Basics of additive manufacturing and part selection for additive manufacturing

Shreyans S. Khot

Additive manufacturing (AM) is a novel method of manufacturing parts directly from digital model by using layer-by-layer material build-up approach. This tool-less manufacturing method can produce fully dense metallic parts in short time with high precision. Features of AM like freedom of part design, part complexity, light weighting, part consolidation, and design for function are garnering particular interests in metal AM for aerospace, oil and gas, marine and automobile applications. Powder bed fusion, in which each powder bed layer is selectively fused using energy source like laser or electron beam, is the most promising AM technology that can be used for manufacturing small, low volume, and complex metallic parts.

This presentation covers presents evolution, current status, and challenges of powder bed fusion technology. performance characteristics of each process, advantages/disadvantages, materials, and applications. Step by step guide for selection of the right part for additive manufacturing. Design for additive manufacturing. Industrial requirement from academic research.

About the speaker

Mr. Shreyans Khot having 13+ Years of Experienced Manager with a demonstrated history of working in the New product development, Defence & aerospace product development, Material characterisation, Quality management & Additive Manufacturing industry. Skilled in Metal additive Manufacturing, Reverse Engineering, IP Management, Design for AM, New Product Development and Business Development, Laser Physics, Machine Building. He was worked in Bharat forge Research & development almost 12 years in different positions, in last three years he was associates with amace solution Bangalore to develop India's first Metal 3D printing machine. He has completed his Master of Technology (M. Tech.) in Material, Manufacturing & Modelling Science from (IIT Bombay) Indian Institute of Technology, Bombay.