Capaero

Extending
assembly service life

Meliad

Expertise &
technologies industrielles

Group Organisation

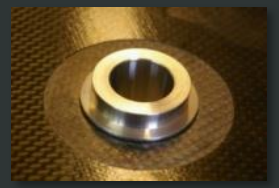
Capaero
Extending
assembly service life

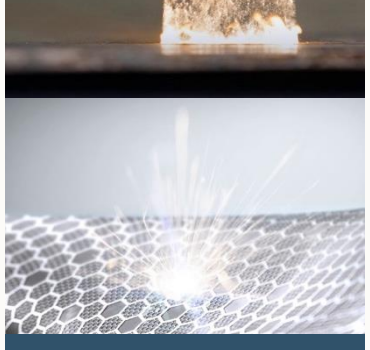
Meliad
Expertise &
industrial technologies

Fatigue life enhancement
cold expansion

Expanded Bushing installation
Metallic and composite

Drilling composite panels
Compdrill device





Laser surface preparation and cleaning by Laser

Residual stresses measurement, surface analysis and simulation

Robot system design and manufacturing. Vision technologies

Board

Vincent DELAGE

Sales manager

Philippe JACOB

Technical manager

Laurence BESNAULT

R&D and Finance

Customer references (extract)

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Aeronautics & Space

AIRBUS

APCO TECHNOLOGIES

arianeGROUP

hemeria

MBDA

SAFRAN

ThalesAlenia Space

Energy, Defense & Transport

ALCATEL SUBMARINE NETWORKS

ALSTOM

EDF

framatome

NUVIA

NAVAL GROUP

nexter

ONET TECHNOLOGIES

orano

vallourec

Automotive & Other

Valeo

HUTCHINSON

MICHELIN

RENAULT La vie, avec passion

SKF

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Laser Surface Treatment and Functionalization

Residual stresses analysis

Meliad in short

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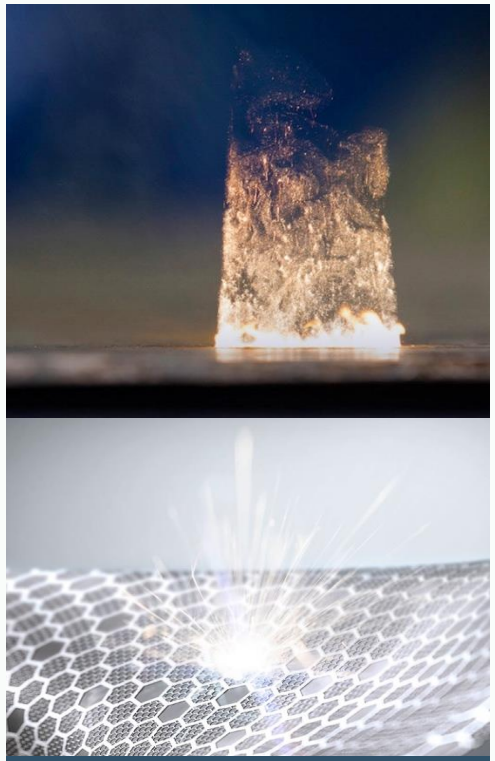
'09 Year of creation

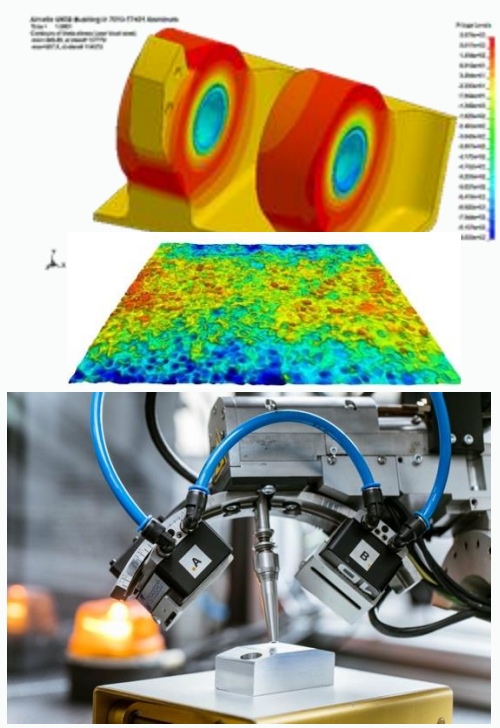
32

5,5 M€/2024

1 brevet



Laser surface preparation and cleaning by Laser



Residual stresses measurement, surface analysis and simulation

Robot system design and manufacturing. Vision technologies

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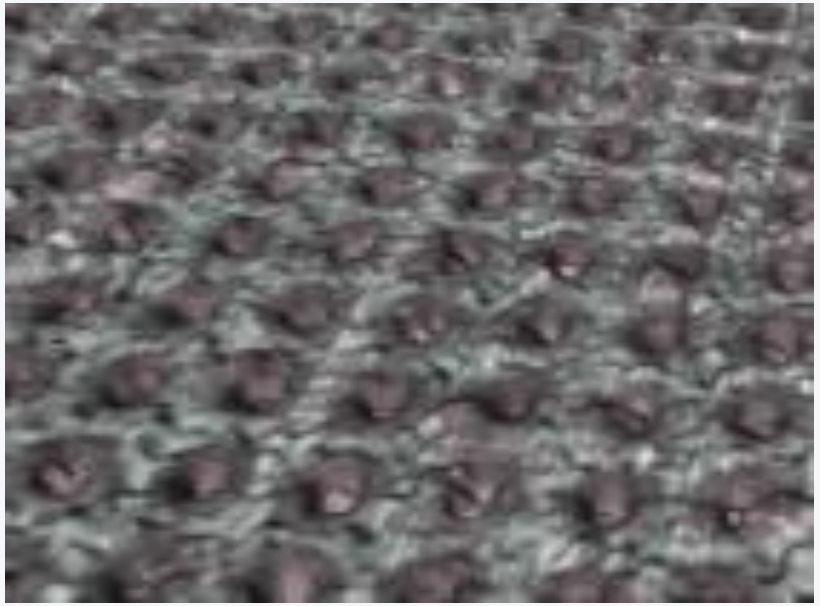
Laser Technologies

- Preparation
- & Functionalization of Surfaces



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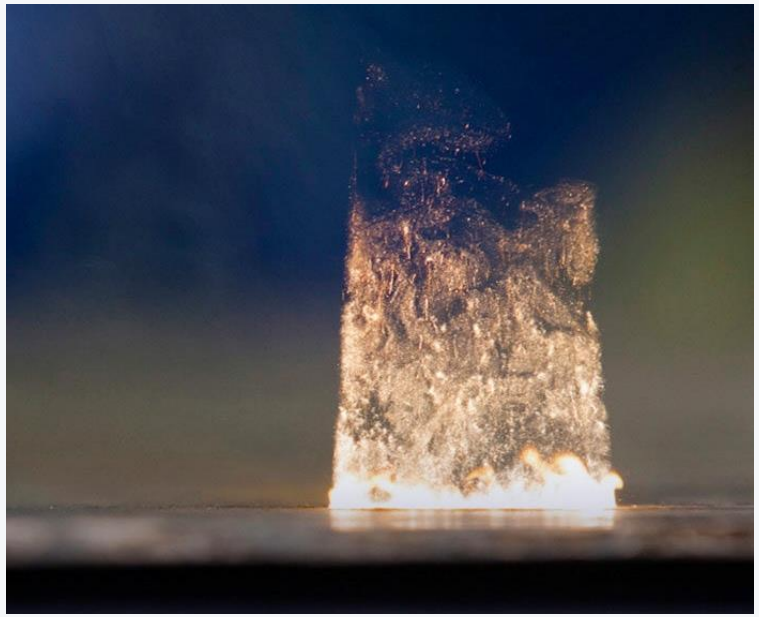
Nanoseconde Pulsed Laser technology

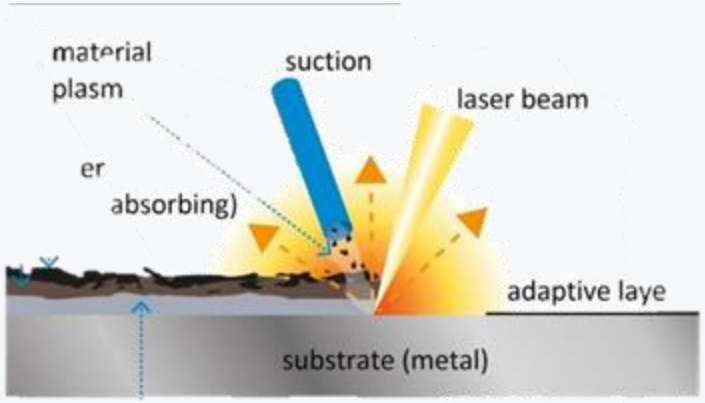


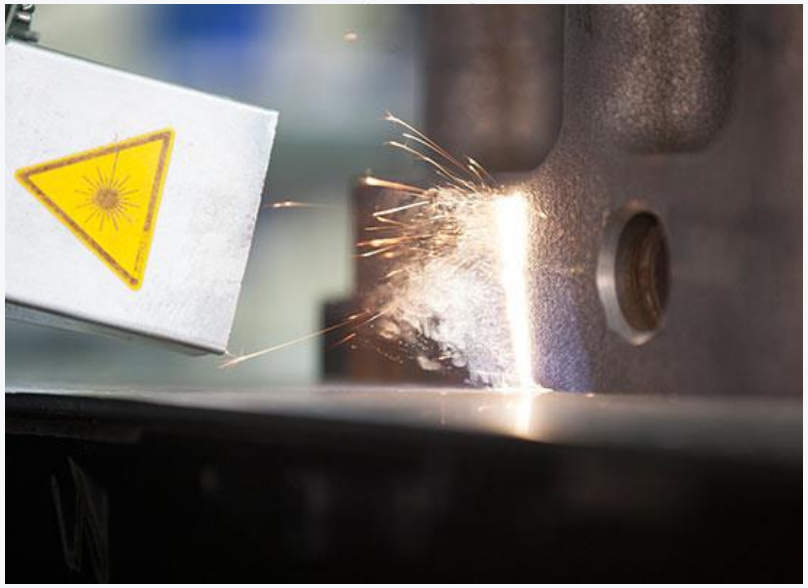
Surface treatment

Cleaning

Removal of coatings

Pulsed laser principle





https://youtu.be/VqNJmvddsQM

Industrial applications

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https://youtu.be/9mjWM8y0lXI

Our approach

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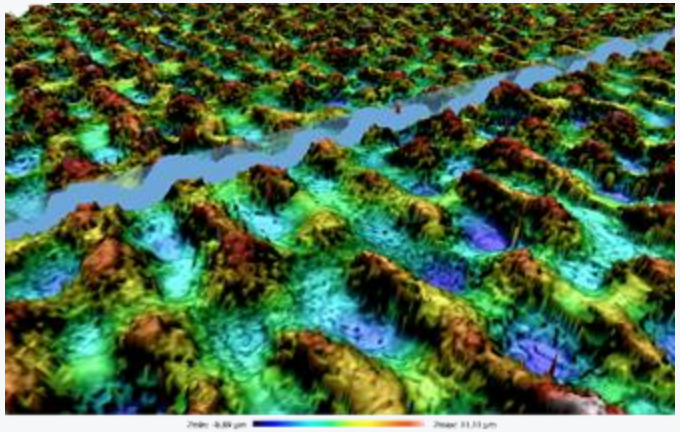
Tests and studies

Qualification

TRL level assessment

service

Industrial and robotic solutions



Core applications with laser

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Surface cleaning before **bonding** or **painting**

Cleaning before and after **Welding**

Local **laser stripping**
Masking replacement

Nuclear decontamination
Removal of paint with **Asbestos** and **leads**

Mold cleaning

Manual laser cleaning

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- Sale and service with laser
- Mold cleaning, rust and painte removal
- hostile environnement: amiante, plomb, contamination nucléaire

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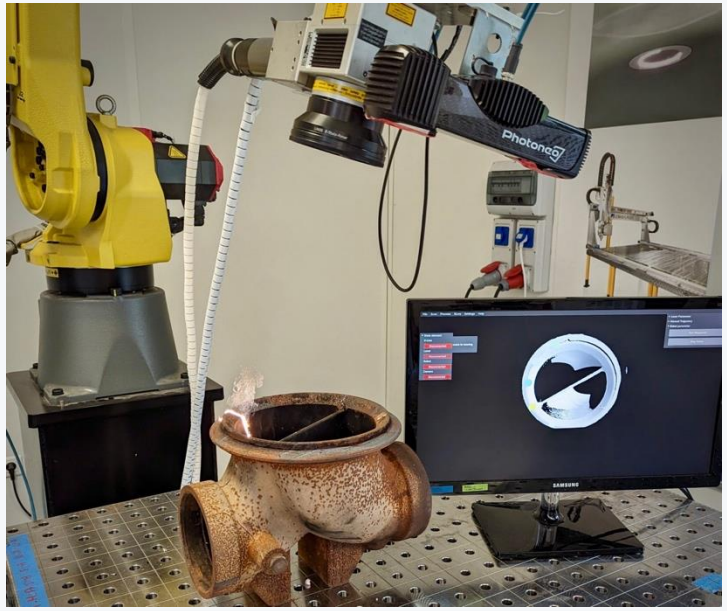
Robotic solutions



SurfLAS 4.0 : smart robotic

- No positioning tools
- No robotic expert needed
- Works with or without CAD model

SurfLAS 4.0 : Part identification and locating by camera

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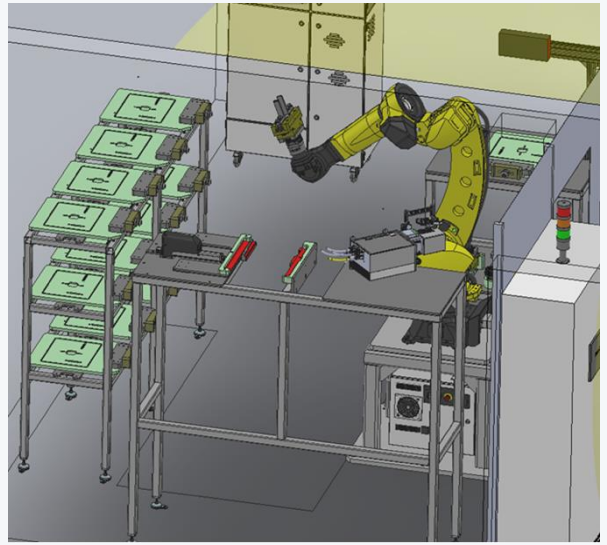
Target :

- No tools for part position
- Work with multiple parts and future unknown parts (manufacturing flexibility)
- Customer autonomy : process people can program new parts



Part is scanned by camera and compared with a CAD database → Part is known in robot world and corresponding treatment program are called → Part taken by prehension tool to show them in front of the laser for cleaning operation

Option : plate management or conveyor to autromatically load and store parts in the machine.

Click2Go

- Quickly scan a surface and create tool path
- From a cloud point, Meliad algorithm create surfaces
- Operator can select the surface to clean to automatically generate the tool trajectory

X-Live : Real time robot control for cleaning operations

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https://youtu.be/DoY2QrKRZuo

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Residual stress analysis

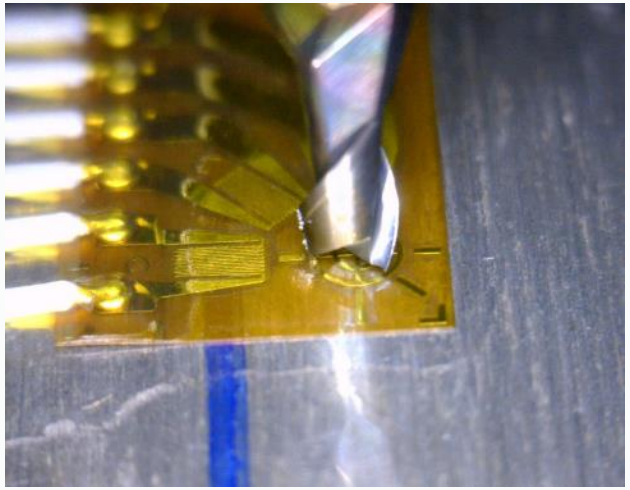
Measurement of residual stresses

&

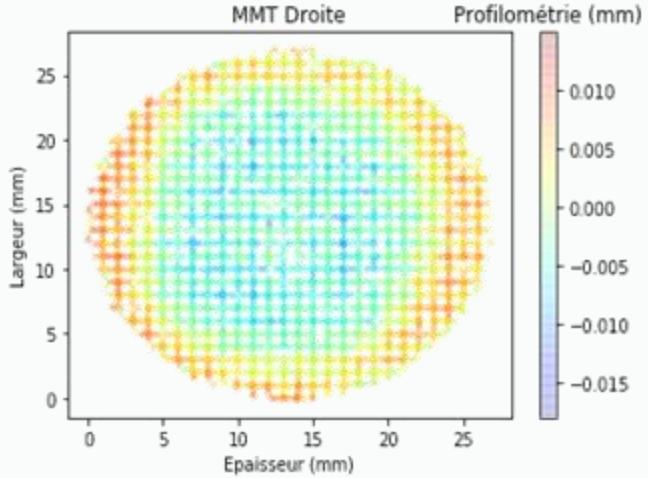
Non-destructive testing by Barkhausen noise

Residual stress analysis

X-ray diffraction



Incrémental drilling



Contour method

Sale of devices

Stresstech X-Ray Diffraction Devices

Meliad equipment for measuring by incremental drilling (Mirastar)

Non-destructive testing

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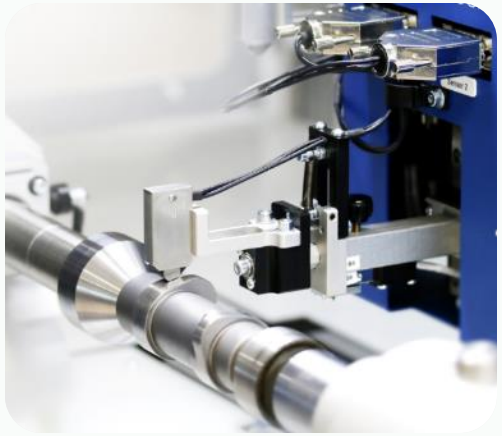

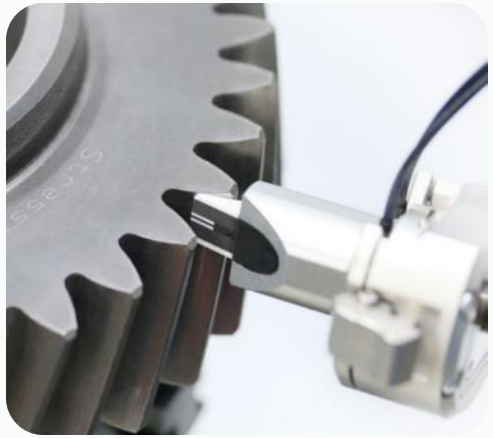

Grinding Burn Detection by noise Barkhausen

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