Improved mechanical and biological performance

Design and materials/components/cellular modeling

Multi-Laser Multi-Material powder bed fusion – vision and strategies

Vipin Richharyia, João Pinto, Flávio Rodrigues, Carlos Andrade, Antonio Teixeira, Juliana Dias, Óscar Carvalho

Filipe Samuel Silva
Minho University
Portugal

Smart materials

Communication functions

Energy harvesting

Therapy (Actuating functions)

Diagnostic functions (Sensing)

Technology development

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Multi-Laser Multi-Material powder bed fusion vision and strategies
CMEMS – Center for MicroElectroMechanical Systems

1. Multi-wavelength simultaneous lasers for metal-ceramic composites (each laser wavelength according to each material absorption coefficient)(Al-SiC, hard metals, etc)

2. Multi-wavelength lasers for multi-material components ((each laser wavelength according to each material absorption coefficient)(metal-ceramic, metal-polymer)...

3. Additive-subtractive multi-laser approaches (different energy densities for additive and for subtractive function)

4. Multi-laser sequential strategies for immediate local stress relaxation

Bio-inspired components and processes

CMEMS – Center for MicroElectroMechanical Systems

Center of MEMS

UI-4436

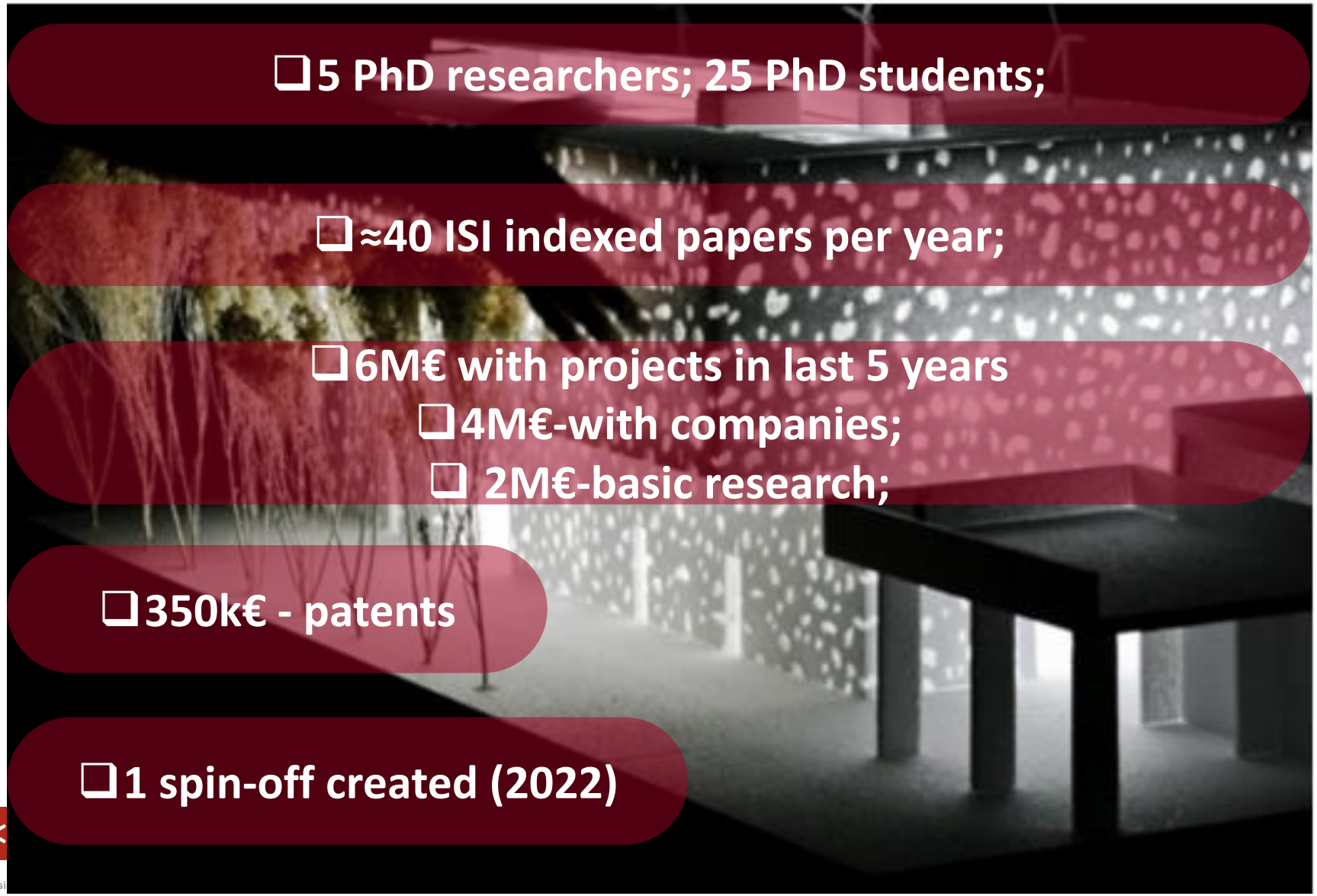
University of Minho

Evaluated as
'EXCELLENT' in 2014
and in 2018

UMINHO
CMEMS
CENTER FOR MICROELECTROMECHANICAL SYSTEMS

Bio-inspired components and processes

Laboratory of Micro-Fabrication and Systems Integration



- ❑ 5 PhD researchers; 25 PhD students;
- ❑ ≈40 ISI indexed papers per year;
- ❑ 6M€ with projects in last 5 years
  - ❑ 4M€-with companies;
  - ❑ 2M€-basic research;
- ❑ 350k€ - patents
- ❑ 1 spin-off created (2022)

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THANK YOU !!!

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