DRESDEN • Sept. 27-30, 2027

# EPM 2027

12th International Conference on Electromagnetic Processing of Materials


## September 27-30, 2027, Dresden, Germany

www.hzdr.de/epm2027

**Electromagnetic Processing of Materials (EPM)** encompasses all areas of materials processing in which electric and magnetic fields can be employed to enhance process performance, product quality, energy efficiency, or sustainability. Traditional topics include liquid metal processing, casting and solidification, induction heating, crystal growth, and plasma-based technologies, while emerging applications continue to expand into new fields of advanced manufacturing and materials engineering.

As process industries worldwide face the profound challenge of transforming their production systems towards greater energy efficiency, climate neutrality, resource conservation, and circularity, innovative processing technologies are becoming increasingly important. The application of electromagnetic fields—and in particular electrically driven heating and processing technologies—offers powerful opportunities to reduce emissions, improve process control, increase productivity, and enable the transition towards sustainable industrial production.

The conference welcomes contributions from all areas of materials processing involving electric, magnetic, or electromagnetic fields, ranging from fundamental research and numerical modeling to industrial applications and equipment development. EPM aims to provide an interdisciplinary platform that brings together researchers, engineers, technology providers, and industrial practitioners from academia, research organizations, and manufacturing industries. By fostering scientific exchange and collaboration, the conference seeks to accelerate the development and deployment of innovative technologies that will shape the future of sustainable materials processing.

## Conference Topics

- Fundamentals and modelling of EPM
- Induction heating and related heat treatment
- Steelmaking: Ladle treatment, Continuous casting
- Casting and solidification
- Microwave and plasma processing
- Electrification of industrial processes
- Instrumentation and measuring techniques for EPM processes
- Electrochemical processes
- Electromagnetic melting, cold crucible, melt preparation
- Magnetic flow control, EM stirring and braking, EM casting
- EM shaping, forming, mixing, separation, magnetic or EM levitation
- High-intensity magnetic fields applied to materials processing
- Equipments for EPM, EM pumps, EM brakes, EM stirrers, power sources,
- Crystal growth from the melt, magnetically influenced Cz and FZ processes
- EM control of solar silicon production processes
- Digitalization and artificial intelligence in electromagnetic processing

## Organizing Committee:

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## Important dates

Abstract submission ..... May 15, 2027

Notification of acceptance ..... June 01, 2027

Preliminary program ..... June 15, 2027

## Conference venue

EPM2027 will be held at Penck Hotel in the city centre of Dresden. The venue offers a total of 174 rooms and perfect conditions for technical sessions, poster presentations and exhibition space for industrial partners and sponsors.

## General Information:

All information about the workshop is available at the workshop home page

www.hzdr.de/EPM2027

Any questions related to the workshop should be addressed by e-mail to EPM2027@hzdr.de