MSE 2024

24 - 26 Sep 2024 (Darmstadt)

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Topic B: Biomaterials

B06: Novel functional biocompatible materials in 3D microprinting

Additive manufacturing represents an established fabrication strategy, with accessible and affordable commercial equipment solutions. Materials used for 3D printing include metals, ceramics, and polymers, which can be almost arbitrarily shaped via a plethora of fabrication techniques, including, e.g., fused deposition modelling, selective laser sintering, and digital light processing.

Yet, when the dimensions of the features to be fabricated approach the micrometre scale, difficulties arise due to technological limitations and loss of performance of the materials adopted. This is even more daunting when microstructures for biological purposes are considered. Besides aiming at overcoming the technological challenges of (sub)micron processing, current research is also addressing the establishment of novel materials with unprecedented properties and functionalities.

The symposium aims at collecting excellent pieces of research on innovative materials for 3D microprinting. Regardless of the microfabrication techniques used (e.g., direct laser writing, multiphoton lithography, stereolithography, etc.), contributors will have the chance to present their most recent advancements in the field. Reports on biocompatible and stimuli-responsive materials, surface functionalization strategies, as well as cross-disciplinary approaches will be given high relevance.

By gathering together chemists, materials scientists, physicists and biologists, the Symposium will encourage dissemination of novel ideas to a broad audience, stimulate discussion, and promote further innovation.

Symposium Organizer


Dr.-Ing. Enrico Domenico Lemma
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Prof. Dr. Alberto Rainer
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