Special Issue

Laser Deposition Processes

Message from the Guest Editor

Laser deposition processes (LDP) are growing additive deposition technologies, which fall within the category of processes called direct energy deposition (DED). LDP are well suited for the manufacturing of complex metal parts, low-volume production, repair, and modification of components. These processes use a laser beam to melt an additional material (powder or wire) in order to create coatings or 3D components. Currently, there is a great interest in these processes for the purpose of repair, remanufacturing or fabrication of components. However, these processes require accurate control of the main process parameters, and depending on the materials, even pre- and post-heating cycles. Process parameters and the final properties of parts are strongly dependent on the properties of the single processed material. Moreover, for a successful process, especially for the 3D manufacturing of components, it is essential to define deposition strategies and to provide monitoring and/or process control. Many problems still need to be solved in order to obtain a process that ensures the right quality and sustainability of the components.

Guest Editor

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