
PRESS RELEASE

MSC Software and MIG Accelerate Additive Manufacturing with Microstructure Simulation

Partnership exploits design-material-process simulation to bring additive manufacturing efficiencies and innovation to high performance applications

NEWPORT BEACH, Calif. - Sept. 5, 2019 - [MSC Software Corporation \(MSC\)](#), a global leader in computer-aided engineering (CAE) simulation software and services, today announced a new research collaboration to advance additive manufacturing (AM) techniques for high performance and high reliability applications with the Materials Innovation Guild (MIG) at the University of Louisville, USA.

Additive manufacturing is moving from prototyping to production, where it will have a transformative impact on many aspects of product design, manufacturing, materials, supply chain and workforce implementation, but there remain many new issues and opportunities. Through MIG, the University of Louisville helps organizations such as NASA and Boeing develop additive programs and trains future engineers in new design and production techniques.

Under the partnership, MSC Software will support the University's on-site and distance learning by supplying software and training. Startups in its 3D Printing Business Incubator will also utilize MSC software products in conjunction with education in techno-economic aspects AM to enhance their competitiveness in product and manufacturing design.

Dr. Sundar Atre, Endowed Chair of Manufacturing and Materials, MIG commented: "By integrating MSC's Simufact and Digimat platforms into MIG's research and teaching initiatives, I believe we will provide the opportunity to introduce new material, design and product innovations in healthcare, defense and transportation."

Consistency of material properties in new designs remains a barrier to the adoption of additive manufacturing in high performance and high reliability applications. MIG research will use MSC Software's Simufact and Digimat modeling and simulation platforms to understand the fundamental materials properties and microstructure in metal powders, polymers and composites, and how to exploit the new materials-



design-process relationship. These new materials and properties will help the industry define a common language for additive manufacturing and enhance the additive manufacturing capabilities of MSC Software tools.

The MIG is collaborating with NASA on a new additive manufacturing technology called Metal Fused Filament Fabrication (MF³), that will be simulated within the Digimat-AM product as part of the collaboration. Dr. Kunal Kate, Assistant Professor at UofL, explained why: “MF³ or similar powder-binder based 3D printing processes require post processing steps of debinding and sintering, that are currently subject to trial-and-error experiments. Combining experimental research with capabilities of MSC Software can develop new tools that predict 3D printed part material properties and effectively capture post debinding and sintering effects for powder-polymer based 3D printing.”

MSC Software is the latest of several industrial partners that have chosen to collaborate with the MIG. The partnership includes, Digimat and Simufact software licenses and training that will help in research, capabilities development, resident and online degrees. The partnership also supports the activities of the Louisville Additive Manufacturing Business Development Alliance (LAMBDA), that provides training and consultancy to advance innovation in local industry.

About MSC Software

MSC Software is one of the ten original software companies and a global leader in helping product manufacturers to advance their engineering methods with simulation software and services. As a trusted partner, MSC Software helps companies improve quality, save time, and reduce costs associated with design and test of manufactured products. Academic institutions, researchers, and students employ MSC's technology to expand individual knowledge as well as expand the horizon of simulation. MSC Software employs 1,400 professionals in 23 countries. For more information about MSC Software's products and services, please visit: www.mscsoftware.com

MSC Software is part of Hexagon, a global leader in sensor, software and autonomous solutions. Hexagon (Nasdaq Stockholm: HEXA B) has approximately 20,000 employees in 50 countries and net sales of approximately 3.8bn EUR. Learn more at hexagon.com and follow us [@HexagonAB](https://twitter.com/HexagonAB).



About Material Innovation Guild (MIG), University of Louisville

The Materials Innovation Guild (MIG) is directed by Dr. Sundar V. Atre, Endowed Chair of Manufacturing and Materials, and Dr. Kunal H. Kate, Assistant Professor in Dept. of Mechanical Engineering. MIG is located at 214 Shumaker Research Building. MIG focuses on research related to the processing, characterization and design of polymers, filled polymer materials and powder processes including extrusion, additive manufacturing and powder injection molding (3dmaterials.us and lambda3d.us)

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