Tata Institute of Fundamental Research
Survey No. 36/P, Gopanpally Village, Serilingampally, Ranga Reddy Dist., Hyderabad – 500 046

Seminar

Metal Cutting Chips into usable feedstock for Additive Manufacturing

Aishwarya Deshpande

University of Wisconsin Madison, WI

Throughout the advent of manufacturing technologies over the years, machining is still the most used fabrication process to produce near net shape metal parts. However, recycling metal cutting chips is to date an energy-intensive process. Advancement in additive manufacturing processes offers opportunities to use the recycled machining chips in efficient ways. We propose methodologies which utilise machining chips to make usable feedstock in fusion based directed energy deposition and solid-state friction surfacing deposition systems. We particularly study feasibility of the methodologies, material efficiency, energy consumption of the process through UPLCI approach and applications to incorporate various loose form of feedstocks in friction surfacing. The motivation is to improve the understanding and implementation of circular manufacturing to reduce energy consumption, cost and increase resource efficiency.

Tuesday, Jan 16th 2024

16:00 Hrs (Tea / Coffee 16:45 Hrs)

Auditorium, TIFR-H