FEMS EUROMAT 23

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

Area C: Processing

C03: Advanced Subtractive Manufacturing

This symposium will bring together academics and practitioners to present the latest advancements in advanced subtractive manufacturing. The symposium will also serve as an international platform to discuss and share new ideas, consolidate existing collaborations, and establish new partnerships with leading researchers in the field. The symposium covers subtractive techniques used in the manufacturing of components from metals and other materials. Topics related to the evolution of material properties when subtracted from the bulk materials, analysis of the effects workpiece materials have on manufacturing processes, and the investigation of the mechanics—experimental, theoretical, or computational are within the areas of interest of this symposium. The symposium intends to cover a broad range of subtractive manufacturing processes such as material removal (e.g., metal cutting, grinding, machining with abrasives, EDM/ECM), forming (e.g., sheet-metal forming, forging, extrusion, rolling) processes, as well as tribological aspects of materials in these manufacturing processes. Topics of interest, as they relate to advanced subtractive manufacturing, include, but are not limited to:

- Characterization of workpiece materials (structure/surfaces) by techniques such as SEM, EDS, TEM, EBSD, AES, Raman spectroscopy to reveal new phenomenological aspects that govern subtractive processes
- Advanced experimental methods for characterizing the mechanics of deformation and microstructure evolution in subtractive manufacturing processes at multiple length-scales
- Advances in multi-scale modeling of large-strain plastic deformation and ductile failure in material removal and/or metal forming
- Micromechanics of plastic deformation and microstructure evolution during subtractive material processing
- Thermal and metallurgical aspects in subtractive manufacturing processes
- Applications of novel methods for improving surface integrity in the context of subtractive manufacturing processes
- Surface engineering when it relates specifically to a subtractive manufacturing process
- Tribology and wear in subtractive manufacturing processes

Symposium Organizer


Prof. Dr. Peter Krajnik
Chalmers University of Technology


Dr. Rachid M'saoubi
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DGM