MSE 2024

24 - 26 Sep 2024 (Darmstadt)

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Topic D: Digital Transformation

D04: AI in Materials Processing

Artificial intelligence (AI) is rapidly transforming the field of materials processing, with the potential to revolutionise the way we design, manufacture, and use materials. AI-powered tools and systems are being used to improve the efficiency, sustainability, and reliability of materials processing operations.

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Artificial intelligence technologies, including machine learning (ML), and natural language processing (NLP), can be employed to extract insights and patterns of big data analytics collected for process control, generative designs for material processing, digital twinning of processes and shopfloors, virtual and augmented reality, quality control, prediction and optimisation of the processes, additive manufacturing, and all forms of materials processing.

- The use of AI to enable new materials processing paradigms, such as closed-loop control, predictive maintenance, and self-optimising systems.
- The development of AI-powered tools and systems for integrated materials processing design and manufacturing.
- The use of AI to address the challenges of sustainable and circular materials processing.
- The social and ethical implications of AI in materials processing.

The overarching aim of this symposium is to explore the use of AI in the fast-changing landscape of materials processing such that it could lay a policy framework for the transformative potential of AI for the future of the field. This symposium invites abstracts from researchers, academics, and industrial AI users to discuss the latest advances of AI in materials processing.

Symposium Organizer

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