Induction Assisted

Laser Cladding

Fraunhofer USA

Center for Coatings and Laser Applications

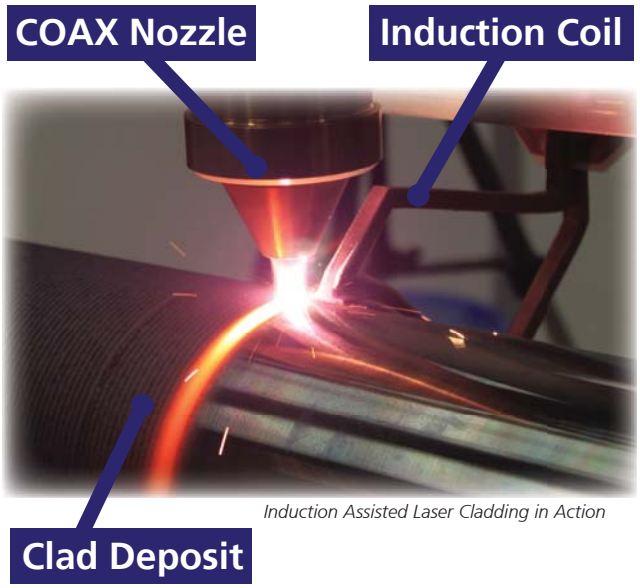
Making innovation a reality

Fraunhofer has developed an innovative new machine concept for laser cladding, combining our considerable expertise in both laser and induction heating technology to come up with "Induction Assisted Laser Cladding". This process allows part pre heat temperatures to be more accurately controlled and greatly improves the process performance in terms of deposition rates and clad deposit quality.

COAXpowerline

- Induction Assisted Laser Cladding Head for High Deposition Rates
- Enhanced Clad Quality - Reduce Crack Tendency with High Hardness Materials
- Enhanced Deposition Rates up to 2x that Conventional Laser Cladding Process
- Improved Control of Cooling Rates for Crack Sensitive Materials
- Multi-Directional Cladding Operation Possible

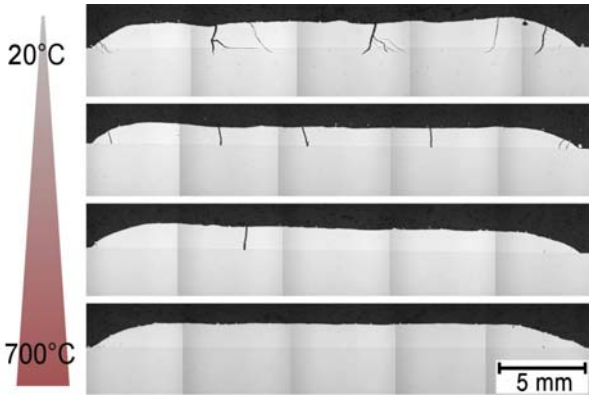
COAXpowerline - Integrated Induction Assisted Cladding Head



Induction Assisted Laser Cladding in Action

Applications

- Pipes, Rods, Drive Shafts
- Oil Drilling Tools
- Hydraulic Rods
- Repair and Remanufacturing
- DMD Applications with Crack Sensitive Materials (e.g. Super Alloy Aerospace Components)



Increasing the Clad Quality of Crack Sensitive Materials with Induction Assisted Laser Cladding

In coorperation with

Fraunhofer IWS

PRODUCT SPECIFICATIONS

Clad Track Size:	from 0.008 inches (0.2 mm) up to 0.08 inches (2 mm) thickness, up to 0.314 inches (8 mm) wide
Laser Type:	Laser power from 3 - 10 kW (Diode, Disk, Fiber, Nd.YAG laser)
Powder Feed Rate:	up to 300 grams / min
Powder Materials:	Nickel based, Cobalt based, Fe based, Carbides in Nickel / Cobalt, Nickel based super alloys

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