

FEMS EUROMAT23

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FEMS EUROMAT is the most important international congress in materials science and technology in Europe. It continues a successful congress series promoting the transfer of knowledge and the exchange of experience between academia and industry. **Submission deadline: 31 January 2023**

Area A: Functional Materials

A01: 2D Materials

Research on 2D materials has recently gained enormous attention resulting in novel fundamental developments in many fields ranging from fundamental physics, chemistry and material science to practical applications. While many of the basic unique properties of 2D materials have been scrutinized over the past decade, new avenues have already been opened to further expand their potential, for example, through (opto)electronic structure engineering. The atomically-thin 'all-surface' nature makes 2D materials extremely susceptible to their environment, e.g., through the changes in their electronic structure due to the adsorption of various species. This behavior might represent a significant obstacle and challenge towards the development of devices with reproducible performance. Conversely, the possibilities to influence and tune the properties of 2D materials are almost infinite, including thickness, deformation, chemical doping, external electric fields, substrate engineering, deliberate stacking to form van der Waals structures or 'Moiré' materials, or defects.

Such controlled tailoring of the 2D materials' properties necessitates new and/or improved tools for their manipulation and characterization. Higher sensitivity and resolution than available with standard characterization techniques are needed to reach as far into the atomic structure of the material as possible. However, the rewards for the increased efforts may be immense, from new fundamental science to high-end applications.

We, therefore, invite all contributions related to 2D materials, ranging from fundamental science to applications, with a special focus (but not limited to) on the targeted engineering of their properties. The broad topics include:

- Fundamentals: (opto)electronics, photonics, plasmonics, mechanics, magnetism, spintronics, topological materials, theory...
- Synthesis: growth methods, exfoliation, transfer and vdW assembly, device integration towards future applications...
- Engineering: defects, functionalization, deformation, chemical or charge doping, stacking...
- Characterization: from nano- to macroscale, in-situ methods, multimodal setups...
- Applications: electronics, sensors, detectors, actuators, membranes, energy conversion and storage, wearables, health, biomedicine, composites ...

Symposium Organizer



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