
Defence Seminar

Seminar Title	: Experimental Studies on Wire Arc Additive Manufacture of SS 308L and Inconel 718 Part
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Venue	: Departmental Seminar Hall (ME-001), New Mechanical Science Building (Physical Mode)
Date and Time	: 11 Mar 2025 (04:00 PM)
Abstract	: Wire Arc Additive Manufacturing (WAAM) belongs to the category of Direct Energy Deposition (DED)-based Additive Manufacturing (AM) in which the feedstock material is in the form of metallic wire. The wire melts under the action of a welding arc the molten material is deposited on a substrate. Successive bead deposition in a layer-upon-layer manner (along the build direction) develops the final 3D part. In order to build a cross-section/ layer, multiple beads need to be deposited one-after-another onto the horizontal plane in accordance with a given pattern. WAAM is characterized by its high material deposition rate (when compared to the powder-based AM techniques) and is suitable towards fabricating parts which are <i>medium-to-large</i> sized, possessing <i>low-to-medium</i> level of design intricacy. The present dissertation focuses on microstructure and mechanical property characterization of Cold Metal Transfer (CMT) + Metal Inert Gas (MIG) welding based WAAMed SS 308L and Inconel 718 parts. The complex heat interaction phenomena that take place during execution of WAAM process is also studied herein.