



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

External Field-Intensified Materials Processing

This symposium emphasizes the advances of materials processing using various external fields, including electromagnetic fields such as microwave and light, plasma, electric field, magnetic field, laser, ultrasound, and gravitational field, aiming to address challenges in sustainable and efficient processing of different forms of materials. It includes technologies (but not restricted to) for minerals engineering, metal extraction, materials synthesis and processing, waste treatment, resource and energy recovery, and integration of techno-economic analysis and life cycle assessment, covering basic theoretical research, process optimization from both theoretical and experimental perspectives with a focus on elemental migration, heat transfer, as well as chemical reactions, in addition to equipment development at lab, pilot and industrial scales. Examples of research of materials processing involving use of a single external field or combined ones with the consideration of product quality, process safety, economic viability and environmental impact are particularly welcomed.

SPONSORED BY:

TMS Extraction & Processing Division; TMS Materials Characterization Committee

ORGANIZED BY:

- **Zhiwei Peng**, Central South University
- **Jiann-Yang Hwang**, Michigan Technological University