Aperathitis, E.[2]; Binas, V.[2]; Gagaoudakis, E.[2]; Kiriakidis, G.[2]; Zouridi, L.[2]
[1]Forth, Heraklion (Greece); [2]FORTH, Heraklion (Greece)

A06-1221 - Synthesis and evaluations of magnetocaloric materials for room temperature magnetic cooling
Kim, J.-W. (Speaker)[1]; Kang, K.H.[1]; Lee, A.-Y.[1]
[1]Korea Institute of Materials Science, Changwon (South Korea)

A06-1446 - online - Facile synthesis of carbon aerogels for supercapacitors from RH agricultural wastes
Atanasio, P. (Speaker)[1]; Pasquali, M.[1]; Rossi, M.[1]; Scaramuzzo, F.A.[1]
[1]University of Rome Sapienza

A06-1846 - Advanced Organic Transistor-Based Sensor utilizing Solvatochromic Medium with Twisted Intramolecular Charge-Transfer Behavior and Its Application to Ammonia Gas Detection
Seo, J.[1]; Lee, H. (Speaker)[1]
[1]Hanyang University, Ansan (South Korea)

A06-1903 - The role of processing on the transport properties of Co2ZrSn Heusler alloy for thermoelectric applications
Difalco, A. (Speaker)[1]
[1]Università di Torino, Turin (Italy)

A06-1927 - Thermoelectric properties achievable with CNT and polymer/SWCNT composites
Krause, B. (Speaker)[1]; Pötschke, P.[2]
[1]Leibniz Institute of Polymer Research Dresden (IPF); [2]Leibniz-Institut für Polymerforschung Dresden e.V.

A06-1928 - Highly Flexible and Durable Thermoelectric Power Generator from CNT/PDMS Foam by Rapid Solvent Evaporation
Kang, Y.H. (Speaker)[1]; Han, M.[1]
[1]Korea Research Institute of Chemical Technology, Daejeon (South Korea)

A06-1929 - Development of Highly Conductive Copper Iodide with Precision Doping of Iodine for Thermoelectric Power Generators
Park, B. (Speaker)[1]; Bae, E.J.[1]; Han, M.[1]; Kang, Y.H.[1]
[1]Korea Research Institute of Chemical Technology, Daejeon (South Korea)

A06-1936 - Exciplex Upconversion Type OLEDs Operated by 1.5 V Battery
Morimoto, M. (Speaker)[1]; Izawa, S.[2]; Naka, S.[1]
[1]University of Toyama, Kassel; [2]Tokyo Institute of Technology, Yokohama (Japan)

A06-1968 - online - A modulated interconnected network of doped conjugated polymers enhancing thermoelectric properties
Zhu, W. (Speaker)[1]
[1]University of Cambridge, CAMBRIDGE (United Kingdom)

A06-2009 - Exploring the Simultaneous Electrodeposition Mechanism of Polyaniline and Oxide on Ta, Nb and Ti for a Tailored Synthesis of Hybrid Energy Materials
Gkili, C. (Speaker)[1]; Deligiannakis, K.[1]; Sazou, D.[1]
[1]Aristotle University of Thessaloniki

A06-2018 - Ion Accumulation at Interfaces of CsPbI3 Perovskite Solar Cells Investigated by XPS and UPS
Wrzesińska-Lashkova, A. (Speaker)[1]; Heffner, H.[1]; Vaynzof, Y.[1]
[1]TU Dresden

A07-873 - Interpenetrating functional composites for soft robotics by hierarchical microchannels
Greve, E. (Speaker)[1]; Adelung, R.[1]; Hauck, M.[1]; Saure, L.[1]; Schütt, F.[1]
[1]Kiel University

A07-991 - Single Electrode Yarn based Triboelectric Nanogenerators with NCCs Electrophoretic Deposited Films
Barras, R. (Speaker)[1]; Barquinha, P.[1]; Gaspar, D.[1]; Grey, P.[1]; Martins, R.[1]; Pereira, L.[1]
[1]Cenimat|i3N, Almada (Portugal)

A07-1009 - Carbon yarn-based supercapacitors with in-situ regenerated cellulose hydrogel for sustainable wearable electronics
Carvalho, J.T. (Speaker)[1]; Coelho, J.[1]; Cunha, I.[1]; Fortunato, E.[1]; Martins, R.[1]; Pereira, L.[2]
[1]CENIMAT|i3N, Caparica (Portugal); [2]CENIMAT|i3N & AlmaScience, Caparica (Portugal)

A07-1592 - Electrochemical Property of Activated Carbon Monolith from Barley for Supercapacitor Electrode
Kim, N.I.[1]; Huang, M.[2]; Lee, J.-S.[2]; Yoon, T.-H. (Speaker)[2]
[1]Hannam University, Daejeon (South Korea); [2]Gwangju Institute of Sci. & Tech.

A08-383 - Synthesis of highly porous 3D CeO2-Aeromaterials
Lumma, J. (Speaker)[1]; Greve, E.[1]; Saure, L.[1]; Adelung, R.[1]; Terraschke, H.[1]; Schütt, F.[1]
[1]Christian-Albrechts-University, Kiel

A08-1915 - Ferroelectric lamellar structures for enhanced electrocaloric (EC) application with wide temperature stability
Roy, P.K. (Speaker)[1]
[1]IIT Madras, Chennai (India)

A08-1920 - Photocatalytic degradation of sulfamethoxazole using visible light-assisted sulfur-doped-Bi2O3/MnO2 Z-Scheme heterojunction photocatalyst immobilized on various support materials
Kumar Parida, V. (Speaker)[1]; Chowdhury, S.[1]; Kumar Gupta, A.[1]
[1]Indian Institute of Technology Kharagpur

A08-1985 - Investigation of the Sintering Behaviour of the NaSICON Solid-Electrolyte Na3.4Zr2.0Si2.4P0.6O12.0 for All-Solid-State Sodium-Batteries
Hausner, C. (Speaker)[1]
[1]Karlsruhe Institute of Technology (KIT)

B: Structural Materials

B01-80 - Effect of cooling rate on the improvement of tensile properties in a Fe-Mn-Si-C-based multi-phase TRIP steels
Jeong, C.-G. (Speaker)[1]; Trang, T.T.T.[1]; Woo, Y.-Y.[2]; Yoon, E.-Y.[2]; Lee, Y.-S.[2]; Heo, Y.-U.[1]
[1]Pohang University of Science and Technology; [2]Korea Institute of Materials Science, Changwon (South Korea)

B01-87 - Simulation of the blister formation in the electro-galvanized steel
Shin, S.H. (Speaker)[1]; Jung, B.H.[2]; Jung, Y.G.[2]; Heo, Y.-U.[1]
[1]Pohang University of Science and Technology (POSTECH); [2]Pohang Iron and Steel Company (POSCO), Incheon (South Korea)

B01-91 - Role of grain boundary precipitate on intergranular fracture in an austenitic Fe-Mn-Al-C lightweight steel
Lee, D. (Speaker)[1]; Heo, Y.-U.[1]; Lee, J.S.[1]; Park, S.-J.[2]
[1]POSTECH, Pohang (South Korea); [2]KIMS, Changwon (South Korea)

B01-322 - Interacting effect of silicon contents and process temperatures on tensile properties of Quenching and Partitioning (Q&P) processed low-alloyed steels
Yu, C.-J. (Speaker)[1]; Seo, C.-H.[2]; Im, Y.-R.[2]; Suh, D.-W.[1]
[1]POSTECH, Pohang (South Korea); [2]POSCO, Gwangyang (South Korea)

B01-519 - Effect of stress and annealing temperature on the helium bubble swelling in RAFM steels
Kim, S. (Speaker)[1]; Ahn, M.[1]; Lee, C.-H.[2]; Jin, H.-H.[3]; Shin, C.[1]
[1]Myongji University, Yongin (South Korea); [2]Korea Institute of Materials Science, Changwon (South Korea); [3]Korea Atomic Energy Research Institute, Daejeon (South Korea)

B01-542 - Evaluation of the effect of quenching and self-tempering (QST) process on microstructure and mechanical properties of offshore steel beams
Yu, G. (Speaker)[1]; Kim, S.[1]; Ahn, M.[1]; Chung, J.H.[2]; Shin, C.[1]
[1]Myongji University, Yongin (South Korea); [2]Hyundai Steel Company, Incheon (South Korea)

B01-587 - Effect of solution treatment duration on the microstructure and mechanical properties of UNS S32750 / F53 / 1.4410 Super Duplex Stainless Steel (SDSS) alloy
Cojocaru, E.M.[1]; Raducanu, D.[1]; Serban, N.[1]; Zarnescu-Ivan, N.[1]; Cojocaru, V.D. (Speaker)[1]
[1]University POLITEHNICA of Bucharest

B01-981 - Combinatorial investigation of phase transformation and prediction of bainitic microstructure in meso-scale segregated nuclear vessel steel forgings
Bregeault, M. (Speaker)[1]
[1]Université Grenoble Alpes, Saint Martin d'Hères (France)

B01-1410 - online - Influence of silicon on the kinetics of bainite transformation in low alloyed cast steel
Myszka, D. (Speaker)[1]
[1]Warsaw University of Technology, Warszawa (Poland)

B01-1619 - online - Microstructural Characterization and Impact Properties of 9-14 Cr ODS Steel for First Wall Components
Ciemiorek, M. (Speaker)[1]; Lewandowska, M.[1]; de Castro, V.[2]; Leguey, T.[2]; de Carlan, Y.[3]; Henry, J.[3]
[1]Warsaw University of Technology; [2]Universidad Carlos III de Madrid; [3]Université Paris-Saclay

B01-1643 - 3D in situ observation for strain-induced martensitic transformation in austenitic steel by synchrotron X-ray
Iwano, T. (Speaker)[1]; Takakuwa, O.[1]; Hirayama, K.[2]; Toda, H.[1]
[1]Kyushu University, Fukuoka (Japan); [2]Kyoto University

B01-1658 - The relationship between matrix structure and hydrogen embrittlement of ferritic-pearlitic ductile cast irons
Hayakawa, R. (Speaker)[1]; Matsuo, T.[1]
[1]Fukuoka University

B01-1813 - Effects of austenitizing temperature on the mechanical properties of nano-structured bainitic steel
Chhajed, B. (Speaker)[1]; Mishra, K.[1]; Singh, K.[2]; Singh, A.[1]
[1]Indian Institute of Technology Bombay, Mumbai (India); [2]Institute of Materials physics, Geesthacht

B01-1842 - Effect of strain path martensitic transformation sequence in medium Mn steels
B. Satyampet, P. (Speaker)[1]; Bhunia, S.[2]; Pant, P.[2]; Kundu, S.[3]
[1]Indian Institute of Technology Bombay, Powai, Mumbai (India); [2]Indian institute of technology Bombay, Mumbai (India); [3]TATA steels, Jameshedpur (India)

B01-1960 - Room temperature in-situ synchrotron creep of Fe-based shape memory alloys
Oza, M.J. (Speaker)[1]
[1]École Polytechnique Fédérale de Lausanne

B01-1963 - Investigation of Zn induced LME in medium Mn steels with significant austenite content using HT compression tests
Ripperger, L. (Speaker)[1]; Burlet, T.[1]; Sandlöbes-Haut, S.[1]
[1]RWTH Aachen University

B01-2041 - Evolution of Microstructure in Hot worked and Hot Band Annealed High Silicon Steel
GIRI, S.K. (Speaker)[1]; Kundu, S.[2]; Samajdar, I.[3]
[1]Tata Steel Limited, Jamshedpur, India; [2]Tata Steel Limited, Jamshedpur (India); [3]Indian Insti-tute Of Technology, Mumbai (India)

B02-98 - The Process Development of Negative Salt Pattern Molding for Porous Magnesium Alloy Manufacturing
Po- yi, S. (Speaker)[1]; C.N., K.[1]
[1]National Sun Yat-sen University, Kaohsiung City 80424, Taiwan (Taiwan)

B02-1656 - Effect of defects on the fatigue properties of Al-Si-Mg casting aluminum alloy
Matsuda, S. (Speaker)[1]; Takamatsu, K.[2]; Dote, I.[2]; Tobinaga, H.[2]; Matsuo, T.[1]; Endo, M.[1]
[1]Fukuoka University, fukuoka (Japan); [2]HINODE Holdings Co., Ltd, Saga (Japan)

B02-1848 - Effect of chemical changes on the defect structures in lean rare-earth free ternary Mg alloys
Delis, W. (Speaker)[1]; Neuss, D.[1]; Berners, L.[1]; Huckfeldt, P.[1]; Sun, P.-L.[1]; Hans, M.[1]; Raabe, D.[2]; Korte-Kerzel, S.[1]; Sandlöbes-Haut, S.[1]
[1]RWTH Aachen University; [2]Max-Planck Institut für Eisenforschung, Düsseldorf

B02-1906 - An investigation on CNTs, SiC and Y2O3 reinforced Al-based metal matrix functionally graded composite materials
GUPTA, R. (Speaker)[1]; Chattopadhyay, K.[1]; Mukhopadhyay, N.K.[1]
[1]Indian Institute of Technology BHU (IIT-BHU), Varanasi (India)

B02-1943 - Novel Planar Biaxial Cruciform Specimen Design for Large Plastic Deformation
Siddiqui, A.H. (Speaker)[1]
[1]Indian Institute of Technology Bombay, Mumbai (India)

B02-1971 - In situ small-angle X-ray scattering study of the precipitation kinetics during plastic deformation at room temperature of an Al-Zn-Mg-Cu alloy
Crowin, G. (Speaker)[1]; De Geuser, F.[1]; Deschamps, A.[1]; Després, A.[1]
[1]SIMaP, Saint-Martin-d'Hères (France)

B02-2007 - Aluminum-Silicon Carbide Particulate MMCs for Stiffness, Fatigue or Wear Critical Applications
Frehn, A. (Speaker)[1]; Lewis, P.[2]; Tarrant, A.[2]
[1]Materion Brush GmbH, Stuttgart; [2]Materion UK Ltd, Farnborough (United Kingdom)

B03-1491 - Development of titanium in-situ MMC for high temperature application in the aerospace sector
Contieri, R. (Speaker)[1]; Amigo, V.[2]; Cremasco, A.[1]; Floriano, R.[1]; Rielli, V.[1]
[1]UNIVERSITY OF CAMPINAS - UNICAMP; [2]Universitat Politècnica de València, VALENCIA (Spain)

B03-1667 - Additive manufactured multi-phase V-Si-B alloys for high-temperature application
Schmelzer, J. (Speaker)[1]; Rittinghaus, S.-K.[2]
[1]Otto-von-Guericke-Universität Magdeburg; [2]Bergische Universität Wuppertal

B03-1944 - Deposition of Ti-Zr Thin films at different pulse widths for aerospace and biomedical applications
Lustosa, C.[1]; Stryhalski, J.[2]; Gonçalves, R.[3]; Boturim, E.[3]; Florêncio, O.[4]; Massi, M. (Speaker)[3]
[1]Mackenzie Presbyterian University, Sao Paulo (Brazil); [2]Federal Institute of Santa Catarina, Jaragua do Sul (Brazil); [3]Mackenzie Presbiteryan University, São Paulo (Brazil); [4]Federal University of São Carlos

B03-1974 - Quantifying microsegregation induced changes on the atomic-scale in a 4th generation Single Crystal Ni-based Superalloy
Strutt, V.[1]; Appleton, M.[2]; Woolrich, J.[2]; Rugg, D.[2]; Radecka, A.[2]; Moody, M.[1]; Bagot, P. (Speaker)[1]
[1]University of Oxford; [2]Rolls Royce PLC, Derby (United Kingdom)

B03-2017 - Microstructure based Prediction of Yield Strength for Ni-base Superalloys
Müller, M. (Speaker)[1]; Schleifer, F.[1]; Fleck, M.[1]; Glatzel, U.[1]
[1]University of Bayreuth

B05-274 - Oxidation behaviour of the equiatomic RHEA Ta-Mo-Cr-Ti-Al in air and nitrogen-free atmospheres
Schäfer, B. (Speaker)[1]; Lanoy, F.[2]; Galetz, M.[2]; Gorr, B.[1]
[1]Karlsruher Institut für Technologie (KIT); [2]DECHEMA-Forschungsinstitut, Frankfurt am Main

B05-275 - Solid solution softening or hardening induced by minor substitutional additions in a Hf20Nb31Ta31Ti18 refractory high entropy alloy
Li, X. (Speaker)[1]; Guo, S.[1]
[1]Chalmers University of Technology, Gothenburg (Sweden)

B05-513 - 3D printed N-doped CoCrFeNi high entropy alloy with more than doubled corrosion resistance in dilute sulphuric acid
Zhou, R. (Speaker)[1]; Chen, W.[2]; Huang, J.[3]; Zhu, Y.[3]
[1]city university of hong kong, Hong Kong (Hong Kong SAR of China); [2]city university of Hong Kong; [3]city university of Hong Kong

B05-646 - Generative Adversarial Networks for Generation of Synthetic High Entropy Alloys
Gregores Coto, A. (Speaker)[1]; Precker, C.E. (Speaker)[1]; Muiños Landin, S.[1]
[1]AIMEN Techology Centre, Pontevedra (Spain)

B05-807 - Irradiation resistance of concentrated alloys (HEA and model HEA)
Dartois, A. (Speaker)[1]; Décamps, B.[2]; Fraczkiewicz, A.[3]; Meslin, E.[1]; Mouton, I.[1]; Nastar, M.[1]
[1]CEA Saclay, Gif-sur-Yvette (France); [2]IJClab, Orsay (France); [3]EMSE, Saint-Etienne (France)

B05-1320 - Characterisation of a FeNiCrMnAl High Entropy Alloy processed through different thermomechanical treatments
Castellote-Alvarez, R. (Speaker)[1]; San-Martin, D.[1]; Fraczkiewicz, A.[2]; Toda-Caraballo, I.[1]
[1]National Center for Metallurgical Research (CENIM-CSIC), Madrid (Spain); [2]École des Mines de Saint-Étienne, Madrid (Spain)

B05-1330 - Nitrogen ion implantation of AlCoCrFeNiTi0.2 High Entropy Alloy
Jenczyk, P. (Speaker)[1]; Gadalińska, E.[2]; Jarząbek, D.[1]; Levintant-Zayonts, N.[1]; Lu, Z.[3]; Zhang, Y.[3]
[1]Institute of Fundamental Technological Research, Beijing (China); [2]Łukasiewicz Research Network – Institute of Aviation, Beijing (China); [3]University of Science and Technology Beijing

B05-1519 - Nitriding of High Entropy Alloy for changing surface properties
Włoczewski, M. (Speaker)[1]
[1]Warsaw University of Technology

B05-1635 - Ta-Ti-V-W high-entropy alloys: microstructure characterisation and additive manufacturing
Wróbel, J. (Speaker)[1]; Sobieraj, D.[1]; Morończyk, B.[1]; Zrodowski, Ł.[1]; Cieślak, G.[1]; Chromiński, W.[1]; Nguyen-Manh, D.[2]
[1]Warsaw University of Technology; [2]United Kingdom Atomic Energy Authority, Abingdon (United Kingdom)

B05-1789 - online - Ultra-high pressure induced bainitic transformation in Ti40Zr20Nb20Hf5Ta15 high entropy alloy
Rogal, L. (Speaker)[1]; Dutkiewicz, J.[2]; Wrobel, M.[3]; Wdowik, U.[4]; Strobel, T.[5]
[1]Polish Academy of Sciences, Krakow (Poland); [2]Institute of Metallurgy and Materials Science Polish Academy of Science, Krakow (Poland); [3]2AGH University of Science and Technology, Krakow (Poland); [4]IT4Innovations National Supercomputing Center, Ostrava (Czech Republic); [5]Earth & Planets Laboratory, Carnegie Institution of Washington

B05-1911 - online - High-temperature tribological properties of high entropy alloy HfNbTaTiZr strengthened by nitride dispersion
La, M.[1]; Walter, J. (Speaker)[2]; Lukáč, F.[1]; Cvrček, L.[2]; Buřil, M.[2]
[1]Institute of Plasma Physics of the Czech Academy of Sciences, Prague (Czech Republic); [2]Faculty of Mechanical Engineering, Czech Technical University in Prague

B05-1921 - Development of a quinary high entropy alloy with excellent visible light-driven photocatalytic performance
Das, S. (Speaker)[1]; Chowdhury, S.[1]; Tiwary, C.S.[1]
[1]Indian Institute of Technology Kharagpur

B06-1694 - Estimation of Fatigue Limits with Small defects by using Lasso Regression
Nishimura, Y. (Speaker)[1]; Yanase, K.[2]
[1]Fukuoka-university; [2]Fukuoka-University

B06-1896 - Fabrication and characterization of composite materials reinforced by ceramic preform infiltrated by ferrous alloy
Szymański, Ä. (Speaker)[1]
[1]AGH University of Science and Technology in Cracow

B06-1942 - Effect of in-situ temperature variation on fully reversed cyclic response of woven glass fiber composites
Hiremath, M. (Speaker)[1]; Mishra, S.[1]; Guha, A.[1]; Tewari, A.[1]
[1]Indian Institute of Technology Bombay, Mumbai (India)

B06-2027 - Normal force dependent tribo-oxidation and friction of copper
Flachmann, M. (Speaker)[1]; Gorenflo, M.[1]; Biesinger, J.[1]; Garabedian, N.[1]; Greiner, C.[1]
[1]Karlsruhe Institute of Technology (KIT)

B07-314 - Mechanism-guided alloy design to prevent intergranular sulfide formation in copper
Ahn, M. (Speaker)[1]; Park, J.[1]; Yu, G.[1]; Kim, S.[1]; Shin, C.[1]
[1]Myongji University, Yongin (South Korea)

B07-477 - Influence of oxygen on the structure of orthorombic martensitic phase in titanium alloys
Šalata, K. (Speaker)[1]; Kozlík, J.[1]
[1]Charles University, Faculty of Mathematics and Physics, Prague 8 (Czech Republic)

B07-523 - Effect of crystal orientation and stacking fault energy on tensile deformation behaviour and deformation microstructure evolution in Cu-Al alloys
Yamamoto, K. (Speaker)[1]; Yoshida, S.[1]; Tsuji, N.[1]
[1]Kyoto University

B07-588 - Microstructure, texture and mechanical properties evolution during solution treatment of a Ti-Nb-Zr-Ta-Sn-Fe alloy
Cojocaru, V.D. (Speaker)[1]; Cojocaru, E.M.[1]; Dan, A.[1]; Galbinasu, B.M.[2]; Serban, N.[1]; Zarnescu-Ivan, N.[1]
[1]University POLITEHNICA of Bucharest; [2]University of Medicine and Pharmacy „Carol Davila“ Bucharest

B07-627 - online - Study of the Cause of a Foreign Object Damage in some Aircraft Turbine Blades
Pastor Muro, A. (Speaker)[1]; García-Martínez, M.[1]; González Caballero, B.[1]; Valles González, P.[1]
[1]National Institute of Aerospace Technology (INTA), Torrejón de Ardoz (Spain)

B07-753 - Engineering Width and Directness of the Band Gap in Diamond-based Materials
Kaintz, M. (Speaker)[1]; Cammarata, A.[1]; Polcar, T.[1]
[1]Czech Technical University in Prague

B07-760 - Microscopy Investigation on Different Materials After Pulsed High Field Conditioning and Low Energy H- Irradiation
Serafim, C. (Speaker)[1]
[1]CERN, Geneve (Switzerland)

B07-1036 - Microstructure and mechanical properties of binary copper alloys with varying amounts of Si, Zr, Ti and Ag
Park, J. (Speaker)[1]; Ahn, M.[1]; Kim, S.[1]; Shin, C.[1]
[1]Myongji University, Yongin (South Korea)

B07-1235 - Effect of High FeOx Containing Material Dissolution in Hlsarna Slag
Sampath Kumar, B. (Speaker)[1]
[1]University of Warwick, Coventry (United Kingdom)

B07-1311 - Effects of Co addition on the internal friction of Cu-Al-Mn shape memory alloys
Chang, S.-H. (Speaker)[1]; Gholami-Kermanshahi, M.[2]; Lange, G.[2]; Liao, W.-Y.[1]
[1]National I-Lan University; [2]Technische Universität Ilmenau

B07-1413 - Fracture assessment of nuclear components manufactured using novel Hot Isostatic Pressing (HIP) technique
Mamun, A.A. (Speaker)[1]
[1]Bangor University

B07-1461 - online - Finite-element-analysis of the mechanical response of installed impact target foundations in drop tests of dangerous goods packagings
Lengas, N. (Speaker)[1]
[1]Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin

B07-1534 - WWER-440 primary circuit thermal ageing degradation assessment procedure within the DELISA-LTO Project
Bursik, O. (Speaker)[1]; Kopriva, R.[1]; Kozakova, V.[1]; Rusnakova, K.[1]
[1]UJV Rez, a. s., Rez, Husinec (Czech Republic)

B07-1622 - Effect on the stress whitening and co-continuous morphology of thermoplastic olefin (TPO) – elastomer blends under a fracture test
Mohd Yasin, S.B. (Speaker)[1]; Mohd Yasin, S.B.[2]; Taylor, A.[1]
[1]Imperial College London; [2]Universiti Teknologi MARA Cawangan Perlis, Arau (Malaysia)

B07-1661 - High temperature creep behaviour of a Ni-20wt.%Cr alloy : influence of dimensions and microstructure on the deformation mechanisms
Papin, J. (Speaker)[1]; Ateba Betanda, Y.[2]; Folton, C.[1]; Hug, E.[3]; Marnier, G.[4]; Sauvage, X.[5]
[1]CNRS UMR 6508 CRISMAT/ université de caen normandie, Caen (France); [2]APERAM ALLOYS, IMPHY (France); [3]CNRS UMR 6508 CRISMAT/ université de caen normandie; [4]ensicaen, Caen (France); [5]Groupe de Physique des Matériaux – UMR 6634 (University of Rouen)

B07-1679 - Sedimentation of non-spherical particles in HPC mixtures with different composition
Jiroutová, D. (Speaker)[1]; Bittner, T.[1]; Hurtig, K.[1]; Jirout, T.[1]
[1]Czech Technical University in Prague

B07-1856 - Heterogeneous-nanostructured SUS316LN stainless steel and the specific properties
Miura, H. (Speaker)[1]; Oba, Y.[1]; Watanabe, C.[2]
[1]Toyohashi University of Technology, Toyohashi, Aichi (Japan); [2]Kanazawa University

B07-1858 - Analysing the serrated flow in a multi-component Co-base superalloy
Karnati, A.K. (Speaker)[1]
[1]Indian Institute of Technology Madras, CHENNAI (India)

B07-1926 - Behavior of polypropylene foam subjected to a hydrostatic compression test
Kerihuel, D. (Speaker)[1]; Laurent, H.[1]; Mahéo, L.[1]; Viot, P.[2]
[1]University of south brittany, Lorient (France); [2]Arts et Metiers Paritech, Talence (France)

B07-1931 - A minimal auxetic structure and a unified design method for 2D auxetic metamaterials
Roberjot, P. (Speaker)[1]; Herder, J.[1]
[1]Delft University of Technology

B07-1961 - Grain size effect on yielding and Lüders deformation behaviour in high purity iron studied by digital image correlation (DIC) analysis
Lau, W.S. (Speaker)[1]; Gao, S.[1]; Park, M.-h.[1]; Tsuji, N.[1]; Yoshida, S.[1]
[1]Kyoto University

B07-1976 - Microstructure analysis and mechanical characterization of flame retardant epoxy resins transferred to glass fiber composites via prepregs
Sunder, S. (Speaker)[1]; Jauregui Rozo, M.[2]; Schartel, B.[2]; Ruckdäschel, H.[1]
[1]University of Bayreuth; [2]Bundesanstalt für Materialforschung und -prüfung, Berlin

C: Processing

C01-361 - online - A Literature Review of the Heat Treatments Applied in Metallic Parts Processed by Additive Manufacturing
Rojas Arias, N. (Speaker)[1]; Gil Coury, F.[2]; Amancio Filho, S.T.[3]; Gargarella, P.[2]
[1]Federal University of São Carlos (Brazil) / Graz University of Technology (Austria); [2]Federal University of São Carlos -UFSCar; [3]Graz University of Technology -TU Graz

C01-456 - Austenitic stainless steel with sandwich microstructure manufactured by selective laser melting
Morales-Rivas, L. (Speaker)[1]
[1]National Center for Metallurgical Research (CENIM-CSIC), Madrid (Spain)

C01-613 - A continuous three-dimensional toolpath strategy using thermal scalar field for in wire arc additive manufacturing for thin and massive parts
Giordano, A. (Speaker)[1]; Bordreuil, C.[2]; Bugarin, F.[1]; Segonds, S.[1]
[1]Institut Clément Ader (ICA), Université de Toulouse, UT3, CNRS, IMT Mines Albi, INSA Toulouse, ISAE-SUPAERO, Toulouse, France,; [2]Laboratoire de Mécanique et de Génie Civil, Université de Montpellier / CNRS, Montpellier, France, Nîmes (France)

C01-767 - The effects of compositions and temperature on the surface tension of Fe-Si alloys
Park, J. (Speaker)[1]; Lee, J.[1]
[1]Korea University, Seoul (South Korea)

C01-881 - Laser Powder Bed Fusion of a biocompatible Ti-35Nb-7Zr-5Ta alloy
Batalha, R.[1]; Pauly, S.[2]; Kiminami, C.[3]; Bolfarini, C.[3]; Gargarella, P.(Speaker)[4]
[1]Instituto de Soldadura e Qualidade, Oeiras (Portugal); [2]Technische Hochschule Aschaffenburg; [3]Federal University of São Carlos; [4]Federal University of Sao Carlos

C01-937 - Monotonic and Fatigue Behaviour of Additive Manufactured Ti–6Al–4V for Load Bearing Biomedical Implants
Goyal, A. (Speaker)[1]; Ghyar, R.[1]; Karagadde, S.[1]; Ravi, B.[1]
[1]Indian Institute of Technology Bombay, Mumbai (India)

C01-984 - online - Laser Powder Bed Fusion of Surface Functionalized AA2017 Powders
Batistao, B.F. (Speaker)[1]; Amancio-Filho, S.T.[2]; Gargarella, P.[1]
[1]Federal University of Sao Carlos; [2]Graz University of Technology

C01-1056 - Crystallographic texture control of austenitic stainless steels with L-PBF
Sofras, C. (Speaker)[1]; Capek, J.[1]; Leinenbach, C.[2]; Logé, R.[3]; Strobl, M.[1]; Polatidis, E.[1]
[1]Paul Scherrer Institute PSI, Villigen PSI (Switzerland); [2]EMPA, Dübendorf (Switzerland); [3]EPFL, Neuchâtel (Switzerland)

C01-1247 - Deep Learning-based automated defect classification for Powder Bed Fusion
Kunkel, N. (Speaker)[1]; Thölken, D.[1]; Behler, K.[1]
[1]Technische Hochschule Mittelhessen, Friedberg

C01-1466 - A Machine Learning Approach to the estimation of geometrical quality on single scan tracks produced by Laser Powder Directed Energy Deposition
Wong, V. (Speaker)[1]; Lahr, G.[2]; Rodrigues, A.[3]; Teixeira, R.[3]; de Paula, G.[3]
[1]University of São Paulo, São Carlos (Brazil); [2]Italian Institute of Technology, Genova (Italy); [3]São Carlos School of Engineering, University of São Paulo

C01-1574 - Additive manufacturing of 3D printed 316L stainless steel medical implants using Fused Filament Fabrication
Chacón, J.M.[1]; Núñez, P.J.[1]; Caminero, M.A. (Speaker)[1]; Gacía-Plaza, E.[1]; Vallejo, J.[1]; Blanco, M.[2]
[1]University of Castilla-La Mancha, Ciudad Real (Spain); [2]Protresde, Ciudad Real (Spain)

C01-1674 - Development of Ni-20wt.%Cr metamaterials by additive manufacturing: towards the optimization of mechanical and acoustic properties
Ribot, R. (Speaker)[1]; Folton, C.[1]; Hug, E.[1]; Mas, L.[1]; Morvan, B.[2]
[1]UMR-CNRS-6508 CRISMAT / Université de Caen Normandie; [2]UMR-CNRS-6508 LOMC / Université du Havre Normandie, Le Havre (France)

C01-1881 - Evaluating the Effect of Optimized Scan Speed on Microstructural and Mechanical Properties of Laser Processed Stellite 6/TiC MMCs
Tiwari, V. (Speaker)[1]; Mandal, V.[1]; Ramkumar, J.[1]; Singh, S.S.[1]
[1]Indian Institute of Technology Kanpur

C01-1883 - Shape modification of cooling channels obtained by LPBF printing with non-destructive optimization methods
Kasperovich, G. (Speaker)[1]; Schoeffler, R.[1]; Lakemann, M.[1]; Petersen, A.[1]; Haubrich, J.[1]
[1]German Aerospace Center (DLR), Cologne

C01-1885 - Metallographic Studies on Duplex Stainless Steel Scaffold Fabricated by Laser Powder Bed Fusion
Sleem, K. (Speaker)[1]
[1]Università Politecnica delle Marche, Ancona (Italy)

C01-1918 - The Effect of Post-processing Heat Treatment on the Microstructural Evolution of Additively Manufactured 18Ni(300) Maraging Steel
Sajjadivand, S. (Speaker)[1]; Hartnett, M.[2]; Dowling, D.[3]; Celikin, M.[3]
[1]University College London, Dublin (Ireland); [2]Irish Manufacturing Research, Mullingar (Ireland); [3]University College Dublin

C01-1945 - On the use of low-cost metallic filaments for the fabrication of millimeter wave antennas
Vasquez, D. (Speaker)[1]; Bruna, S.[1]; Castro, J.[1]; Pizarro, F.[1]; Rodriguez, M.[1]
[1]Pontificia Universidad Católica de Valparaiso, Valparíso (Chile)

C01-1952 - How Deep Does It Go: Revealing 3DStrains in Additively Manufactured Alloys
Chen, Y.[1]; Withers, P.[2]; Yildirim, C. (Speaker)[3]; Tang, Y.[4]; Collins, D.[5]; Clark, S.[6]; Ludwig, W.[3]; Rodriguez Lamas, R.[3]; Detlefs, C.[3]; Reed, R.[4]; Lee, P.[7]
[1]RMIT, Melbourne (Australia); [2]University of Manchester; [3]European Synchrotron Radiation Facility, Grenoble (France); [4]University of Oxford, Oxfordshire (United Kingdom); [5]University of Birmingham; [6]Advanced Photon Source, Lemont (United States); [7]University College London

C01-1958 - Opportunities and limits of statistical methods in LPBF process development
Bittner, F. (Speaker)[1]; Mueller, B.[2]; Thielsch, J.[2]
[1]Fraunhofer Institute for Machine Tools and Forming Technology IWU, Dresden; [2]Fraunhofer Institut für Werkzeugmaschinen und Umformtechnik IWU, Dresden

C01-1977 - Monitoring-Data-Fusion for pore detection using AI
Krümmer, J. (Speaker)[1]; Bittner, F.[1]; Haefner, D.[1]; Thielsch, J.[1]
[1]Fraunhofer Institute for Machine Tools and Forming Technology IWU, Dresden

C01-1983 - Measurements of the effective thermal conductivity of composite metal powders for additive manufacturing
Lee, H. (Speaker)[1]; Koutsioukis, A.[2]; Lupoi, R.[2]; Nicolosi, V.[2]; Jafari, D.[1]; Wits, W.W.[1]; Geurts, B.J.[1]
[1]University of Twente, Enschede (Netherlands); [2]Trinity College Dublin

C01-2021 - Comparative analysis of the ternary effect on SLM-printed NiTi-Cu actuators
Salaheldin Abdelhady, E. (Speaker)[1]
[1]University of Twente, Enschede (Netherlands)

C02-343 - Effects of the surface modification of whisker on the compatibility and migration in polypropylene composites
Kang, E.H.[1]; Jeon, M.H.[2]; Lee, S.G. (Speaker)[1]
[1]Chungnam National University, Daejeon (South Korea); [2]LG Chemical Co., Daejeon (South Korea)

C02-1162 - Evaluation of mechanical properties in 3D-printed composites with graphene multilayer via Fused filament fabrication (FFF)
Brant de Campos, J. (Speaker)[1]; Cardona Romani, E.[2]; Moreira da Silva, D.[1]
[1]Rio de Janeiro State University; [2]SENAI Innovation Institute for Inspection and Integrity, Rio de Janeiro (Brazil)

C02-1640 - online - Compressive and flexural properties of PP specimens manufactured by FDM
Rivera-López, F. (Speaker)[1]; Cáceres Alvarado, J.M.[1]; Hernández Molina, M.[1]; Laz Pavón, M.M.[1]; Rancel Morales, F.[1]; Valido García, J.A.[1]
[1]Universidad de La Laguna, San Cristóbal de La Laguna (Spain)

C02-1662 - online - Effect of manufacturing temperature on 3D printed PETG specimens
Herzog-Cruz, P.[1]; Laz Pavón, M.M. (Speaker)[1]; Hernández Molina, M.[1]; Rivera-López, F.[1]; Valido García, J.A.[1]; Cáceres Alvarado, J.M.[1]
[1]Universidad de La Laguna, San Cristóbal de La Laguna (Spain)

C02-2003 - Enhancing the Thermal Conductivity of Carbon Fiber-Filled Polymer for Improving the Heat Dissipation in 3D Printed Objects
Chothe, H. (Speaker)[1]
[1]Luxembourg Institute of Science and Technology (LIST), Hautcharage (Luxembourg)

C02-2014 - online - Effects of Fill Fraction and Fill Morphology on Shrinkage of 3D-Printed Polylactic Acid (PLA)
Amin, M. (Speaker)[1]; Abdalrahman, N. (Speaker)[1]; Switzner, N.[1]
[1]American University of Iraq Sulaimani, Slemani (Iraq)

C05-805 - High-temperature behavior of liquid magnesium on different titanium substrates
Terlicka, S. (Speaker)[1]; Sobczak, N.[1]; Janus, K.[2]; Sobczak, J.[2]; Ziółkowski, E.[2]
[1]Polish Academy of Sciences, Kraków (Poland); [2]AGH University of Science and Technology, Krakow (Poland)

C05-810 - High-temperature interaction of liquid magnesium on pure niobium and titanium-niobium substrates
Terlicka, S. (Speaker)[1]; Sobczak, N.[1]; Janus, K.[2]; Sobczak, J.[2]; Rogal, Ä.[3]; Ziółkowski, E.[2]
[1]Polish Academy of Sciences, Kraków (Poland); [2]AGH University of Science and Technology, Krakow (Poland); [3]Polish Academy of Science, Krakow (Poland)

C05-1287 - High-Temperature Interaction of Liquid Aluminium with Oxidized Titanium and Graphite Substrates
Janus, K. (Speaker)[1]; Terlicka, S.[1]; Sobczak, J.[2]; Sobczak, N.[1]; Maziarz, W.[1]; Olejnik, E.[2]
[1]Polish Academy of Sciences, Krakow (Poland); [2]AGH University of Science and Technology, Krakow (Poland)

C05-1289 - High-Temperature Interaction of Liquid Aluminium with Titanium Substrate in two Different States: Compressed Powder and the Bulk
Janus, K. (Speaker)[1]; Terlicka, S.[1]; Sobczak, J.[2]; Sobczak, N.[1]; Maziarz, W.[1]; Olejnik, E.[2]
[1]Polish Academy of Sciences, Krakow (Poland); [2]AGH University of Science and Technology, Krakow (Poland)

C05-1930 - Study of Diffusion Mechanism in a Friction Processing Technique for Joining of Copper and Aluminium
Maity, D. (Speaker)[1]; Racherla, V.[1]
[1]IIT Kharagpur

POSTER SESSIONS

C05-1975 - Introduction of gel-type welding materials for paradigm shift in welding process
Jo, S. (Speaker)[1]; Cheon, J.[2]; Hwang, I.[1]; Kim, Y.-M.[1]
[1]KITECH - Korea Institute of Industrial Technology, Incheon (South Korea); [2]KITECH - Korea Institue of Industrial Technology, Incheon (South Korea)

C05-1996 - Research of the use of dual laser beam and its influence on the resulting properties of welded joints of duplex steels
Kopčanová, L. (Speaker)[1]
[1]Slovak Academy of Sciences, Bratislava (Slovakia)

C06-41 - Heating influence on the structuring mechanism of hierarchical surface structures fabricated on stainless steel by direct laser interference patterning
Schröder, N.[1]; Nyenhuis, F.[2]; Baumann, R.[1]; Mulko, L.[1]; Kiedrowski, T.[2]; L'huillier, J.A.[3]; Lasagni, A.F. (Speaker)[1]
[1]Technische Universität Dresden; [2]Robert Bosch GmbH, Stuttgart; [3]Technische Universität Kaiserslautern

C06-137 - online - Laser-microstructuring of FTO thin films for photovoltaics: influence of pulse duration
Heffner, H.[1]; Soldera, M. (Speaker)[2]; Lasagni, A.F.[1]
[1]TU Dresden; [2]Dresden

C06-138 - online - Hierarchically micropatterned polymer foils fabricated by laser-texturing and hot embossing for applications as optical diffusers
Soldera, M. (Speaker)[1]; Bouchard, F.[1]; Lasagni, A.F.[1]
[1]TU Dresden

C06-169 - Development of a robot-based Direct Laser Interference Patterning system for advanced surface functionalization
Olawsky, L. (Speaker)[1]; Mogthaderifard, S.[2]; Li, D.[3]; Kuhn, C.[1]; Du, K.[3]; Lasagni, A.F.[2]
[1]ALOtec Dresden GmbH, Kesselsdorf; [2]Technische Universität Dresden; [3]EdgeWave GmbH, Würselen

C06-176 - Influence of laser hardening on microstructures using direct laser interference patterning method
Moghtaderifard, S. (Speaker)[1]; Olawsky, L.[2]; Soldera, M.[1]; Ränke, F.[1]; Lasagni, A.F.[1]; Kuhn, C.[2]
[1]Technische Universität Dresden; [2]ALOtec Dresden GmbH

C06-233 - Fabrication of gradual periodic patterns on stainless steel using Direct Laser Interference Patterning
Wu, T. (Speaker)[1]; Voisiat, B.[1]; Soldera, M.[1]; Lasagni, A.F.[1]
[1]Technische Universität Dresden, George–Bähr–Str. 3c, 01069 Dresden

C06-234 - On the laser-based fabrication of gradient periodic surface structures at low energy levels and the induced metallurgical effects
Wu, T. (Speaker)[1]; Voisiat, B.[1]; Soldera, F.[2]; Soldera, M.[1]; Lasagni, A.F.[1]
[1]Technische Universität Dresden, George–Bähr–Str. 3c, 01069 Dresden; [2]Saarland University, Campus D3.3, 66123 Saarbrücken

C06-579 - Comparative study of LIFT-printed solder paste materials with different particle sizes for integrated photonic applications
Andritsos, K. (Speaker)[1]; Makrygianni, M.[1]; Zacharatos, F.[1]; Zergioti, I.[1]
[1]National Technical University of Athens

C06-695 - AI-based image recognition of laser-induced surface structures - An approach for machine learning in ultrashort pulse laser processing
Thomas, R. (Speaker)[1]; Schnell, G.[1]; Seitz, H.[1]; Westphal, E.[1]
[1]University of Rostock

C06-1034 - Improving the wear resistance and mechanical properties of tool steels via laser surface hardening
Petryshynets, I. (Speaker)[1]; Falat, L.[1]; Iefremenko, V.[1]; Kromka, F.[1]; Puchy, V.[1]
[1]The Institute of Materials Research of SAS, Kosice (Slovakia)

C06-1092 - online - Comparison of LIPSS structures generation on plastic parts by direct laser texturing and injection molding
Concheso, C. (Speaker)[1]; Peña, J.I.[2]; Sola, D.[3]
[1]BSH Electrodomésticos España S.A., Zaragoza (Spain); [2]Instituto de Nanociencia y Materiales de Aragón, Universidad de Zaragoza-CSIC; [3]Universidad de Murcia, Aragonese Foundation for Research and Development (ARAID)

C06-1898 - Analysing IR pyrometer captured thermal signature to predict Fe dilution and its effect on corrosion properties of laser deposited Inconel 625 cladding on SS 304 L
Misra, S. (Speaker)[1]; Kumar, C.S.[1]; Mohanty, I.[1]; Saha, P.[1]
[1]Indian Institute Of Technology Kharagpur

C06-2001 - Dot-like Periodic Patterning of Fluorine-doped Tin Oxide (FTO) Thin Films using Direct Laser Interference Patterning (DLIP) for Photovoltaic Applications
Heffner, H. (Speaker)[1]; Brunner, J.[1]; Lasagni, A.F.[1]; Vaynzof, Y.[1]
[1]TU Dresden

C06-2025 - Investigation of Ablation Efficiency of Stainless Steel Using Pulsed Lasers in Burst Mode
Obergfell, D. (Speaker)[1]; Azarhoushang, B.[1]; Lasagni, A.F.[2]
[1]Hochschule Furtwangen, Tuttlingen; [2]TU Dresden

C07-245 - Amorphous and dual-phase nanocomposite coatings within Zr-B-Cu system
Thakur, D. (Speaker)[1]
[1]University of West Bohemia, Plzen (Czech Republic)

C07-948 - Steel Substrate Surface Preparation to CVD Graphene Deposition in Steels
Brant de Campos, J. (Speaker)[1]; Baeta de Souza Junior, E.[1]; Bottega Peripolli, S.[1]; Carvalho Borba Cardoso, P.[1]
[1]Rio de Janeiro State University

C07-1031 - Analysis of the wear behavior of TiAlYN coated tools in milling of Inconel 718
Sebbe, N. (Speaker)[1]; Barbosa, M.[2]; Costa, R.[3]; Fernandes, F.[1]; Silva, F.[1]; Vitor, S.[3]
[1]ISEP - Polytechnic of Porto; [2]FEUP - Faculty of Engineering, University of Porto; [3]INEGI - Institute of Science and Innovation in Mechanical and Industrial Engineering, Porto (Portugal)

C07-1209 - Hierarchical Micro-/Nano-Patterned Ni-free Ti-based Bulk Metallic Glasses via Thermoplastic Net-shaping Technique for Implant Applications
Cai, F.-F.[1]; Spieckermann, F. (Speaker)[2]; Sarac, B.[3]; Czibula, C.[4]; Nogués, C.[5]; Schroers, J.[6]; Ó'Cróinín, T.[7]; Eckert, J.[2]
[1]Montanuniversität Leoben; [2]Chair of Materials Physics, Leoben (Austria); [3]Erich Schmid Institute of Materials Science, Leoben (Austria); [4]Institute of Bioproducts and Paper Technology, Graz (Austria); [5]Departament de Biologia Cel•lular, Fisiologia i Immunologia, Barcelona (Spain); [6]Department of Mechanical Engineering and Materials Science, New Haven (United States); [7]School of Biomolecular and Biomedical Science, Dublin (Austria)

C07-1277 - Microstructure and Stress Behaviour of Mo Thin Films for electrodes in High Temperature Sensors
Park, E. (Speaker)[1]; Rane, G.K.[2]; Menzel, S.B.[2]; Kim, Y.H.[1]
[1]Korea Institute of Industrial Technology (KITECH), Incheon (South Korea); [2]Leibniz IFW Dresden

C07-1301 - Growth of Fe3C-VACNT surfaces by metal dusting under plasma carburizing: Fractional factorial study and correlation with morphological and structural aspects
de Souza Lamim, T. (Speaker)[1]; Pigosso, T.[1]; Andrioni, T.D.[1]; Martinez Martinez, D.[2]; Biasoli de Mello, J.D.[3]; Klein, A.N.[1]; Bendo, T.[1]; Binder, C.[1]
[1]Materials Laboratory, Federal University of Santa Catarina, Florianópolis (Brazil); [2]Luxembourg Institute of Science & Technology - LIST, Esch-sur-Alzette (Luxembourg); [3]Federal University of Uberlandia, Uberlândia (Brazil)

C07-1484 - Selective oxidation and Zinc alloy wettability of FeAl steels: in-situ study
Koltsov, A. (Speaker)[1]; Drouet, G.[1]; Scheid, J.[1]; Barges, P.[1]; Giorgi, M.-L.[2]; Mataigne, J.-M.[1]
[1]ArcelorMittal Maizières Research, Maizières-Lès-Metz (France); [2]Laboratoire de Génie des Procédés et Matériaux, CentraleSupélec, Gif-sur-Yvette (France)

C07-1692 - Application of laser based methodologies for surface functionalization of porous TCP/HA scaffolds
Filipov, E. (Speaker)[1]
[1]Institute of Electronics, Bulgarian Academy of Sciences, Sofia (Bulgaria)

C07-1837 - online - Advancing solid interfaces and lubricants by first principles materials design
Righi, M.C. (Speaker)[1]
[1]University of Bologna

C07-1861 - Oxidation and diffusion processes in multilayered TiSiN/TiN(Ag) coatings designed for high-temperature tribological applications
Bondarev, A. (Speaker)[1]; Al-Rjoub, A.[2]; Fernandes, F.[3]; Polcar, T.[4]
[1]University of Limerick; [2]University of Coimbra; [3]Polytechnic of Porto; [4]Czech Technical University in Prague

C07-1938 - Synthesis of TiO2 on the copolymerized aramid by low temperature hydrothermal method
Lee, D. (Speaker)[1]; Yu, G.C.[1]
[1]Chungnam National University, Daejeon (South Korea)

C07-2032 - Post-processing of additively manufactured optics for application in vehicle interiors using Digital Light Processing (DLP)
Boley, P. (Speaker)[1]; Lahres, M.[1]; Schiffers, R.[2]
[1]Mercedes-Benz AG, Böblingen; [2]Universität Duisburg-Essen

C08-1080 - Importance of precursor treatment for sintered 2:17-type permanent magnets
Diehl, O. (Speaker)[1]; Gassmann, J.[2]; Giron, S.[3]; Gutfleisch, O.[3]; Katter, M.[4]; Opelt, K.[2]; Weidenkaff, A.[2]; Üstüner, K.[4]
[1]Fraunhofer Research Institution for Materials Recycling and Resource Strategies IWKS, Hanau; [2]Fraunhofer-Einrichtung für Wertstoffkreisläufe und Ressourcenstrategie IWKS, Hanau; [3]Technische Universität Darmstadt; [4]Vacuumschmelze GmbH & Co. KG, Hanau

C08-1310 - Changes in the interface microstructure of copper-based composite materials with a carbon prepared by gas pressure
Cantürk, S.B. (Speaker)[1]
[1]Slovak Academy of Sciences, Bratislava (Slovakia)

C08-1407 - online - Design and characterization of shape memory alloys obtained by spark plasma sintering
Cîrstea, C.-D. (Speaker)[1]
[1]National Institute for Research and Development in Electrical Engineering INCDIE ICPE-CA, Bucharest (Romania)

C08-1524 - Energy efficient sintering of 2D Materials-based nanocomposites
Scholl, M. (Speaker)[1]; Barg, S.[2]
[1]University of Augsburg; [2]Universität Augsburg

C08-1939 - Extrinsic point defects in BaTiO3-based ceramics
Marak, V. (Speaker)[1]; Drdlik, D.[1]; Tofel, P.[1]; Kachlik, M.[1]; Santana, V.[1]; Maca, K.[1]
[1]Brno University of Technology

C08-1940 - online - Improvement of thermo-mechanical properties of oxide ceramic fibres in the material system Al2O3-SiO2
Glaser, L. (Speaker)[1]; Herborn, R.[1]; Maier, J.[1]; Okan, H.[1]; Rüdinger, A.[1]
[1]Fraunhofer ISC Center for High Temperature Materials & Design HTL, Würzburg

C08-2008 - Laser melt injection of SFTC, NbC and Cr3C2 on aluminium bronze substrates for enhanced cavitation erosion resistance
Ramoliya, M.L. (Speaker)[1]; Bohlen, A.[1]; Seefeld, T.[1]
[1]Bremer Institut für angewandte Strahltechnik GmbH, Bremen

C08-2029 - online - Preliminary solar ageing of new advanced ceramic materials for solar receivers
Canadas, I. (Speaker)[1]; Galindo, F.J.[1]; García-Ten, F.J.[2]; Lorente-Ayza, M.[2]; Martínez-Plaza, D.[1]; Morales, Á.[1]; Planelles-Aragó, J.[2]; Rodríguez-García, J.[1]
[1]CIEMAT - Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas, Tabernas (Spain); [2]Instituto de Tecnología Cerámica (ITC). Asociación de Investigación de las Industrias Cerámicas (AICE), Castellón (Spain)

C09-1988 - Tailoring thermal expansion and Young's modulus of Ti-Nb via precipitation of α"$_{iso}$ and ω phases
Bönisch, M. (Speaker)[1]; Wang, H.[2]
[1]KU Leuven, Heverlee, Leuven (Belgium); [2]Dongguan University of Technology

C10-508 - Numerical Simulation for Optimizing Wafer Level Lens Forming Process
Jeon, D. (Speaker)[1]; Park, M.[2]; Kim, S.[1]
[1]KOREATECH, Chenan (South Korea); [2]Seoul National University of Science and Technology

C10-1167 - online - Seismic Structure-Soil-Structure Interaction (SSSI) between piled neighboring bridges: Influence of height ratio
Alfach, M. (Speaker)[1]
[1]City, University of London

C10-1201 - Prediction of Springback and Cross-Sectional Profile of High-Strength Tube Bars for Automobile Stabilizers Using Numerical Simulation and Artificial Neural Network
Youn, H.-W. (Speaker)[1]; Lee, J.[1]; Park, N.[1]
[1]KITECH - Korea Institute of Industrial Technology, Incheon (South Korea)

C10-1202 - Enhancing Geometry Accuracy in Die-less Incremental Sheet Forming Process with Elastomeric Materials and movable Support Modules
Youn, H.-W. (Speaker)[1]; Park, N.[1]
[1]KITECH - Korea Institute of Industrial Technology, Incheon (South Korea)

C10-1415 - A Study on the Finite Element Analysis of the connections of the Glued-in-rod of Wooden Buildings
Heo, Y. (Speaker)[1]; Oh, K.[2]; Hwang, K.[1]; Lim, H.-w.[1]; Jang, D.[1]; Lee, K.[1]
[1]Chungnam National University, Daejeon (South Korea); [2]Korea Institute of Civil Engineering and Building Technology, Gyeonggi-Do (South Korea)

C10-1980 - Numerical and experimental methodology to implement predictive simulations of the final shape of HIP parts
Chateau-Cornu, J.-P. (Speaker)[1]
[1]Université de Bourgogne, Dijon cedex (France)

C11-1391 - online - Individualised functional products through technology fusion
Zschech, C. (Speaker)[1]; Kühnert, I.[2]; Stommel, M.[2]; Thiele, J.[2]; Vigogne, M.[2]; Weigel, N.[2]
[1]Leibniz Institute of Polymer Research Dresden (IPF); [2]Leibniz Institut für Polymerforschung Dresden e.V.

C11-1953 - Nano-Inks for Electrohydrodynamic Printing of Electronic Devices
Jiang, S. (Speaker)[1]
[1]Iowa State University, Ames (United States)

C11-1986 - Multi-material Laser Powder Bed Fusion: Materials Review
Moutablaleh, H. (Speaker)[1]
[1]University of Twente, Enschede (Netherlands)

C11-2002 - High throughput alloy development using plasma-based directed energy deposition with different powder feedstock materials
Mishra, D. (Speaker)[1]; Mayr, P. (Speaker)[1]; König, C.[2]
[1]Technical University of Munich; [2]Technical University of Denmark, Copenhagen (Denmark)

D: Characterization and Modeling

D01-133 - Combine Circular Economy with Analytical Facilities, Instrumentation and Expertise - Overview of the ReMade@ARI Project illustrated by the Positron Research Infrastructure (pELBE)
Hirschmann, E. (Speaker)[1]
[1]Helmholtz-Zentrum Dresden-Rossendorf

D01-162 - Water diffusion behaviour in the interface of laser-structured aluminium-epoxy adhesive joints
Freund, J. (Speaker)[1]; Förste, F.[2]; Haubrich, J.[1]; Löbbecke, M.[1]; Mantouvalou, I.[3]
[1]German Aerospace Center (DLR), Köln; [2]Technische Universität Berlin; [3]Helmholtz-Zentrum Berlin

D01-1068 - Microstructure and Deformation Behavior of Microstructurally Manipulated Multi-phase Laser Powder Bed Fusion 3D-printed Novel Low Nickel Steels
Capek, J. (Speaker)[1]; Ganvir, A.[2]; Goel, S.[3]; Kantonen, T.[2]; Polatidis, E.[4]; Strobl, M.[4]
[1]Paul Scherrer Institute PSI, Villigen - PSI (Switzerland); [2]University of Turku; [3]VTT Technical Research Centre of Finland, Espoo (Finland); [4]Paul Scherrer Institute, Villigen - PSI (Switzerland)

D01-1451 - Methods to Fabricate Ferromagnetic Nanodisks on SiN Membranes for Transmission Electron Microscopy Studies
Williams, J. (Speaker)[1]; Faley, M.[2]; Lu, P.[2]; Dunin-Borkowski, R.[2]
[1]University Duisburg-Essen; [2]Forschungszentrum Jülich GmbH

D01-1933 - Resolving phase coexistence in VO2 thin films by real space imaging of oxygen atoms
Ahmadi, M.[1]; Atul, A. (Speaker)[1]; Ahmadi, M.[1]; Kooi, B.J.[1]
[1]University of Groningen

D01-2012 - Development of diffusion couple specimen in 7xxx aluminium alloy
De Geuser, F. (Speaker)[1]; Deschamps, A. (Speaker)[1]; Barlier, J.[2]; Pejot, T.[1]
[1]SIMaP, St Martin d'Hères (France); [2]Transvalor, Sophia Antipolis (France)

D01-2020 - Classification of pores from micro-XCT data of additively manufactured components prepared by laser powder bed fusion
Gupta, K.[1]; Waske, A. (Speaker)[1]
[1]Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin

D02-495 - online - Electron beam effects on the oxidation of Cu nanoparticles in environmental scanning transmission electron microscopy
Ziashahabi, a. (Speaker)[1]; Elsukova, A.[2]; Kadkhodazadeh, S.[1]; Langhammer, C.[3]; Nilsson, S.[3]
[1]DTU, lyngby (Denmark); [2]Linköping University; [3]Chalmers University of Technology, Göteborg (Sweden)

D02-1879 - A multi-capillary reactor for operando catalysis experiments at Diamond Light Source, UK
Ramanan, N. (Speaker)[1]; Gibson, E.[2]; Cibin, G.[1]
[1]Diamond Light Source, Didcot (United Kingdom); [2]University of Glasgow

D02-1917 - Operando spectroscopic ellipsometry probing electrochemical interfaces
Zimmer, A. (Speaker)[1]; Broch, L.[1]; Stein, N.[1]; En Naciri, A.[1]
[1]Université de Lorraine, METZ (France)

D02-1984 - In situ TEM investigations towards understanding microscopic mechanisms of amorphous to crystalline transition in olivine at Earth's mantle
Kashiwar, A. (Speaker)[1]; Haq, I.U.[2]; Gauquelin, N.[2]; Schryvers, D.[2]; Cordier, P.[3]; Idrissi, H.[1]
[1]Université Catholique de Louvain-la-Neuve; [2]University of Antwerp; [3]Université de Lille

D04-712 - Janus droplet impact on curved surfaces for controlling of the hydrodynamics
Yun, S. (Speaker)[1]
[1]Korea National University of Transportation, Chungju (South Korea)

D04-1950 - Direct observation of the morphological changes in a carbon fiber composite by means of in-situ micro-CT compression experiment
Pursche, L.[1]; Koschek, K.[1]; Martins-Schalinski, J. (Speaker)[2]
[1]Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, Bremen; [2]Martin-Luther-University, Halle

D05-1187 - Metal foam-salt composite for thermochemical heat storage: mechanical and thermochemical characterization
LIU, Y. (Speaker)[1]; Bornert, M.[2]; Dalmazzone, D.[3]; Dimanov, A.[1]; Hallais, S.[1]; Tanguy, A.[1]
[1]Ecole Polytechnique, Palaiseau Cedex (France); [2]Université Gustave Eiffel, Marne-la-Vallée (France); [3]UCP/ENSTA Paris, Palaiseau (France)

D05-1547 - In-Situ SEM Nanomechanical Testing of Steel, Superalloys and Bond Coatings at -130°C to 1000°C
Hangen, U.D. (Speaker)[1]; Bhowmick, S.[2]; Hintsala, E.[2]
[1]Bruker Nano GmbH, Aachen; [2]Bruker BNSM, Minneapolis (United States)

D05-2026 - Towards quantitively selected solvent - antisolvent mixtures based on solubility for higher quality halide perovskites
Bautista-Quijano, J.R. (Speaker)[1]; Paulus, F.[1]; Telschow, O.[1]; Vaynzof, Y.[2]
[1]Technishce Universität Dresden; [2]Leibniz-Institute for Solid State and Materials Research Dresden

D07-1935 - Quantum chemical insight to passive layer formation and break down mechanisms in ferritic stainless steels
Jamebozorgi, V. (Speaker)[1]
[1]Bielefeld University and University of applied sciences and arts

D08-673 - Towards an Interoperable Digital Representation of Battery Materials and Battery Production
Beran, L. (Speaker)[1]
[1]INM Leibniz-Institute for New Materials gGmbH, Saarbrücken

D08-765 - MatVis: A Framework to Visually Represent Material Science Engineering Methods and RDF Knowledge Graph Creation
Valdestilhas, A. (Speaker)[1]; Bayerlein, B.[2]; Hanke, T.[3]; Muth, T.[2]; Zia, G.[2]
[1]Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin; [2]Federal Institute for Materials Research and Testing, Berlin; [3]Frannhofer, Berlin

D08-772 - NaturalMSEQueries: A natural way to query Material Sciences Engineering data experiments
Javadimasoudian, S. (Speaker)[1]; Valdestilhas, A.[2]
[1]Federal Institute for Materials Research and Testing, Berlin; [2]Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin

D08-980 - The Platform MaterialDigital Workflow Store - Sharing scientific workflows within the MSE Community
Kryeziu, J. (Speaker)[1]
[1]Karlsruhe Institute of Technology (KIT)

D08-1041 - An automated evaluation approach for dilatometer curves
Schuscha, B. (Speaker)[1]; Brandl, D.[1]; Romaner, L.[2]; Scheiber, D.[1]
[1]Materials Center Leoben Forschung GmbH; [2]Montanuniversität Leoben

D08-1222 - online - DISOS: An Ontology Suite for Modelling Dislocations in Crystalline Materials
Ihsan, A.Z. (Speaker)[1]; Fathalla, S.[1]; Sandfeld, S.[1]
[1]Forschungszentrum Jülich GmbH

D08-1420 - Data-driven modeling of fatigue strength prediction of aluminum alloys
Quraishy, M.S. (Speaker)[1]; Kundu, T.k.[2]
[1]Indian Institute of Technology Kharagpur, kharagpur (India); [2]Indian Institute of technology kharagpur

D08-1843 - PMDco - Platform MaterialDigital Core Ontology
Bayerlein, B. (Speaker)[1]; Birkholz, H.[2]; Grundmann, J.[2]; Hanke, T.[3]; Mädler, L.[2]; Sack, H.[4]; Schilling, M.[5]; Waitelonis, J.[4]; von Hartrott, P.[3]
[1]Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin; [2]Leibniz Institut für Werkstofforientierte Technologien - IWT, Berlin; [3]Fraunhofer-Institut für Werkstoffmechanik (IWM), Freiburg; [4]Leibniz-Institut für Informationsinfrastruktur (FIZ), Karlsruhe; [5]Bundesanstalt für Materialforschung und -prüfung, Berlin

D08-1949 - Accelerating Knowledge Generation and Materials Discovery through Automated Digitalization Workflows
Bekemeier, S. (Speaker)[1]; Hilbig, T.[1]; Nickel, S.[1]; Schröder, C.[1]; Yaman, O.-C.[1]
[1]Hochschule Bielefeld University of Applied Sciences and Arts

D08-1978 - Numerical implementation of thermoset curing effect
Luger, M. (Speaker)[1]; Dalbauer, V.[1]; Kölbl, S.[1]
[1]TH Deggendorf - Technologie Campus Hutthurm

D08-1995 - Integrated Intelligent Information System (IIIS) as a Novel Solution for Materials Discovery
Roslyakova, I. (Speaker)[1]; Banko, L.[1]; Dudarev, V.[1]; Ludwig, A.[1]; Thelen, F.[1]
[1]Ruhr-Universität Bochum

D08-1999 - Modeling of incoherent precipitation due to point defect accumulation under irradiation
Siviero, M. (Speaker)[1]; Chartier, A.[1]; Nastar, M.[1]
[1]CEA Paris-Saclay, Gif-sur-Yvette (France)

D10-1579 - On the intramolecular, intermolecular and kinetic characteristics of the PBQX (X = 5, 6, 5-Cl, 5-Br, 6-Cl, 6-Br) electron donor systems and some of their complexes: a DFT approach
Romo-Gutiérrez, A. (Speaker)[1]; Cisneros-García, Z.N.[1]; Rodríguez-Zavala, J.G.[1]
[1]Universidad de Guadalajara, Lagos de Moreno (Mexico)

D10-1905 - Multiphysics and Multiscale Modeling with DAMASK
Roongta, S.[1]; Diehl, M. (Speaker)[2]; Shanthraj, P.[3]; Eisenlohr, P.[4]; Roters, F.[1]; Raabe, D.[1]
[1]Max-Planck-Institut für Eisenforschung, Düsseldorf; [2]KU Leuven; [3]United Kingdom Atomic Energy Authority, Culham (United Kingdom); [4]Michigan State University, East Lansing (United States)

E: Energy and Transportation

E01-290 - Defect Passivation of Perovskite Solar Cells by Synergistic Effects of alkylamine and alkyl acid
Lee, Y.-L. (Speaker)[1]
[1]National Cheng Kung University, Tainan City (Taiwan)

E01-607 - Aerogel-honeycomb composites as core materials in sandwich structures
Henn, F. (Speaker)[1]
[1]German Aerospace Center, Cologne

E01-1219 - Influence of recycled carbon fiber (rCF) matrix interphase on mechanical properties and damage behavior
Becker, C. (Speaker)[1]; Motsch-Eichmann, N.[1]; Hausmann, J.[1]
[1]Leibniz-Institut für Verbundwerkstoffe GmbH, Kaiserslautern

E01-1256 - 6 month-long insight into the oxidation in air of semiconductor Cu2ZnSnS4 nanopowders
Lejda, K. (Speaker)[1]; Janik, J.F.[1]
[1]AGH University of Science and Technology, Kraków (Poland)

E01-1258 - Effect of kesterite oxidation in the ambient air on its semiconductor properties – study of kesterite nanopowders from three different precursor systems
Lejda, K. (Speaker)[1]; Janik, J.F.[1]
[1]AGH University of Science and Technology, Kraków (Poland)

E01-1859 - Synthesis and investigation of carbazole-based halogenated SAM materials
Marcinskas, M. (Speaker)[1]; Magomedov, A.[1]; Malinauskas, T.[1]; Getautis, V.[1]
[1]Kaunas University of Technology

E01-1860 - N-type semiconductors for application in photovoltaic devices
Sviriskaite, L.M. (Speaker)[1]; Getautis, V.[1]; Malinauskas, T.[1]
[1]Kaunas University of Technology

E01-1937 - Efficient electric drone drives based on investment cast coils made from aluminum
Gröninger, M.[1]; Winkler, K.[1]; Lehmhus, D. (Speaker)[1]; Pille, D.[1]; Grams, P.[2]
[1]Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, Bremen; [2]SOBEK Drives GmbH, Rottenburg

E01-1973 - Synthesis and Characterization of Sulfonated Poly(ether ether ketone) for PEM Fuel Cells
Panzer, S. (Speaker)[1]; Brandl, M.[1]; Eitel, D.[1]; Helbig, U.[1]
[1]Technische Hochschule Nürnberg Georg-Simon-Ohm, Nuernberg

E03-1508 - SUPERPORE-X: Functionally graded porous Hastelloy-X nickel superalloy as a new class of materials for gas turbine seals applications
Bętkowska, A.[1]; Podsiadło, M.[1]; Polkowska, A.[1]; Polkowski, W. (Speaker)[2]
[1]Łukasiewicz Research Network – Krakow Institute of Technology, Kraków (Poland); [2]Łukasiewicz Research Network - Krakow Institute of Technology

E03-1709 - Materials Science in Space: CNR-ICMATE on going R&D Activities
Giuranno, D. (Speaker)[1]; Villa, E.[1]; Deambrosis, S.[1]; Miorin, E.[1]; Zin, V.[1]; Montagner, F.[1]; Losurdo, M.[1]; Novakovic, R.[1]; Valenza, F.[1]; Gambaro, S.[1]; Liggieri, L.[1]; Santini, E.[1]; Ravera, F.[1]; Ferrari, M.[1]; Nespoli, A.[1]
[1]National Research Council of Italy, Genova (Italy)

E04-311 - A new generation of Celtec® membranes with improved performance in vanadium redox flow batteries
Larionov, E. (Speaker)[1]; Belack, J.[2]; Benicewicz, B.C.[3]; Henschel, C.[2]; Howard, B.[3]; Karki, I.[3]; Malko, D.[2]
[1]BASF, Ludwigshafen am Rhein; [2]BASF Catalysts Germany GmbH, Ludwigshafen am Rhein; [3]University of South Carolina, Columbia (United States)

E04-420 - Developing Water Soluble Organic Redox Couples for Redox Flow Batteries
Grattagliano, A. (Speaker)[1]; D'Epifanio, A.[1]; Forchetta, M.[1]; Freitas, W.[1]; Galloni, P.[1]; Licoccia, S.[1]; Mecheri, B.[1]; Montero, J.[1]
[1]University of Rome Tor Vergata

E05-734 - Material property dependent process parameters for slot die coating
Wiegandt, A. (Speaker)[1]; Langer, F.[1]; Schwenzel, J.[1]
[1]Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, Bremen

E05-866 - online - Rice huske derived anodes for Li-ion batteries and beyond
Gualtieri, E. (Speaker)[1]; Balducci, A.[2]; Leibing, C.[2]; Pasquali, M.[1]; Scaramuzzo, F.[1]
[1]University of Rome Sapienza; [2]University of Jena F. Schiller

E05-1042 - Synthesis optimization of a Ni-rich cathode by coprecipitation as oxalate
Di Veroli, M. (Speaker)[1]
[1]Sapienza University of Rome

E05-1260 - Electro-chemo-mechanical regulation of lithium heterogeneities and crystallographic defects in voltage degradation of solid-state batteries
Liu, C. (Speaker)[1]; Roters, F.[1]; Raabe, D.[1]
[1]Max-Planck-Institut für Eisenforschung GmbH, Düsseldorf

E05-1394 - online - Revisiting the Hydroxyphosphate LiFePO4OH Cathode for Lithium-ion Batteries
Barpanda, P. (Speaker)[1]
[1]Indian Institute of Science, bangalore (India)

E05-1457 - A novel organic synthesis route to fabricate layered oxide Li-ion cathodes
Beltrán, A.M.[1]; Garcia-Garcia, F.[1]; Arevalo, C.[1]; Pérez-Soriano, E.[1]; Montealegre, I.[1]; Lozano, J.G. (Speaker)[1]
[1]Universidad de Sevilla

E01-1459 - online - Interface engineered fast ion conduction in complex metal hydride/metal oxide nanocomposites: Interplay between hydride and oxide properties
Ngene, P. (Speaker)[1]
[1]Utrecht University

E05-1703 - Ta –doping in NMC: Where does it go and what does it do?
Monsees, F. (Speaker)[1]
[1]Volkswagen, Salzgitter

E05-1979 - Thermodynamic and kinetic study of LiFePO4 battery cathode reduction in a composite pellet at intermediate temperatures
Kim, Y. (Speaker)[1]; Sohn, I.[1]
[1]Yonsei University, Seoul (South Korea)

E05-1997 - Green Recycling of lithium ion batteries
Cingolani, A. (Speaker)[1]
[1]Universita degli Studi di Genova

E05-1999 - Chemically Activated Coating Process of Ni-Rich NMCs and Characterizations
Guo, Y. (Speaker)[1]
[1]Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen

E06-237 - Insights into P-type Iron- and manganese-based layered sodium cathodes
Peng, J. (Speaker)[1]; Indris, S.[1]
[1]Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen

E06-396 - Cross-linked Natural Polymers as Sustainable Binders for Water-Based EDLC Electrodes
Karimi Jafari, M. (Speaker)[1]; Varzi, A.[1]
[1]Helmholtz-Institut Ulm

E06-436 - Development and Optimization of Platinum-group-metal-free-based Air electrodes for Rechargeable Zn Air Batteries (ZABs)
Nisa, K.U. (Speaker)[1]; Ricciardi, B.[1]; Montero, J.[1]; Freitas, W.[1]; Licoccia, S.[1]; D'Epifanio, A.[1]; Mecheri, B.[1]
[1]University of Rome Tor Vergata, Italy

E06-507 - Effect of the GB and amorphous phases on Na-ion transport in NaSICON solid electrolyte
Deshmukh, V.A. (Speaker)[1]
[1]Technische Universität Darmstadt

E06-1263 - Fast charge storage in calcium batteries enabled by a novel porphyrin complex as cathode material
Smok, T. (Speaker)[1]; Fichtner, M.[2]; Abouzari-Lotf, E.[2]; Shakouri, S.[1]; Pammer, F.[2]; Diemant, T.[2]; Roy, A.[2]; Xiu, Y.[2]; Klyatskaya, S.[1]; Ruben, M.[1]
[1]Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen; [2]Helmholtz Institute Ulm (HIU)

E06-1460 - Structural characterisation of layered transition metal oxide cathodes for sodium-ion batteries fabricated via a novel organic synthesis route
Lozano, J.G. (Speaker)[1]; García-Garcia, F.[1]; Arevalo, C.[1]; Pérez-Soriano, E.[1]; Montealegre, I.[1]; Beltrán, A.M.[1]
[1]Universidad de Sevilla

E06-1989 - Gagat as new low-cost and high-capacity anode for sodium-ion batteries
Madajski, P. (Speaker)[1]; Biniak, S.[1]; Cymann-Sachajdak, A.[2]; Trykowski, G.[1]; Wilamowska-Zawlocka, M.[2]
[1]Nicolaus Copernicus University in Toruń; [2]Gdansk University of Technology, Gdańsk (Poland)

E06-1998 - A cobalt-free high-voltage Na2Fe2(SO4)3 cathode material for Na-ion batteries
Hanc, A.[1]; Zając, W. (Speaker)[1]; Milewska, A.[1]; Molenda, J.[1]
[1]AGH University of Krakow

E06-2013 - Vacancies in Prussian White Cathode Materials employing Positron Annihilation Spectroscopy
Staab, T.E. (Speaker)[1]
[1]University of Würzburg

E07-452 - Transition Metal High-Entropy Oxides as Electrocatalysts for Oxygen Evolution Reaction in Anion Exchange Membrane Water Electrolyzers
Montalto, M. (Speaker)[1]; D'Epifanio, A.[1]; Freitas, W.[1]; Mecheri, B.[1]
[1]University of Rome Tor Vergata

E07-1346 - Effect of ionomer's structure and slurry for the electrode preparation on AEMFC Performance
Lee, H. (Speaker)[1]; Yuk, E.[1]; Kim, S.-K.[1]; Shin, D.[1]; Bae, B.[1]
[1]Korea Institute of Energy Research, Daejeon (South Korea)

E07-1360 - Study on Performance of MEAs with Various Compositions under Non-uniform Large Area Fuel Cell Operation Conditions
Kim, S.[1]; Sohn, Y.-J.[1]; Ji, Y.[1]; Woo, S.[1]; Park, S.-H.[1]; Jung, N.[2]; Kang, Y.S. (Speaker)[1]; Yim, S.-D.[1]
[1]Korea Institute of Energy Research, Daejeon (South Korea); [2]Chungnam National University, Daejeon (South Korea)

E07-1894 - Influence of Solvent Composition on Ink Structure and Morphology in PEMFC Catalyst Layer
Woo, S.H.[1]; Kim, S.[1]; Woo, S. (Speaker)[1]; Park, S.-H.[1]; Kang, Y.S.[1]; Jung, N.[2]; Yim, S.-D.[1]
[1]Korea Institute of Energy Research, Daejeon (South Korea); [2]Chungnam National University, Daejeon (South Korea)

F: Materials for Healthcare

F01-70 - Metal Organic Frameworks Fused to a Fungal-Derived Metabolite for the Treatment of Neuroblastoma
Nduka, I. (Speaker)[1]
[1]University of Salford

F01-403 - Phosphate-based Glass fibres Prepared by Coacervation
Moghaddam, Z. (Speaker)[1]; Hoxha, A.[1]; Tomás Nery, E.[1]; Carta, D.[1]
[1]University of Surrey, Guildford (United Kingdom)

F01-497 - Calcium silicate dentine regeneration cements: what benefits do bioactive glass and lithium ion bring?
Simila, H. (Speaker)[1]; Boccaccini, A.[2]
[1]Friedrich-Alexander-Universität Erlangen-Nürnberg; [2]Institute of Biomaterials, Erlangen

F01-512 - The osteoconductive and antibacterial responses of photothermally treated biphasic Al2O3-TiB2 - TiO2/ CuO/ CeO2/ CaO Scaffolds
Daskalakis, E. (Speaker)[1]
[1]University of Leeds

F01-611 - online - Wearable Microneedle-Based Biosensor for Detecting Biomarkers in Interstitial Fluids
Omar, R. (Speaker)[1]
[1]Technion - Israel Institute of Technology, Haifa (Israel)

F01-800 - Synthesis and characterisation of multifunctional mesoporous bioactive glass nanoparticles for the sustained drug release of phytotherapeutics
Damian-Buda, A.-I. (Speaker)[1]; Nawaz, Q.[1]; Ünalan, I.[1]; Beltrán, A.M.[2]; Boccaccini, A.R.[1]
[1]Institute of Biomaterials, Erlangen; [2]Institute of Materials Science of Seville

F01-853 - Mucoadhesion and biological evaluation of brinzolamide-loaded electrospun nanofibers – in vitro and ex vivo assessment
Cegielska, O. (Speaker)[1]; Sajkiewicz, P.[1]; Sierakowski, M.[2]
[1]Institute of Fundamental Technological Research Polish Academy of Sciences, Warszawa (Poland); [2]Cardinal Stefan Wyszynski University in Warsaw, Warszawa (Poland)

F01-965 - Development of Methylacrylated Alginate Bioinks for Drop on Demand Printing
Röder, J. (Speaker)[1]
[1]Friedrich-Alexander-Universität Erlangen-Nürnberg

F01-1197 - Cerium doped dendritic mesoporous bioactive glass nanoparticles for bone regeneration
Xu, Z. (Speaker)[1]; Keller, E.[1]; Zheng, K.[2]; Boccaccini, A.R.[1]
[1]Institute of Biomaterials, University of Erlangen-Nuremberg; [2]Jiangsu Province Engineering Research Center of Stomatological Translational Medicine & Jiangsu Key Laboratory of Oral Diseases, Nanjing Medical University

F01-1203 - Development and Characterisation of a Thermoplastic Composite for Dental Restorative Applications
Elfakhri, F. (Speaker)[1]
[1]Northumbria University, Newcastle upon Tyne (United Kingdom)

F01-1204 - Fabrication and characterization of Bismuth doped bioactive glasses for tissue engineering
Li, M. (Speaker)[1]; Zheng, K.[2]; Boccaccini, A.R.[1]
[1]Institute of Biomaterials, FAU Erlangen-Nürnberg; [2]Engineering Research Center of Stomatological Translational Medicine , Nanjing Medical University

F01-1341 - online - Electrofabrication and characterization of multifunctional, asymmetric bilayer films based on chitosan-gelatin-mesoporous bioactive glass nanoparticles for guided bone regeneration
Akhtar, M.A. (Speaker)[1]; Boccaccini, A.R.[1]
[1]University of Erlangen-Nuremberg

F01-1890 - Human placenta-derived biomaterials for in vitro tissue models
Hackethal, J. (Speaker)[1]
[1]THT Biomaterials GmbH, Vienna (Austria)

F01-1893 - Novel biomimetic red blood cells with hydrogen sulphide scavenging properties
Suzuki, Y. (Speaker)[1]; Matsumoto, K.[1]; Sakai, H.[2]; Taguchi, K.[1]
[1]Keio University, Tokyo (Japan); [2]Nara Medical University, Tokyo (Japan)

F01-1948 - Effects of Tin (Sn) addition on the mechanical and tribological properties of the Mg-Zn-Si alloy
Gupta, G. (Speaker)[1]; Ganguly, S.[2]; Jain, J.[3]; Singh, S.S.[4]
[1]Indian Institute of Technology Kanpur; [2]CSIR-Institute of Minerals & Materials Technology (CSIR-IMMT), Bhubaneswar (India); [3]Indian Institute of Technology Delhi; [4]Indian institute of Technology Kanpur

F01-2011 - Polyelectrolyte Complex-loaded Hyaluronic Acid Hydrogel for Minocycline Release
Habibah, T. (Speaker)[1]
[1]Contipro a.s., Dolni Dobrouc (Czech Republic)

F01-2031 - online - Quercetin-Loaded Electrospun Nanofibers for Skin Re-Innervation
Vieira, T. (Speaker)[1]
[1]Cenimat/i3N, Caparica (Portugal)

F04-1293 - Ultra-fine CuO-ZnO composite powder used for depositing of functional coatings with antimicrobial properties on the surfaces of sanitary fittings
Pepłowska, K. (Speaker)[1]
[1]Łukasiewicz Research Network-Institute of Non-Ferrous Metals, Gliwice (Poland)

F04-1586 - online - Specific discrimination of pathogenic bacteria that cause synovial fluid infection using a video micro-sampling Raman spectroscopy system: In-Vitro Study
Al Ghaithi, A. (Speaker)[1]; Al Bimani, A.[2]; Al Badi, K.[3]; Al Jabri, Z.[1]; Husband, J.[4]
[1]Sultan Qaboos University/ college of medicine, Muscat (Oman); [2]Sultan Qaboos University/ College of medicine, Muscat (Oman); [3]Oman medical speciality board, Muscat (Oman); [4]Sultan Qaboos University, Muscat (Oman)

F04-1675 - online - Antiviral and antibacterial potential of air filters functionalized with Ag2O, ZnO and CuO particles
RIBEIRO, B. (Speaker)[1]; Echeverry-Rendón, M.[2]; Vazquez-Lopez, A.[3]; Vazquez-Pufleau, M.[2]; Llamosi, M.[4]; Sempere, J.[4]; Wang, D.-Y.[2]; Yuste, J.[4]; Domenech, M.[4]; LLorca, J.[2]
[1]IMDEA Materials Institute, Madrid (Spain); [2]IMDEAmateriales, Madrid (Spain); [3]Universidade Rey Juan Carlos, Madrid (Spain); [4]Intituto de Salud Carlos III, Madrid (Spain)

F04-2024 - "Keimfreies Fliegen": An Interdisciplinary Approach for Microbial Safeguarding of the Airplane Cabin Using Novel Antimicrobial Materials
Dluzak, T. (Speaker)[1]; Koch, S.M.[1]; Geier, S.[2]; Meller, F.[3]; Anton, R.[4]; Schulz, U.[4]; Wierach, P.[2]; Witte, K.[5]; Leuko, S.[1]; Moeller, R.[1]; Cortesão, M.[1]
[1]German Aerospace Center (DLR), Institute of Aerospace Medicine (ME), Köln; [2]German Aerospace Center (DLR), Institute of Composite Structures and Adaptive Systems (FA), Braunschweig; [3]German Aerospace Center (DLR), Institute of System Architectures in Aeronautics (SL), Hamburg; [4]German Aerospace Center (DLR), Institute of Materials Research (WF), Köln; [5]German Aerospace Center (DLR), Flight Experiments (FX), Oberpfaffenhofen

F06-103 - Additive manufacturing of Ti6Al4V implants via Fused Filament Fabrication (FFF)
Eickhoff, R. (Speaker)[1]; Nötzel, D.[1]; Antusch, S.[1]; Hanemann, T.[1]
[1]Karlsruhe Institute of Technology

F06-207 - online - On-chip biodegradation dynamics of elastic microgel matrices
Won, Y.[1]; Mohizin, A.[2]; Sung, B. (Speaker)[3]
[1]Korea University, Seoul (South Korea); [2]KIST Europe, Saarbrücken; [3]University of Science & Technology, Daejeon (South Korea)

F06-748 - Microstructure of porous hydroxyapatite scaffolds processed by freeze casting study
Brant de Campos, J. (Speaker)[1]; Alves Pelicarto da Silva, C.[1]; Baeta de Souza Junior, E.[1]; Moura, F.J.[2]; Sampaio Aguilar, M.[3]; dos Santos Aguilera, L.[1]
[1]Rio de Janeiro State University; [2]Pontificia Universidade Catolica, Rio de Janeiro (Brazil); [3]UNESA, Rio de Janeiro (Brazil)

F06-967 - 3D-printed electrochemical multi-sensors based on biocompatible polymers
Lanzalaco, S. (Speaker)[1]; Aleman, C.[1]; Bertran, O.[1]; Fontana-Escartín, A.[1]; Zhilev, G.[1]
[1]Universitat Politecnica de Catalunya, Barcelona (Spain)

F06-1077 - Topological optimization and personalization of 3D-printed tissue engineering chamber for soft tissue reconstruction
Trinth, X.-T. K. (Speaker)[1]; Cosson, M.[2]; Dao, T.-T.[1]; Destouesse, J.[3]; Lecomte-Grosbras, P.[1]; Mayeur, O.[1]; Witz, J.-F.[1]
[1]Centrale Lille Institut; [2]Hopital Jeanne de Flandre, CHU, Lille (France); [3]Lattice Medical, Lille (France)

F06-1151 - Digital Materials – Bioinspired 3D-printing concept for photopolymers with increased toughness
Theuer, T. (Speaker)[1]; Baumgartner, S.[2]; Koch, B.[1]; Liska, R.[3]; Stampfl, J.[1]
[1]Institute of Materials Science and Technology, TU Wien; [2]Cubicure GmbH, Vienna (Austria); [3]Institute of Applied Synthetic Chemistry, TU Wien, 1060 Vienna (Austria)

F06-1174 - Microencapsulation of Bioactive Cargos via Electrohydrodynamic Jetting: A Tool to Engineer 3d Functional Structures
Mishra, A. (Speaker)[1]; Antonelli, Y.[1]; Bauernschmitt, P.[1]; Herrmann, G.[1]; Leal-Egaña, A.[1]; Selhuber-Unkel, C.[1]
[1]Heidelberg University

F06-1981 - Towards heart tissue regeneration: a piezoelectric patch with smart nanocarriers for on-demand drug release
Barberi, J. (Speaker)[1]; Benedetto-Mas, A.[1]; Montalbano, G.[1]; Battegazzore, D.[1]; Fina, A.[1]; Fiorilli, S.[1]; Vitale-Brovarone, C.[1]
[1]Politecnico di Torino

F06-1993 - 3D printing of microcellulose by binder jetting: a cheap and green production of personalized medicine
Hamoud, A. (Speaker)[1]; Arboledas Navarro, J.[1]; Barrenetxe Sánchez, M.[1]; Keridou, I.[1]; González, D.[1]; Conesa, A.[1]; Martinez, S.[1]; Castejón Galan, P.[1]
[1]Leitat, Terrassa (Spain)

F06-2019 - In-vitro Remote Mechanical Stimulation of Cells: Production and Characterization of Magnetic Alginate Beads.
El Akkawi, M. (Speaker)[1]; Trikalitis, V.D.[1]; Gibson, I.[1]; Goulas, C.[1]; Rouwkema, J.[1]
[1]University of Twente, Enschede (Netherlands)

F07-577 - Biodegradable metal foams for use as bone implants
Narciso, J. (Speaker)[1]; Mora-Díaz, S.[2]; Ramos-Fernández, E.[1]; Álvarez-Prada, A.[1]
[1]University of Alicante; [2]Hospital Universitario Dr. Balmís, Alicante (Spain)

F07-841 - Ternary Zn-Mg-Si composite with improved mechanical properties prepared by powder metallurgy methods
Nečas, D. (Speaker)[1]; Boukalová, A.[1]; Kubásek, J.[1]
[1]University of Chemistry and Technology, Prague (Czech Republic)

F07-1880 - Development of an innovative Ta-Nb-Ti based multi-component alloy system for biomedical applications
Regenberg, M. (Speaker)[1]
[1]Otto von Guericke University Magdeburg

F07-1919 - The Effect of Powder Size and Morphology on the Sinterability of Bioresorbable Mg-Sr/Ca based Alloys
Azadi Chegeni, A. (Speaker)[1]; O'Cearbhaill, E.[1]; Celikin, M.[1]
[1]University College Dublin (UCD)

F08-642 - Application of advanced characterization techniques to analyze biomolecule coatings
Aktan, M.K. (Speaker)[1]; Killian, M.S.[2]; Braem, A.[1]
[1]KU Leuven; [2]University of Siegen

F08-1001 - NOMAD: Novel biomaterials to prevent dental peri-implant infections
Braem, A. (Speaker)[1]; Barlic, A.[2]; Chevolot, Y.[3]; Courtney, M.[4]; Courtois, N.[5]; François, I.[6]; Gremillard, L.[7]; Hanrahan, J.[4]; Keaveney, S.[8]; Killian, M.S.[9]; Kübra Aktan, M.[1]; Laurenceau, E.[3]; Rodriguez, N.[10]; Sanz, M.[11]; Teughels, W.[1]; Thevissen, K.[1]; Van Meerbeek, B.[1]; Vleugels, J.[1]; van der Mei, H.[12]
[1]KU Leuven; [2]Educell d.o.o., Ljubljana (Slovenia); [3]Ecole Centrale de Lyon; [4]Glantreo Ltd, Cork (Ireland); [5]Anthogyr SAS, Sallanches (France); [6]Health House, Leuven (Belgium); [7]Centre National de la Recherche Scientifique Lyon; [8]Croom Precision Tooloing Ltd, Limerick (Ireland); [9]Universität Siegen; [10]Atrineo AG, Karlsruhe; [11]Universidad Complutense de Madrid; [12]University Medical Center Groningen

F08-1161 - Always-On Photocatalytic Antibacterial Facemask with Mini UV-LED Array
Nguyen, U.N.T. (Speaker)[1]; Do, K.H.[2]; Jang, B.[3]; Kim, J.H.[1]; Lee, S.M.[1]
[1]Korea University of Science and Technology, Daejeon (South Korea); [2]Yonsei University, Seoul (South Korea); [3]Korea Institute of Machinery and Materials, Daejeon (South Korea)

F08-1291 - online - Osteoinductive 3D scaffolds obtained by Sol-Gel method with multiple surface ionic drainage channels
Riosalido, P.[1]; Murciano, A.[2]; Velasquez, P.[2]; De Aza, P. (Speaker)[2]
[1]Universidad Miguel Hernández de Elche; [2]Universidad Miguel Hernandez, Elche (Spain)

F08-1697 - online - Improving Corrosion Resistance of Magnesium Alloys for Orthopedic Implants using Calcium Phosphate Coatings Deposited by RF Magnetron Sputtering
Prosolov, K. (Speaker)[1]; Kashin, A.[1]; Luginin, N.[1]; Sharkeev, Y.[1]
[1]Institute of Strength Physics and Materials Science of Siberian Branch of Russian Academy of Sciences, Tomsk (Russia)

F08-1841 - Tribologically-induced oxidation of a zirconium nitride multilayer coated knee explant
Rau, J. (Speaker)[1]; Thuvander, M.[1]
[1]Chalmers University of Technology, Göteborg (Sweden)

F08-1872 - Development of biosurfactant assisted brushite-hydroxyapatite coatings on 316L stainless steel with improved corrosion and biological properties
Pakanati, S.P. (Speaker)[1]; Das, S.[1]; Das, K.[1]
[1]Indian Institute of Technology Kharagpur, Kharagpur (India)

F08-1874 - Additive manufacturing and laser-texturing of near-beta Ti-13Nb-13Zr alloy for tuning its microstructure and surface state to enhance biofunctionality
Goldberg, P. (Speaker)[1]; Sánchez, M.M.[1]; Striggow, F.[1]; Pilz, S.[1]; Hempel, U.[2]; Zwahr, C.[3]; Lasagni, A.F.[4]; Gebert, A.[1]; Hariharan, A.[1]; Schell, F.[3]; Hantusch, M.[1]; Cichocka, M.O.[1]; Pérez Rodriguez, N.[1]; Voß, A.[1]; Giebeler, L.[1]; Hoffmann, V.[1]
[1]Leibniz Institute for Solid State and Materials Research (IFW) Dresden; [2]Institute for Physiological Chemistry, Dresden; [3]Fraunhofer Institute for Materials and Beam Technology (IWS) Dresden; [4]Institute for Manufacturing Science and Engineering, Dresden

F08-1990 - Biocompatibility evaluation of carbon-based coatings: boron doping effect
Fróis, A. (Speaker)[1]; Santos, A.[1]; Ferreira, D.[1]; Louro, C.[1]
[1]University of Coimbra

G: Education, Strategy, and Technology Transfer

G01-1527 - Undergraduate students vs. Materials Science and Engineering
Beltrán, A.M. (Speaker)[1]; Arevalo, C.[1]; García-García, F.[1]; Lozano, J.G.[1]; Montealegre, I.[1]; Pérez-Soriano, E.[1]
[1]Universidad de Sevilla

G01-1644 - Utilization of R&D Program Evaluation System to Accelerate EU's Mission Achievement concerned with 'Materials Arena'
Lee, J. (Speaker)[1]; Lim, S. (Speaker)[1]; Jeong, Y.[1]; Kim, D.[1]; Kim, S.[1]
[1]Korea Institute of S&T Evaluation and Planning, Chungbuk (South Korea)

H: Materials for Circularity and Sustainability

H03-783 - Lithium Recovery from end-of-life Lithium Batteries by Chlorine Roasting Process
Park, E. (Speaker)[1]; PIN, M.W.[1]; KIM, M.[1]; KIM, Y.H.[1]
[1]Korea Institute of Industrial Technology (KITECH), Incheon (South Korea)

H03-792 - Concentration of Precious Metals recovered from Electronic Scrap using Oxidative Refining Process
Park, E. (Speaker)[1]; PIN, M.W.[1]; KIM, M.[1]; KIM, Y.H.[1]
[1]Korea Institute of Industrial Technology (KITECH), Incheon (South Korea)

H03-1453 - Comparison of end-of-life and production waste of NMC-111 cathode materials of batteries in an electrochemical recycling process
Revello, M. (Speaker)[1]
[1]SRH Berlin University Applied Science

H03-1886 - A Standardization Study of Recycling of Cathode Materials in Wasted Batteries
Jung, H.J. (Speaker)[1]; Han, S.W.[1]; Hong, C.K.[1]; Lee, S.B.[1]; Shin, J.[1]; Shin, J.H.[1]
[1]KTR - Korea Testing and Research Institute, 98, Gyoyukwon-ro, Gwacheon-si, Gyeonggi-do (South Korea)

H05-875 - Investigation of Binder Recovery from Spent Li-ion Batteries by Supercritical CO2
Akbas, Y. (Speaker)[1]; Zachmann, N.[1]; Ebin, B.[1]
[1]Chalmers University of Technology, Göteborg (Sweden)

H05-1384 - Climatic effects of pyrolytic devices; application of an evaluation method for a comparative study
Schnell, T. (Speaker)[1]; Adam, C.[2]; Beck, G.[1]; Gunza, N.[1]; Hassan, M.[1]; Khadse, H.D.[1]; Perez Bracamontes, C.[1]; Schnell, R.[1]; Suryawanshi, R.[1]
[1]SRH Berlin University; [2]Adam + Partner, Garmisch Partenkirchen

H05-1502 - online - Sustainable Production of Enzyme-Embedded Microbial Biodegradable Agricultural Plastics towards a Circular Economy
Kotzampasaki, M. (Speaker)[1]; Bartzanas, T.[2]; Maraveas, C.[2]
[1]AUA, athens (Greece); [2]Agricultural University Of Athens, Athens (Greece)

H05-1520 - Optimization of methane production from Pyrolysis Wood Gas and its storage
Gunza, N. (Speaker)[1]; Pfeiffer, T.[2]; Suryawanshi, R.[1]; Schnell, R.[1]
[1]SRH Berlin University; [2]SRH Berlin University Applied Science

H05-1992 - Bio-inspired porous polymers fabricated via supercritical CO2 foaming for reversible white coloration
Borgmann, L.M. (Speaker)[1]; Johnson, S.[1]; Wiegand, G.[1]; Hölscher, H.[1]
[1]Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen

H05-2005 - The Membrane Processes to Capture Carbon Dioxide at Blue Hydrogen Production
Heo, S. (Speaker)[1]; Lee, J.H.[1]; Chue, K.-T.[1]; Lee, D.-w.[1]; Kim, J.-K.[2]; Lee, C.S.[3]; Yeo, J.-g.[1]
[1]Korea Institute of Energy Research(KIER), daejeon (South Korea); [2]Hanyang University, Seoul (South Korea); [3]Airrane, Cheongju (South Korea)

H05-2006 - The Experimental and Performance Modelling of Membrane-based Carbon Capture Processes in Power Plant and Blue Hydrogen Production
Yeo, J.-g. (Speaker)[1]; Heo, S.[1]; Kim, J.-K.[2]; Lee, J.H.[1]; Lee, S.[1]
[1]Korea Institute of Energy Research(KIER), Daejeon (South Korea); [2]Hanyang University, Daejeon (South Korea)

H09-164 - A hybrid AI based approach for the optimization of composite coatings development through electroplating processes
Gregores Coto, A.[1]; Precker, C.E.[1]; Muiños Landin, S. (Speaker)[1]
[1]AIMEN Techology Centre, Pontevedra (Spain)

H09-224 - Development of Graphene nanocomposites from textile industry waste
Brant de Campos, J. (Speaker)[1]; Borges Machado, P.[1]; Bottega Peripolli, S.[1]; Calixto de Andrade, M.[1]; Vargas Cesar, D.[1]; de Souza Baeta Junior, E.[1]
[1]Rio de Janeiro State University

H09-637 - Evaluating opportunities for refuse derived fuel in energy-based industrial symbiosis towards a circular economy
Sarquah, K. (Speaker)[1]; Beck, G.[2]; satyanarayana, S.[3]; Nelles, M.[3]; Hartmann, M.[4]
[1]SRH Berlin University Applied Science; [2]Institute of Applied Research Strategies, Berlin; [3]University of Rostock; [4]SRH Hochschule Berlin

H09-656 - online - Synthesis of ZrO2 from ZrSiO4: A novel process based on concentrated solar energy
Piñuela Noval, J. (Speaker)[1]; Fernández, A.[1]; Fernández-González, D.[1]; Gómez-Rodríguez, C.[2]; Verdeja, L.F.[3]
[1]Centro de Investigación en Nanomateriales y Nanotecnología, El Entrego (Spain); [2]Universidad Veracruzana, Coatzacoalcos (Mexico); [3]Universidad de Oviedo

H09-1775 - Polylactid as Sustainable Optical Material for Lighting Applications
Kesting, M. (Speaker)[1]; Hemmerich, M.[1]; Meyer, J.[1]; Seide, G.[2]
[1]Hamm-Lippstadt University of Applied Sciences; [2]Maastricht University

H09-1924 - Post-consumer PET flakes processing by additive and formative technologies
Magalhães da Silva, S. (Speaker)[1]; Castro, I.[1]; Lima, P.[1]; Martinho Oliveira, J.[1]
[1]University of Aveiro, Oliveira de Azeméis (Portugal)

H09-2010 - online - Effect of processing methodology on the properties of rubber-based composites reinforced with leather waste
Melo de Lima, L. (Speaker)[1]; Almeida, M.[1]; Coelho, C.[2]; Fonseca, C.[1]; Lopes, M.[1]; Neves, S.[1]; Pinho, S.[1]; Santos, J.[1]
[1]University of Porto; [2]Atlanta—Componentes para o Calçado, Lda., Lixa (Portugal)

H10-669 - Hydrogen metallurgy to decarbonize the steel and copper production industries
Esteban Quiles, J.[1]; López, F.[1]; Celada Casero, C. (Speaker)[1]
[1]National Centre for Metallurgical Research (CENIM-CSIC)

H10-766 - In-situ Observation of Surface and Grain Boundary Wettings of Ultra-Low Carbon Steels by Liquid Copper
Kang, S. (Speaker)[1]; Kim, H.[1]; Lee, J.[1]; Park, H.[1]
[1]Korea University, Seoul (South Korea)

H10-1438 - In-situ Observation of Phase Transition of Silico-Ferrite of Calcium and Aluminium by Hydrogen Reduction
Kim, H. (Speaker)[1]; Lee, J.[1]
[1]Korea University, Seoul (South Korea)

H10-1581 - online - Soft sensor for Three-dimensional reaction field in a metallurgical reactor based on CFD and machine learning: Methods and Application
Wang, Y. (Speaker)[1]; Liu, Z.[1]; Zhang, J.[1]
[1]University of Science and Technology Beijing

H10-1818 - A succinct method to recycle WE43 Mg alloys – from wasted chips to consolidated billets
Zhao, X.[1]; Guan, D. (Speaker)[2]
[1]University of Southapton; [2]University of Southampton

H10-1962 - Hydrogen as an alternative to natural gas for copper deoxidation during fire refining: A process simulation study
Celada-Casero, C. (Speaker)[1]; Rivera Romero, A.[2]; López, F.A.[1]; Rios, G.[3]; Ruiz, I.[3]
[1]Spanish National Research Council, Madrid (Spain); [2]Spanish National Research Council, Madrid (Spain); [3]Atlantic Copper S.L.U, Huelva (Spain)

H10-2016 - Reducing Iron Oxide with Ammonia: A Sustainable Path to Green Steel
Ma, Y. (Speaker)[1]; Raabe, D.[1]
[1]Max-Planck-Insitut für Eisenforschung, Düsseldorf

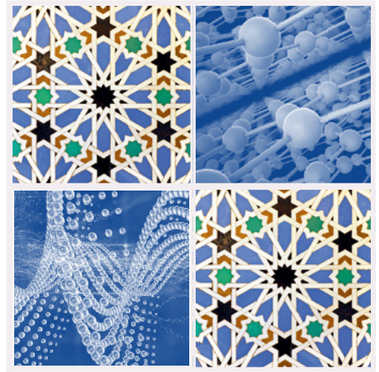
H10-2022 - Hydrogen contents in iron produced via hydrogen metallurgy
Özgün, Ö. (Speaker)[1]; Lu, X.[2]; Ma, Y.[1]; Raabe, D.[1]
[1]Max-Planck-Institüt für Eisenforschung GmbH, Dusseldorf; [2]Norwegian University of Science and Technology, Trondheim (Norway)"

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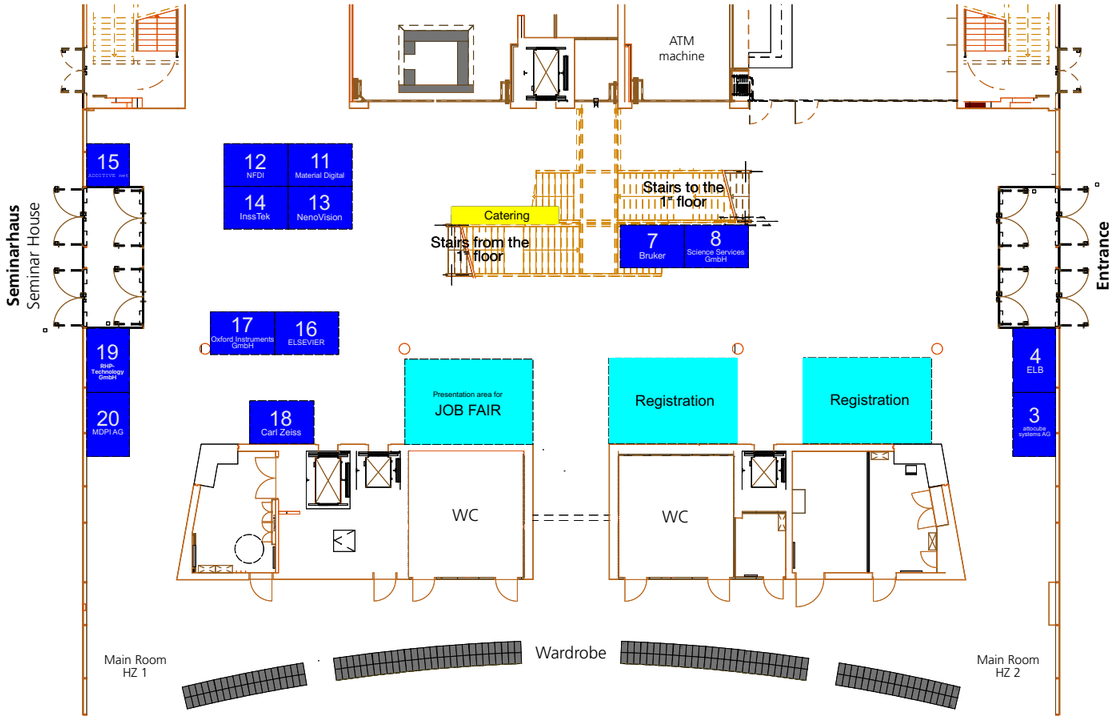
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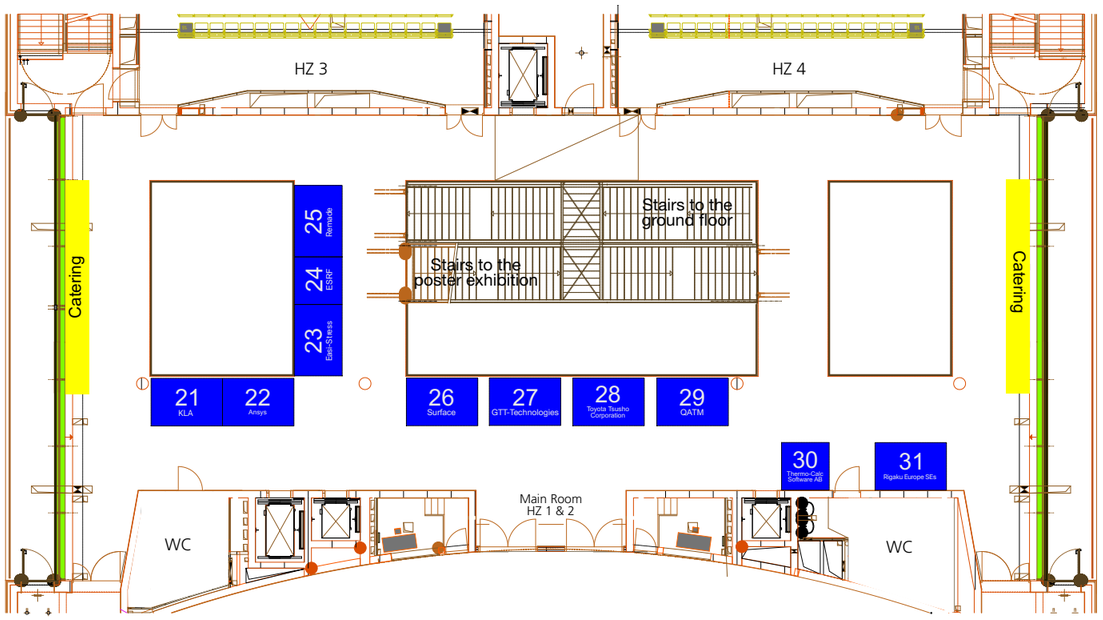
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1st Floor



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ROOMS
- HZ 1-15
- FOYER HZ

AREAS
- B: Structural Materials
- C: Processing
- G: Education, Strategy, and Technology Transfer
- H: Materials for Circularity and Sustainability

SEMINARHAUS
SEMINAR HOUSE

ROOMS
- SH 0.101 - 0.109
- SH 1.101 - 1.108

AREAS
- A: Functional Materials
- D: Characterization and Modeling
- E: Energy and Transportation
- F: Materials for Healthcare

FURTHER HIGHLIGHTS
- PLENARY LECTURES
- EXHIBITION
- WOMENS LUNCH
- JOB FAIR
- VIP AREA (HZ 15)
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