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TMS 2026

155th Annual Meeting & Exhibition

March 15–19, 2026
San Diego Convention Center
and Hilton San Diego Bayfront
San Diego, California, USA
#TMSAnnualMeeting

SUBMIT AN ABSTRACT FOR THE FOLLOWING SYMPOSIUM

MATERIALS SYNTHESIS AND PROCESSING

Frontiers in Solidification X

The tenth "Frontiers in Solidification" symposium will provide a forum for emerging advances in experimental, analytical, and computational solidification science. The focus will be on the fundamental aspects of understanding how microstructures and defects develop and evolve during solidification experiments or processes, not limited to welding, casting, remelting, and additive manufacturing.

Beyond solidification, contributions that investigate melting phenomena are also encouraged. The broadest range of investigation methods is considered, including theory, experiments, characterization, modeling across all relevant length and time scales, and data-driven approaches. Contributions will put forward original interpretations, observations of novel phenomena, and/or outstanding challenges from both fundamental and applied perspectives, as well as the transfer of fundamental knowledge to practical applications. Contributions that combine novel characterization techniques, challenging property measurements, and computational simulations across scales are especially encouraged.

Topics of interest include:

- Nucleation and growth
- Interfaces and boundaries (solid-liquid, solid-solid, stability, anisotropy, kinetics,...)
- Pattern formation (cellular, dendritic, eutectic, peritectic,...)
- Fluid flow and gravity effect on microstructure formation and evolution
- Macrosegregation and microsegregation
- Solidification defects
- In-situ and time-resolved imaging of microstructures
- Theory and modeling across all relevant length scales
- Emerging processing techniques (e.g. additive manufacturing)
- Machine learning methods in solidification science

SPONSORED BY:
TMS Materials Processing & Manufacturing Division; TMS Solidification Committee; TMS Chemistry and Physics of Materials Committee; TMS Thin Films and Interfaces Committee

ORGANIZED BY:

- **Andre Phillion,** McMaster University
- **Tao Sun,** Northwestern University
- **Hideyuki Yasuda,** Kyoto University
- **Matthew Zappulla,** Los Alamos National Laboratory

QUESTIONS?
Contact programming@tms.org