

FEMS EUROMAT23

03 - 07 Sep 2023 (Frankfurt am Main)

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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 F: Materials for Healthcare

F05: Structural and Bio-inspired Bioceramic Materials and Implants

The symposium aims to explore the most recent advances in the design, synthesis, and processing of bioceramic materials and implants, ensuring wider applications in medicine with enhanced safety and effectiveness over time, thus stimulating discussion among active researchers, medical device manufacturers, and clinicians, particularly in orthopedics, dentistry, spinal and cranio-maxillofacial surgery.

In spite of several bioceramics that have been successfully used in clinics, some critical factors still limit their performance, mainly when weight-bearing applications are demanded. Such clinical cases are very challenging and relevant for their socio-economic impact in view of the current population's aging and lifestyle. Hence, new bioceramic design, development, and processing concepts to achieve improved compositional and microstructural control are relevant research focus today. The symposium will give particular emphasis to new processes such as additive manufacturing or bio-inspiration, today considered the last frontier of material science, aiming to reproduce natural assembling/consolidation processes or to copy biological structures into new materials with superior functional properties, such as without being exhaustive:

- Bioactive, functionally graded composition and/or hierarchic pore architecture
- Novel approaches and mechanisms for mechanical reinforcement
- Surface modification and bio-functionalization to tailor specific biological interactions such as antibacterial effects or improved wear performances.

In addition, results and protocols of in vitro and in vivo assessment of structural bioceramics and implants (including clinical trials) are welcome.

Targeted Topics:

- Bio-inspired and low-temperature approaches for bioceramics development
- Additive manufacturing of bioceramics
- Bioceramics for hard tissue reconstruction/regeneration
- Bioceramics for load-bearing applications
- Structural and mechanical characterization of bioceramics
- Green manufacturing of bioceramics

Symposium Organizer



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