

4. Wire & Powder deposition for better accuracy and higher deposition rates

Amongst the directed energy deposition-based AM processes, Powder and Wire are different forms of raw material that can be used. Powder-DED comprises a cladding head in which a laser fuses together powder particles sprayed from concentric nozzles. Wire - DED, also known as Wire Arc Additive Manufacturing (WAAM) builds on Arc welding to produce fully dense complex functional metallic objects with wire as feedstock. Amongst the Powder and Wire based processes, the powder offers better accuracy and feature resolution, and wire-based processes are capable of high deposition rates as shown in **Figure 7**. This work aims at developing a Wire & Powder Hybrid Direct Energy Deposition (WP-DED) process bringing together the advantages of a high deposition rate with high accuracy. Apart from the system design, development, and integration, the research also includes studies on:

- (a) addressing the distortion and residual stress concerns in the fabrication of large components and,
- (b) addressing possible property irregularity arising out of using energy sources with different energy densities.

This work is done together with IIT Dharwad and NITK Suratkal and is supported through the DST-CRG grant.

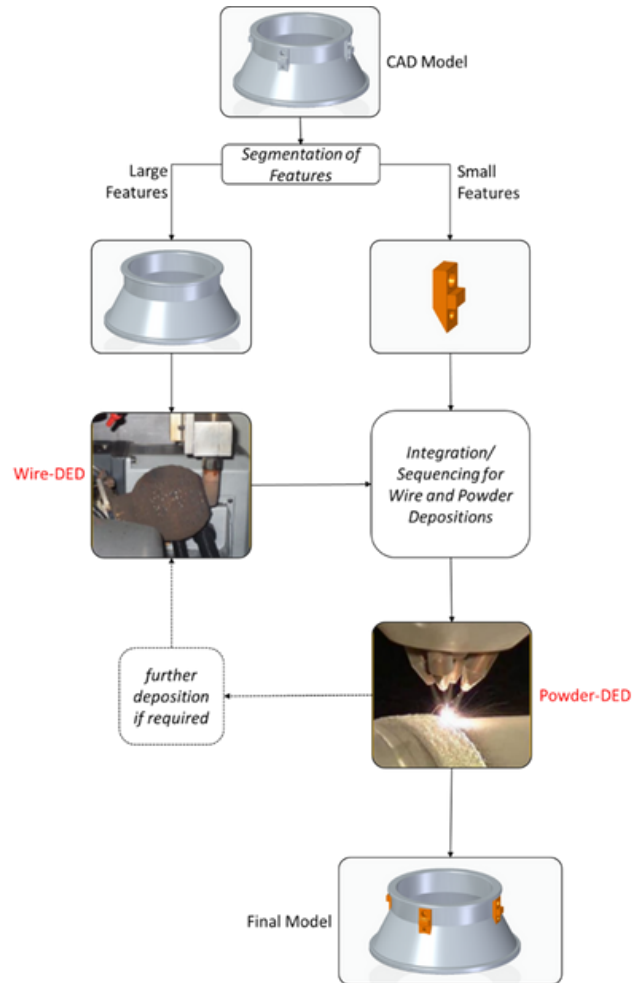


Figure 7: Wire & Powder deposition for better accuracy and higher deposition rates

IITH and WiSig unveil 5G Infra Solutions

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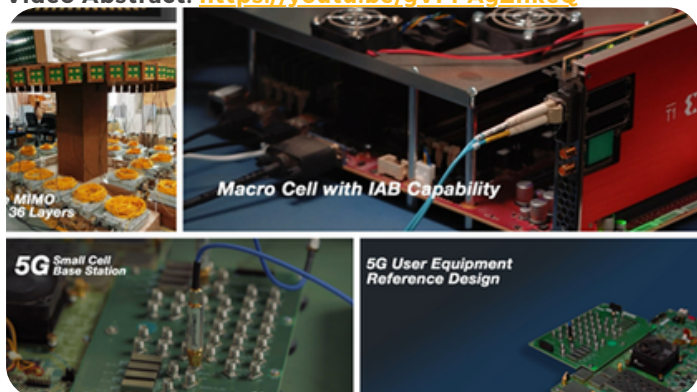
IIT Hyderabad (IITH) and WiSig Networks jointly announced a maiden 5G data call using indigenously developed 5G ORAN technology. The call was made using MIMO capable base station that supports 100MHz bandwidth in the 3.3-3.5 GHz frequency band.

"Inventing and innovating in Technology for Humanity (IITH) is our mantra, and we expect WiSig to make India "Aatma Nirbhar" in the 5G space", **added Prof B S Murty**.

Read More:

<https://pcr.iith.ac.in/files/pressrelease/5G1S.pdf>

Video Abstract: <https://youtu.be/gVPPAgZhkeQ>



IITH Research in news - Q1, 2022

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How antioxidants improve the inhibitory nature of Triclosan on Acetylcholinesterase, answers IITH

Can we do something to protect ourselves from the toxic effects of Triclosan? Know from IITH's team. Highlights: 1. Triclosan causes damage to the nervous system at very low concentrations. 2. Triclosan impairs acetylcholinesterase enzyme directly and indirectly (via oxidative stress). 3. Acetylcholinesterase enzyme is a vital cellular component, as it is required for optimal sensory and motor skills. 4. Remarkably, if we improve health with antioxidants, we can also prevent the damage caused by Triclosan.

Read more: <https://pcr.iith.ac.in/files/pressrelease/ATL.pdf>

Video Abstract: <https://youtu.be/npprVSv153U>

