Project idea/ Field of expertise:	**Para**llel processing with ultra-**s**h**o**rt pulsed **l**aser (Parasol)
Organisation Name:	IREPA LASER INSTITUT CARNOT MICA
Adressed challenge(s)/ PPP(s):	Industrial Leadership - NMBP DT-FOF
Adressed topic(s) in Work Programme:	DT-FOF-07-2020 : Reliable and accurate assembly of micro parts (RIA)

IREPA LASER : RTO
Laser process & materials

IREPA LASER
INSTITUT CARNOT MICA

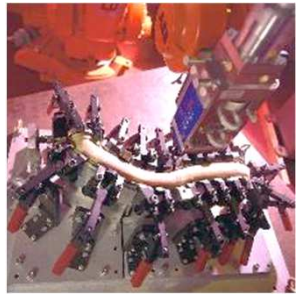
Our DNA

IREPA LASER develops innovative laser manufacturing solutions for the industry and assists their operational implantation on site.

4 expertises


Additive Manufacturing


Surface functionalisation


Metal & polymer Laser welding


Laser safety

Offer

- Design & Industrialization
- Advice & expertise
- Production
- Training

Industrial means

→ More than 20 industrial lasers: fiber, diodes, Nd-YAG, CO_2

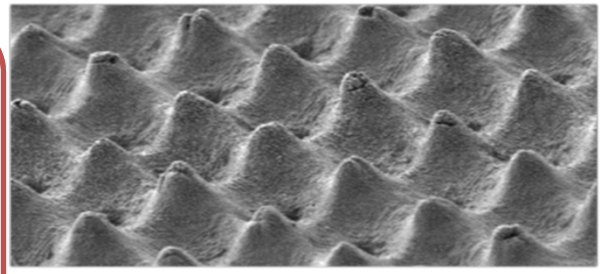
→ Industrial equipmentls : 5 axes AM machines, micro-machining machine, robots

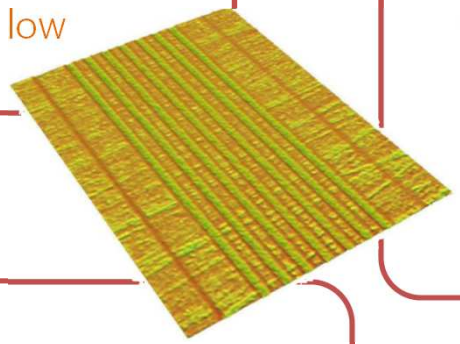
→ Laboratory and analysis means

Parallel processing with ultra-short pulsed laser (Parasol):

Combining high-speed and flexibility to build competitive laser manufacturing

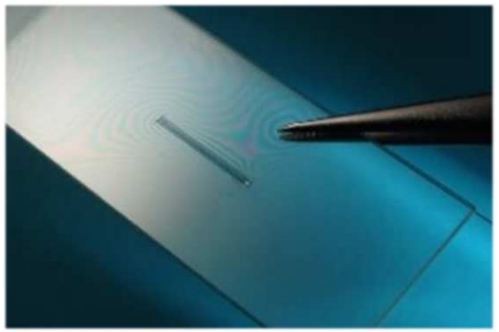
- **Situation:**
  - \+ USP laser enables : high accuracy, precise control of thermal effects, …
  - \+ New applications are possible (glass welding, micro or nano AM, etc.)
  - \+ Strong industrial adoption trend (+25 % in the 4 coming years)
  - \+ High USP laser power level already available
  - – Process productivity is still low
  - – High initial cost





- **Opportunity: multibeam parallel processing**
  - \+ Parallel processing scales up process throughput
  - \+ Beam engineering opens opportunity for innovative process
  - \+ Allows to make full use of high power USP lasers capex
  - \+ Enables flexible manufacturing tool concept

- **Objectives**
  - \+ Combine accuracy, speed, productivity, and flexibility in the same industrial laser tool
  - \+ Develop innovative manufacturing and assembly solutions based on TRL 3 – 4 existing results (glass welding, micro fabrication …)
  - \+ Integrate multi beam parallel processing into 4.0 manufacturing environment



Consortium (if any)

Known partners / Competence offer			
Name	**Type**	**Country**	**Role in the project**
QIOVA	SME	France	Partner: Multibeam system design & manufacturing
AMPLITUDE	LE	France	Partner: Laser design & manufacturing
Partner search			
Profile	**Type**	**Country**	**Role in the project**
Microparts-user or manufacturer	**SME / LE**	**-**	**Partner : End User**
	Each	-	Partner : Control, Characterization
	Each	-	Partner : communication, dissemination
	RTO / Acad	-	Partner : IT, AI

Contact details

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