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Interspectral AB

Topic

3D Metal Binder Jetting Powders and Green Parts Microstructure Metrics Methodology for Sustainable Technology Developments

3D Metal Binder Jetting is currently disrupting manufacturing and accelerating mass production of 3D-printed parts. Its excellent balance between part quality and productivity rates is founded on powerful R&D investigations and metrics development to support applications for industrial cases. In this study, the technical physics description of the binder jet fundamentals and its role in parts consolidation will be explained. In particular, the focus will be on describing novel metrics of powders and green parts microstructure obtained by scanning electron microscope (SEM) and X-ray computed tomography (XCT) as binder and porosity local fractions and their spatial distributions. These unique metrics will be evaluated for different powders and R&D print modes. The use of this set of metrics to support print mode development and materials integration, as a predictive and more sustainable method, will be discussed.

About the Speaker

Rocío Muñoz Moreno holds a Physics BSc & MSc from the Complutense University of Madrid and a Materials Science & Metallurgy PhD from Carlos III University and IMDEA Materials Institute in Madrid, with research stays at Michigan State University, US. Posteriorly, Rocío Muñoz Moreno worked as a research associate during her postdoc at the University of Cambridge for Rolls-Royce University Technology Center, with investigations focused on Ni-based superalloys for aerospace applications additively manufactured by selective laser melting.

Rocío Muñoz Moreno joined HP in 2016 as a part of the 3D MultiJet Fusion team. In 2018, she moved to 3D Metals. In 2021, Rocio extended her responsibilities in Metals to become the European Metal Materials R&D Lead. In 2024, Rocío Muñoz Moreno moved forward as Principal Engineer, responsible for materials integration and external collaborations with partners and research institutions.