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HoMMage



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Hysteresis Design of Magnetic Materials for Efficient Energy Conversion

Tuesday, 25 April 2023, 9:00 s.t., TU Darmstadt, via Zoom



Prof. Moataz Attallah

The Advanced Materials Processing Lab. (AMPLAB)

School of Metallurgy & Materials,

University of Birmingham, Edgbaston

Additive Manufacturing Going to Functional Materials and Structures

Abstract:

The talk explores the challenges and opportunities raised by the usage of additive manufacturing (AM) in printing functional materials and structures, focusing on shape memory alloys and magnetic materials. Printing of these advanced functional materials provide the opportunity for the development of new products that cannot be materialised using conventional processing. Case studies on AM of soft magnets, NiTi-based shape memory alloys, magnetocaloric materials, and magnetic shape memory materials, will be discussed.

About the speaker:

Professor Moataz Attallah holds a chair in advanced materials processing at the School of Metallurgy and Materials University of Birmingham. His research focuses on developing a metallurgical understanding of the material-process interaction in additive manufacturing of metallic materials focusing on the process impact on the microstructure and structural integrity development. His research is conducted through research partnerships with various companies in the aerospace, defence, medical, space, and nuclear energy sectors. He co-authored over 200 journal and conference papers, 3 book chapters, and is a co-inventor on 5 patents.

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