



# ICAM25

## International Conference on Advanced Manufacturing Research to Application through Standardization

October 6-10 | Las Vegas, NV

### Value Chain: Directed Energy Deposition



Directed Energy Deposition (DED) is rapidly advancing as a key additive manufacturing (AM) technology, offering unique capabilities for component fabrication and repair. While aerospace, energy, mining, marine, and construction sectors have already embraced DED, its adoption is expanding into tooling, defense, and other advanced manufacturing applications, driven by its ability to improve manufacturing efficiency, material flexibility, and part longevity.

This session will bring together experts, researchers, and industry leaders to explore key advancements, challenges, and innovations in DED technology, discussing the latest trends, breakthroughs, and its expanding role in modern manufacturing, including:

- Process Optimization – Enhancing efficiency, repeatability, and scalability.
- DfAM for DED – Design principles tailored for Directed Energy Deposition.
- Material Performance – Multi-alloy characterization, novel materials, and mechanical properties.
- Industry Applications – Manufacturing, repair, and hybrid process integration.
- Qualification & Standards – Certification frameworks, acceptance criteria, and regulations.
- Modeling & Simulation – Digital twins, process modeling, and simulation-driven design.
- Material Feedstock – Capture efficiency, cost, availability, and wire vs. powder comparisons.
- Monitoring & AI – Real-time monitoring, defect detection, and predictive analytics.
- Smart Manufacturing – Digital integration for automation and productivity.

### Symposium Organizers

- **Frank Brückner**, Fraunhofer IWS, Germany
- **Paul Gradl**, NASA - Marshall Space Flight Center, USA
- **Tyson Gregory**, Nidec Machine Tool America, USA
- **Jhonattan Gutjahr**, TWI, United Kingdom
- **Evan Handler**, Naval Surface Warfare Center - Carderock Division / America Makes, USA
- **Vittoria Laghi**, University of Bologna, Italy
- **Misael Pimentel**, National Manufacturing Institute of Scotland, United Kingdom
- **Arkadi Zikin**, Oerlikon, Switzerland

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an abstract

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