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Topic

Advanced Beam Control Technology for Super Fine Directed Energy Deposition

Nikon has developed a high-precision DED system with proprietary technology. This presentation demonstrates its applications in precision repair of turbine components and hybrid manufacturing with L-PBF processes. We introduce our innovative Super Fine Directed Energy Deposition (SF-DED) technology, which integrates a galvano scanner system into the DED process. This integration achieves high precision with a 70 μ m laser spot size while maintaining practical build rates. This breakthrough creates new opportunities for industrial applications requiring both high precision and efficiency in metal additive manufacturing.

About the Speaker

Hiroyuki Nagasaka is Department Manager of Development Department in Advanced Manufacturing Business Unit at Nikon Corporation. He received his B.S. in Laser Spectroscopy and M.S. in Microwave Spectroscopy from Tokyo Institute of Technology and University of Tokyo. He has extensive experience in semiconductor lithography and numerical simulation (1999-2018) at Nikon Corporation, and currently focuses on Additive Manufacturing research and development (2016-present).