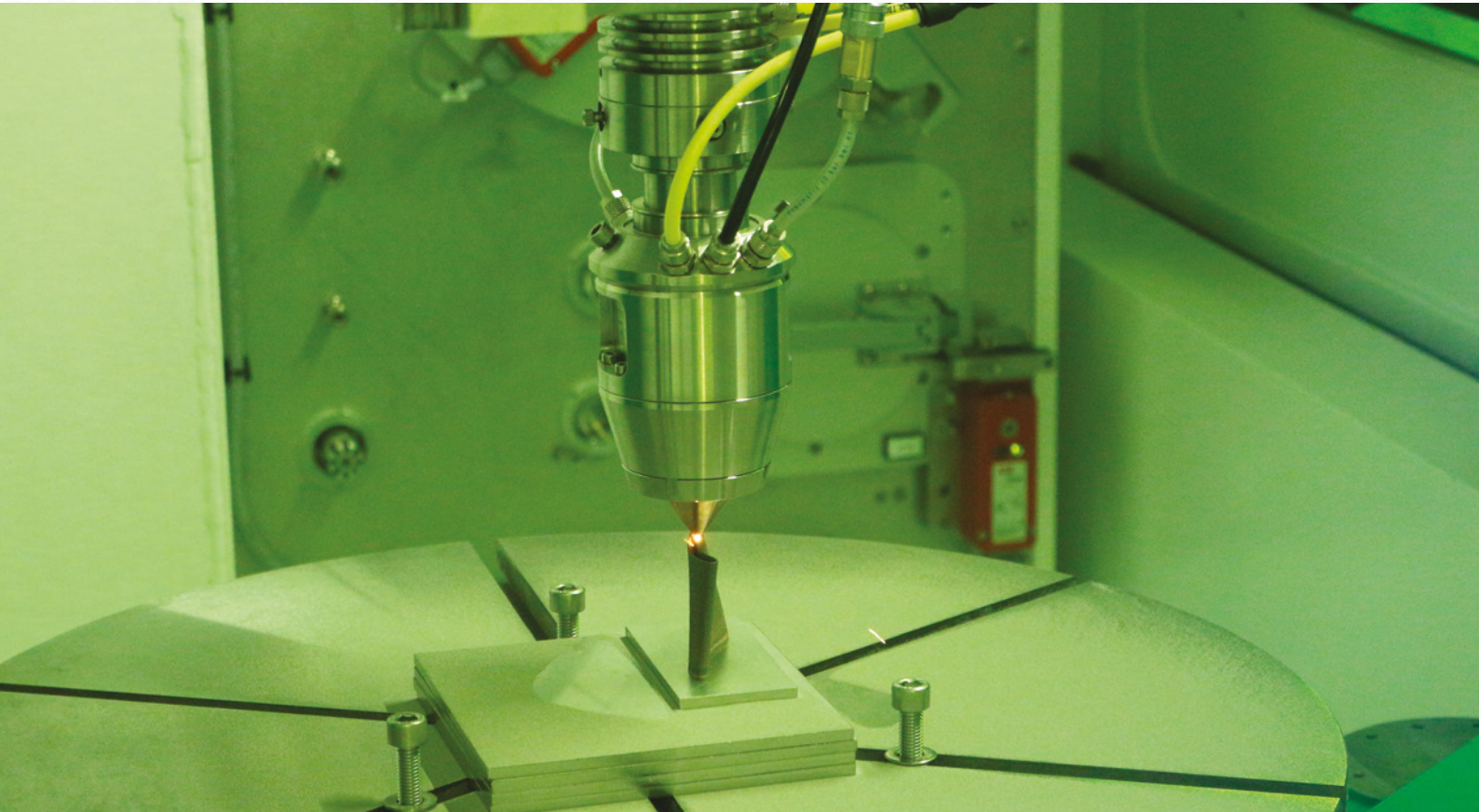




ADDIMADOUR
ADDITIVE MANUFACTURING SOLUTIONS



ADDITIVE MANUFACTURING

KEYWORDS

Large parts Metal Additive Manufacturing
Feature addition / Repair / Numerical process simulation
Topology / Optimisation / Metallurgy / LMD-P / LMD-W
WAAM / SLM / Coldspray

RESEARCH TOPICS

Mechanical characteristics improvement of parts obtained by Additive Manufacturing:

- Determination of optimal Key Process Parameters to obtain material soundness
- Development of real-time instrumentation for monitoring and post-process control
- Development of deposition strategies tailored to Additive Manufacturing processes

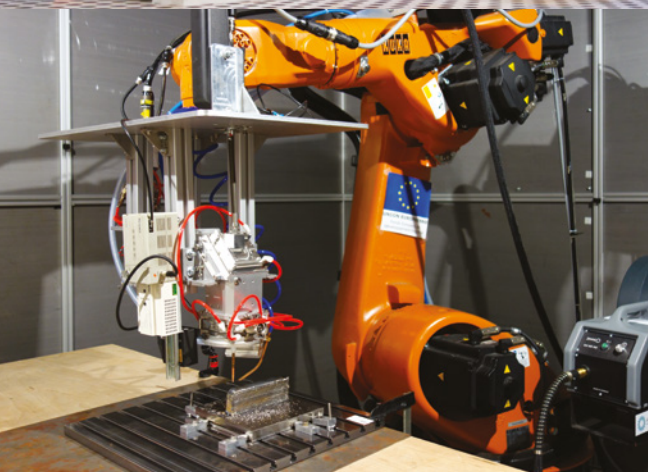
Multiphysics numerical simulation of Additive Manufacturing processes:

- Thermal, mechanical and metallurgical simulation for behaviour prediction (residual strains and deflection)
- Topology optimisation (Finite Element Method structural design for performance/weight ratio enhancement)

an innovative platform

ESTIA
INSTITUTE OF TECHNOLOGY

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PAYS BASQUE**
Euskal Herri



CAPABILITIES

Software

GeonX | Virfac® Additive Manufacturing
ANSYS, Inc | ANSYS Workbench
Autodesk | PowerShape® & PowerMill®
Altair | HyperWorks (OptiStruct® & solidThinking Inspire)
Dassault Systèmes | CATIA V5R21
Magics | Materialise®
The MathWorks | MATLAB

Equipments

LMD-P (LASER Metal Deposition - Powder) **process:**

Manufacturing, repair of complex parts

- BeAM Magic 800 - dual nozzle, 2 kW LASER, inert chamber
3-axis 800 x 800 x 1400 mm³ - 5-axis 800 x 800 x 800 mm

LMD-W (LASER Metal Deposition - Wire) **process:**

Manufacturing, repair of large dimensions parts

- KUKA KR60 R2000, Precitec Coaxprinter, 6 kW LASER
1000 x 1000 x 2000 mm³


WAAM (Wire Arc Additive Manufacturing):

Manufacturing of very large volume blanks

- KUKA KR100 R2900, KUKA KR240 R2900, Fronius - CMT
1500 x 1500 x 2500 mm³

SLM (Selective LASER Melting) **process:**

Manufacturing of complex parts

- LASER M2 concept (in partnership with )
250 x 250 x 250 mm³

ColdSpray - ArcSpray process:

Repair and feature addition

- Plasma Giken PCS-1000 (in partnership with )
1000 x 1000 x 1000 mm³

FDM (Fused Deposition Modeling) **process:**

Rapid prototyping of polymer parts

- LYNXTER S600D 450°C nozzle, temperature-controlled chamber,
400 x 400 x 600 mm³
- KUKA KR10 R1100 & Plastic printing head, 400 x 400 x 800 mm³

Metallography laboratory

Material soundness evaluation



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