

MSE 2024

24 - 26 Sep 2024 (Darmstadt)

dgm.de

Topic I: Circular Materials

I03: Innovative Approaches to Sustainable Materials Recycling: Advancing Circular Economy Principles

The global pursuit of sustainable development necessitates a paradigm shift in materials management, focusing on efficient resource utilization and reduced environmental impact. Our symposium aims to foster interdisciplinary dialogue and collaboration among researchers, engineers, and industry experts. We will explore cutting-edge advancements, challenges, and opportunities in materials recycling, with a particular emphasis on the following key areas:

- **Recycling Technologies and Processes:** We will examine the latest innovations in recycling methods for diverse materials, including state-of-the-art techniques for sorting, decontamination, extraction and reprocessing. Topics will encompass the recycling of complex composite materials, high-performance metals, challenging plastics, and others.
- **Design for Recyclability:** Embracing the principles of a circular economy is essential for achieving sustainability goals. We will discuss strategies to design materials and products for recyclability, enhance product life cycles, and minimize waste generation, thereby promoting resource conservation.
- **Materials Characterization and Analysis:** Accurate characterization and assessment of recycled materials are fundamental to ensuring their quality and performance. Discussions will cover advanced analytical techniques for evaluating the structural and functional properties of recycled materials.
- **Environmental Impact Assessment:** Recycling is inherently linked to environmental conservation. We will explore methodologies for assessing the environmental impact of recycling processes, materials substitution, and life cycle analyses.
- **Market Trends and Policy Implications:** Effective recycling requires a supportive ecosystem encompassing policies, regulations, and market dynamics. Our symposium will delve into the economic and policy aspects of materials recycling and how they influence industry practices.
- **Case Studies and Best Practices:** Highlighting successful case studies and best practices from various sectors will provide valuable insights into the real-world application of recycling technologies and strategies.
- **Emerging Materials:** As materials science continues to evolve, we will also investigate the challenges and opportunities presented by emerging materials and their recyclability.

We invite contributions from researchers, industry leaders, and policymakers to share their latest research findings, experiences, and insights in the field of materials recycling. By fostering collaboration and knowledge exchange, this symposium aims to drive innovation and propel us towards a more sustainable and circular materials economy.

Join us at the Materials Science Conference to be part of this vital conversation and contribute to the advancement of recycling technologies and practices. Together, we can forge a path toward a more sustainable and environmentally responsible future.

Symposium Organizer



Prof. Dr.-Ing. Ilya Okulov
Leibniz Institute for Materials Engineering - ...



Dr. Iliya Radulov
Technische Universität Darmstadt

