



Barcelona, Spain | March 16-18, 2026

## 2026 The 16th International Conference on KEY ENGINEERING MATERIALS

16<sup>th</sup>  
ICKEM  
2026

### Track 1: Advanced Heat Treatments and Alloy Design for Metal Additive Manufacturing

**Abstract of the track:** BMetal Additive Manufacturing (AM) enables the production of complex three-dimensional metal components directly from digital models. However, the intrinsic characteristics of AM processes—such as rapid solidification, cyclic thermal histories, and steep thermal gradients—often lead to heterogeneous microstructures and high levels of residual stress. To achieve mechanical and functional properties comparable to or superior to those of conventionally manufactured components, post-processing heat treatments are frequently required. Nevertheless, heat treatments developed for traditional manufacturing routes are often unsuitable for AM materials, making the design of optimized, AM-specific thermal post-processing strategies a critical and time-consuming challenge. In parallel, significant research efforts are focusing on the development of novel alloys specifically tailored for AM that minimize or eliminate the need for post-processing heat treatments.

#### COMMITTEE MEMBERS

##### Track Chair

- Alessandra Martucci, DISAT-Politecnico di Torino

#### Invited Speakers

- Gian Luca Garagnani, Dipartimento di Ingegneria Università degli Studi di Ferrara
- Eduard Hryha, Chalmers University in Sweden
- Alessandro Morri, Università di Bologna
- Abdollah Saboori, DIGEP – Department of Management and Production Engineering, Politecnico di Torino
- Dr. Rachele Bertolini, The University of Padua

#### Track Topics

- Heat treatment strategies for LPBF, EBM, DED and related AM processes
- Microstructural evolution during post-processing of AM metals
- Residual stress measurement and mitigation in AM components
- Tailored alloy design for additive manufacturing
- Heat-treatment-free and novel AM alloys
- Thermophysical and mechanical behavior of heat-treated AM materials
- High-temperature performance and long-term stability of AM alloys

#### PAPER PUBLICATION



Submitted papers will be Peer-Reviewed (Double blind, and conducted by the technical program committee) and the accepted ones will be published in the conference proceedings, it will be indexed by Scopus.

#### IMPORTANT DATES

**Submission Deadline:** January, 31, 2026

#### SUBMISSION METHOD

All submitted papers must be clearly written in excellent English and contain only original work, which has not been published nor is currently under review for any other journal or conference. **Full Paper** is requested for publication purpose. With presentation only purpose, please just submit an **abstract**.

##### conference submission link:

<https://easychair.org/conferences/?conf=ickem2026>

##### Paper Template Download:

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