Area C

Symposium C.6

Title: Solidification, Casting, and Advanced Metallurgical Processing		
Organizer	***Institution***	***Contact email***
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Abstract

This symposium will provide a forum to present the latest developments in the field of solidification, casting, and innovative metallurgical processes. The primary focus will be on recent advances in materials science and engineering research aiming at solving concrete technological challenges in metallurgical processing and manufacturing.

The symposium intends to bring together academics, researchers, and industrial leaders to discuss and elaborate pathways to best leverage fundamental knowledge in solidification, phase transformations, and microstructural evolution for advancing industrial innovation. Academics are encouraged to showcase research leading to progress in an applied metallurgical context. Industries are invited to share outstanding challenges requiring innovative research and/or the development of novel technologies.

The scope will be broad in terms of processes (e.g. casting, welding, additive manufacturing) and research approaches (e.g. theoretical, experimental, computational). Topics of interest include, but are not restricted to: new physics-based and data-based models linking materials processing, microstructure, defects, and properties; *in situ* monitoring and efficient use of resulting data; integration of complementary modeling approaches (ICME); new characterisation techniques and property measurements; physicochemical properties of liquid (or semi-solid) metals; additive manufacturing of compositionally-graded or lattice (meta)materials; novel alloy design.