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. **Extended submission deadline: 15 March 2023**

Area F: Materials for Healthcare

F07: Metals in Medicine: Traditional and New Alloys, Permanent and Bioresorbable Metals

The aim of this symposium is to present a critical overview of the latest achievements in the field of metals in medicine and health, including biodegradable metals. Besides key existing and emerging strategies for surface and bulk modifications, new concepts for advanced manufacturing, imaging, and computational approaches will give a complementary view of this exciting field of research.

For many decades, metals and alloys have played an important role in medicine, including in orthopedics, dentistry, vascular surgery, neurosurgery, and sports medicine. In recent years a number of new advanced metals have been introduced, including new Ti-based alloys, new TWIP, and TRIP metallic systems, high entropy new alloys, metallic glasses, and bioresorbable metals. Altogether, metallic biomaterials are getting more and more attention and push surgery on a daily basis. New fabrication technologies, including additive, computational material design, specific characterization techniques (analytics, in situ technologies, etc.), and artificial intelligence-enhanced processing, will enable us to produce patient-specific metallic implants which will be able to treat patients worldwide in a specific and even personalized clinical approach. From a biological point of view, biodegradable metals generate a growing understanding of interaction with cells and living tissues.

Targeted Topics:

- Metallic alloys for biomedical devices, implants, and new strategies
- Biodegradable metals from all horizons, produced by conventional, additive, electrochemical approaches
- Computational material design for new designing and manufacturing technologies
- In vivo imaging of metallic implants and degradable metals
- Biomechanics, degradation under physiological conditions, and biological investigations
- Surface modification and coatings
- Non-destructive controls for in situ clinical follow-up
- others

Symposium Organizer


Prof. Dr. Diego Mantovani
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DGM