DELASER

GLOBAL SOLUTIONS

SPEEDTECH-FORUMS

OPPORTUNITIES OF POWDER-BASED DIRECTED ENERGY DEPOSITION PROCESS FOR SUSTAINABLE MANUFACTURING

Xabier Garmendia Colera

17/03/2023

ABOUT

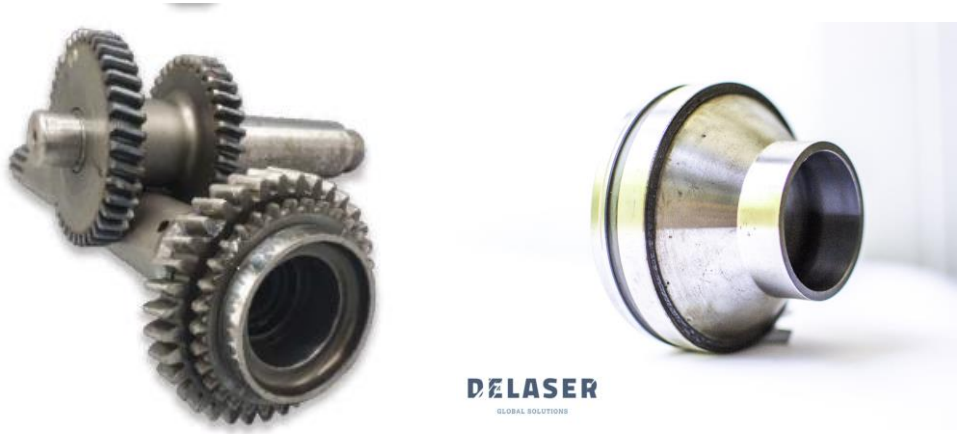
DELASER GLOBAL SOLUTIONS

SERVICES

LASER HARDENING

LASER WELDING

LASER LADDING/LMD



ADDIDEBA Laser & AM Solutions

DISTRIBUTION

LASER METAL DEPOSITION

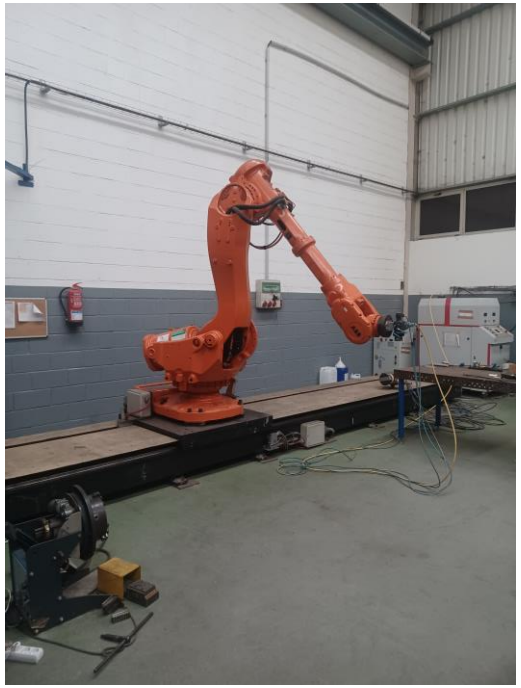
LUNOVU Integrated Laser Solutions

LASER POWDER BED FUSION

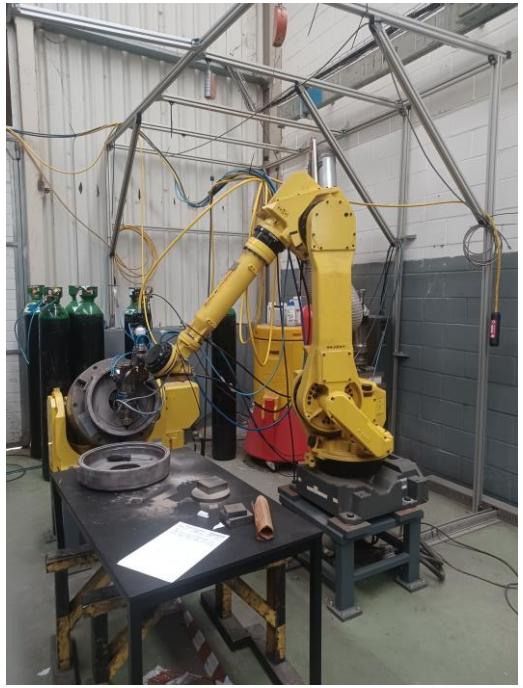
Additive Industries

MATERIALS & EQUIPMENT

- Niquel-based superalloys
- Cobalt-based alloys
- Austenitic stainless steels
- Martensitic stainless steels
- Tool steels
- Ni+60%WC

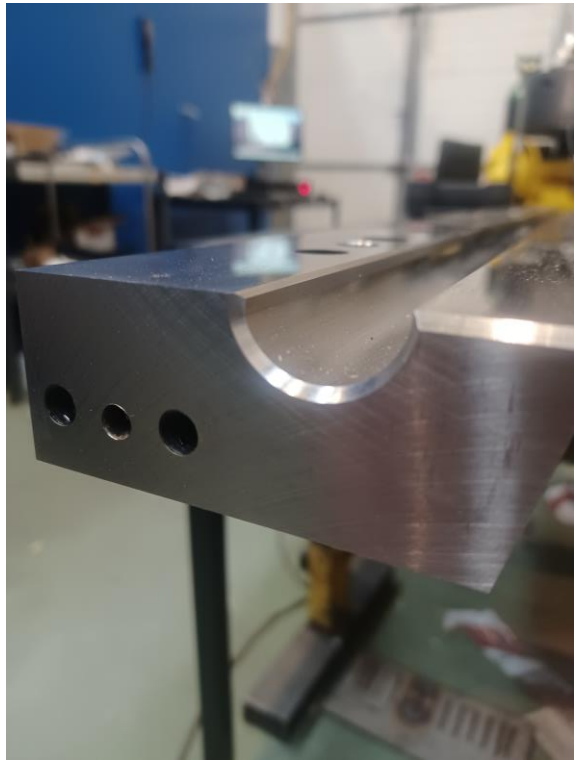


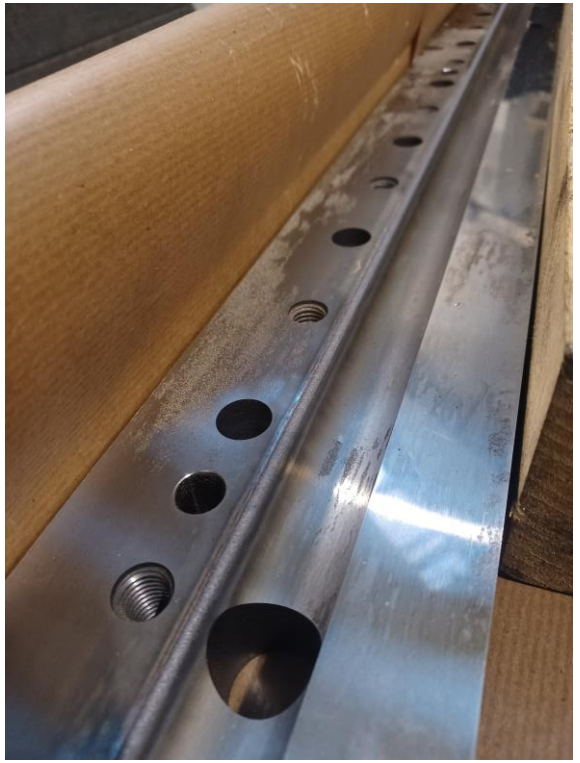
- 20 tones overhead crane
- Dedicated automotive remote welding cell
- 2 robots
  - ABB: 6+1 (7m) axis
  - Coordinate 6+2 axis
- 3 laser sources including diode and fiber
- Annular or discrete cladding nozzles



CASE STUDY 1: EDGE RESHARPENING

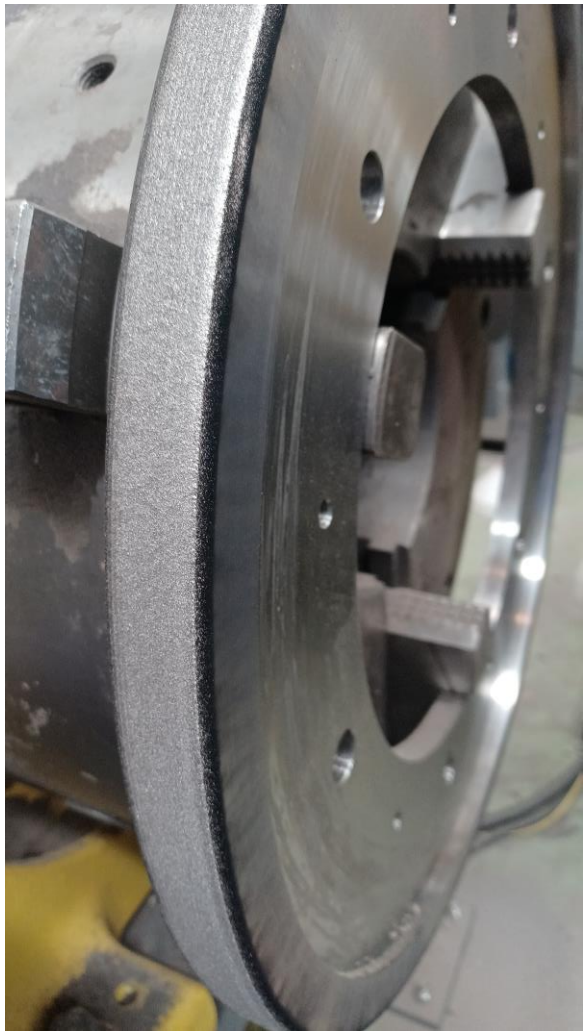
- Substrate material:
  - M333
- Cladding material:
  - 1.1244
- Objective
  - Add material to resharpen the edge
- Sector
  - Slideways for machine tool

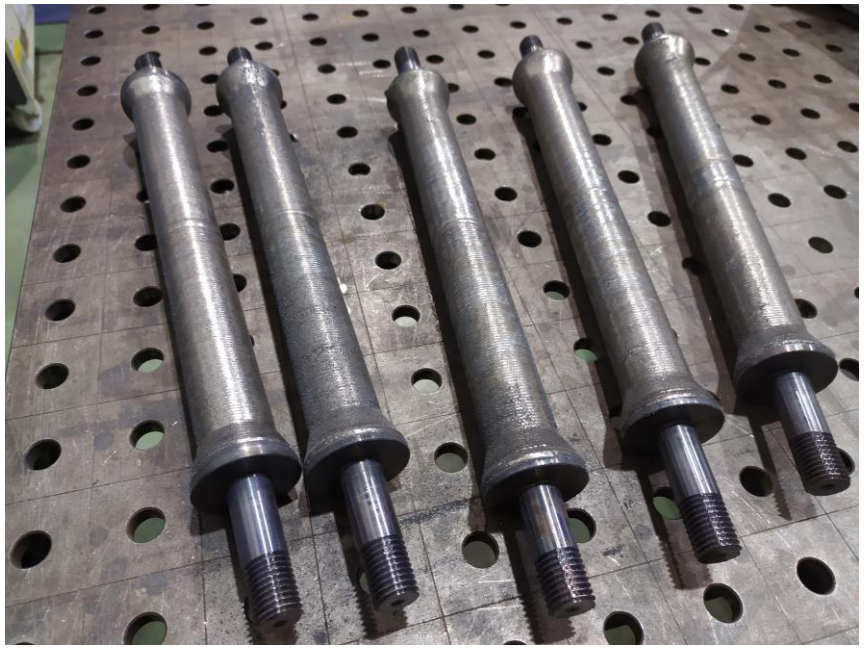




CASE STUDY 2: WEAR PREVENTION

- Substrate material:
  - 42CrMo4
- Cladding material:
  - Ni+60%WC
- Objective
  - Prevent wear
- Sector
  - Centrifugal classifiers

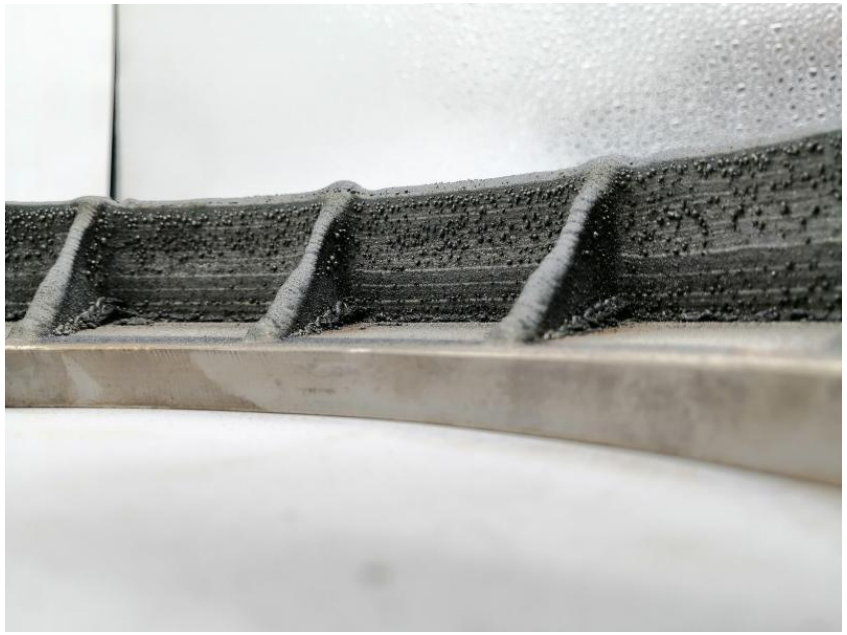


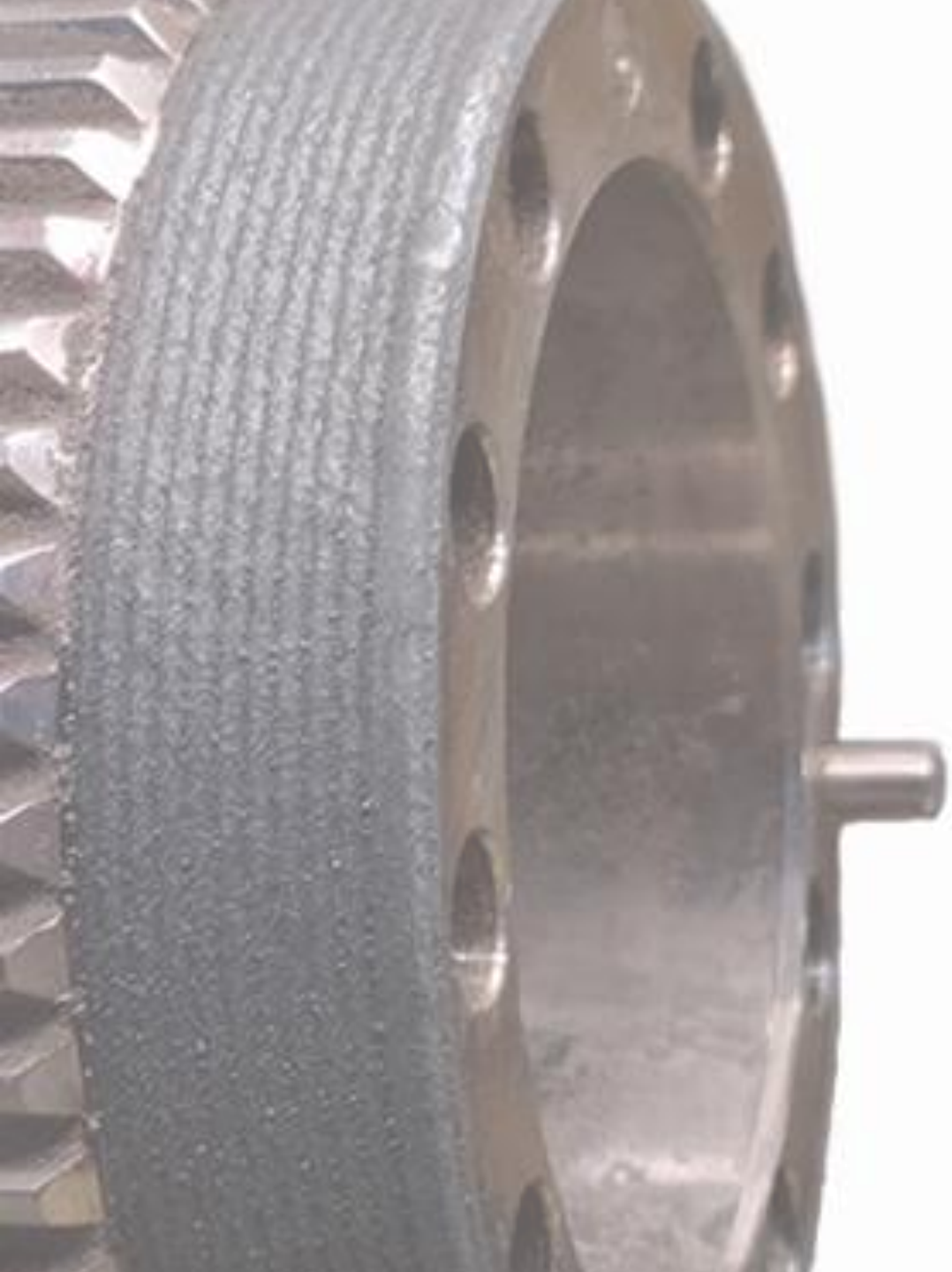


RESEARCH & DEVELOPMENT

MAIN RESEARCH INTERESTS:

- MATERIALS
  - Al and Ti alloys
  - Cu and its alloys
  - MMC
  - Cast iron substrate
- PROCESS CONTROL
  - Closed-loop scanning
  - Nozzle-part distance control
- NEW APPLICATIONS AND METHODS
  - High-speed laser cladding
  - Inner diameter cladding
  - Moulds and dies
  - Wire-based LMD





THANKS FOR YOUR ATTENTION

x.garmendia@delaser.es
x.garmendia@addideba.com