



**The Collider**

# The Collider Partner's **SAFARY TECHS**

MEETING THE SCIENTIFIC ECOSYSTEM

Leading research centers, laboratories, universities & singular institutions

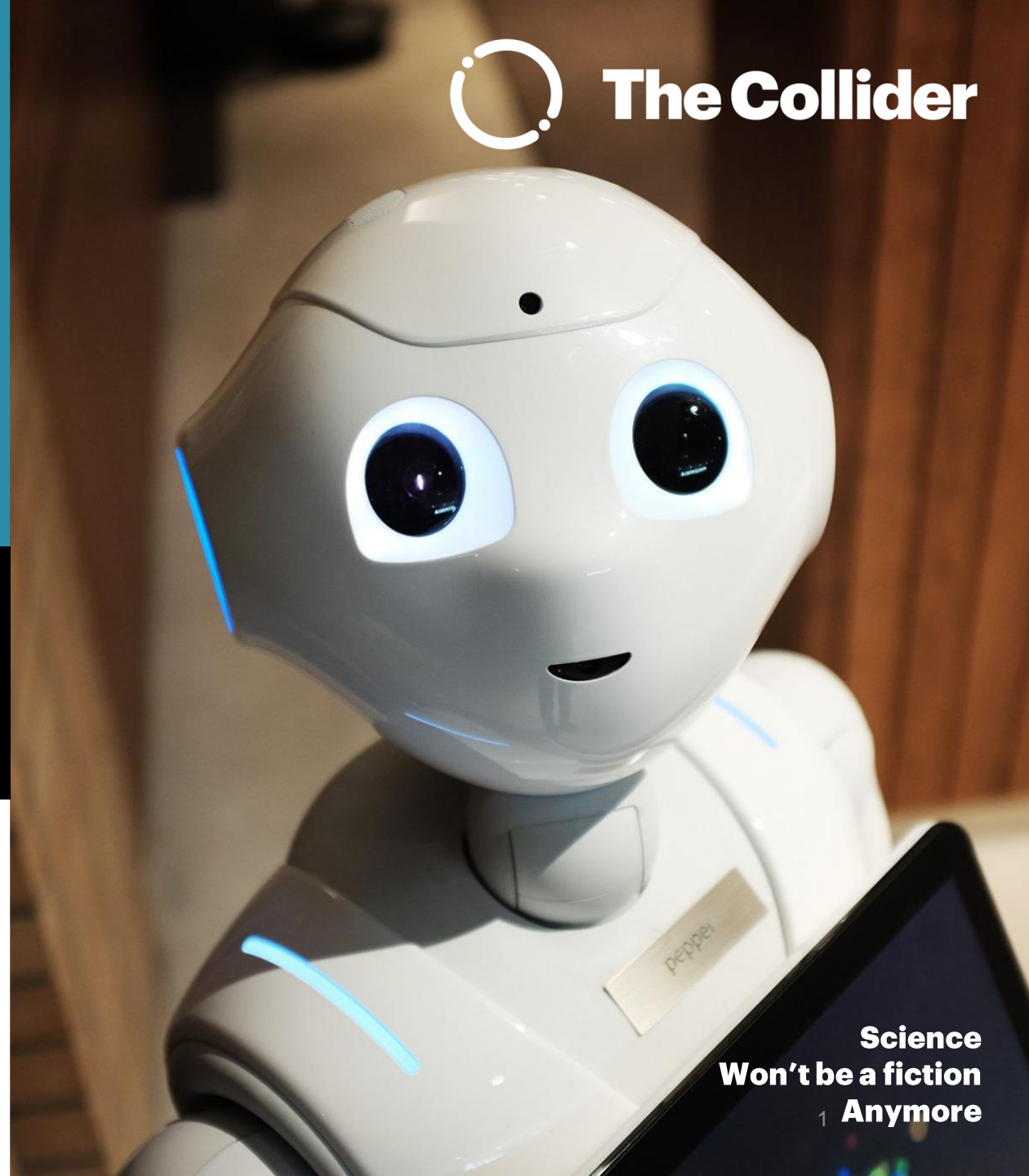


ONLINE

Improving #TechAbsorption & competitiveness of The Collider Partners



**Damm**



**Science  
Won't be a fiction  
Anymore**

# Universitat de Lleida

## Online SAFARY TECH

Videocall

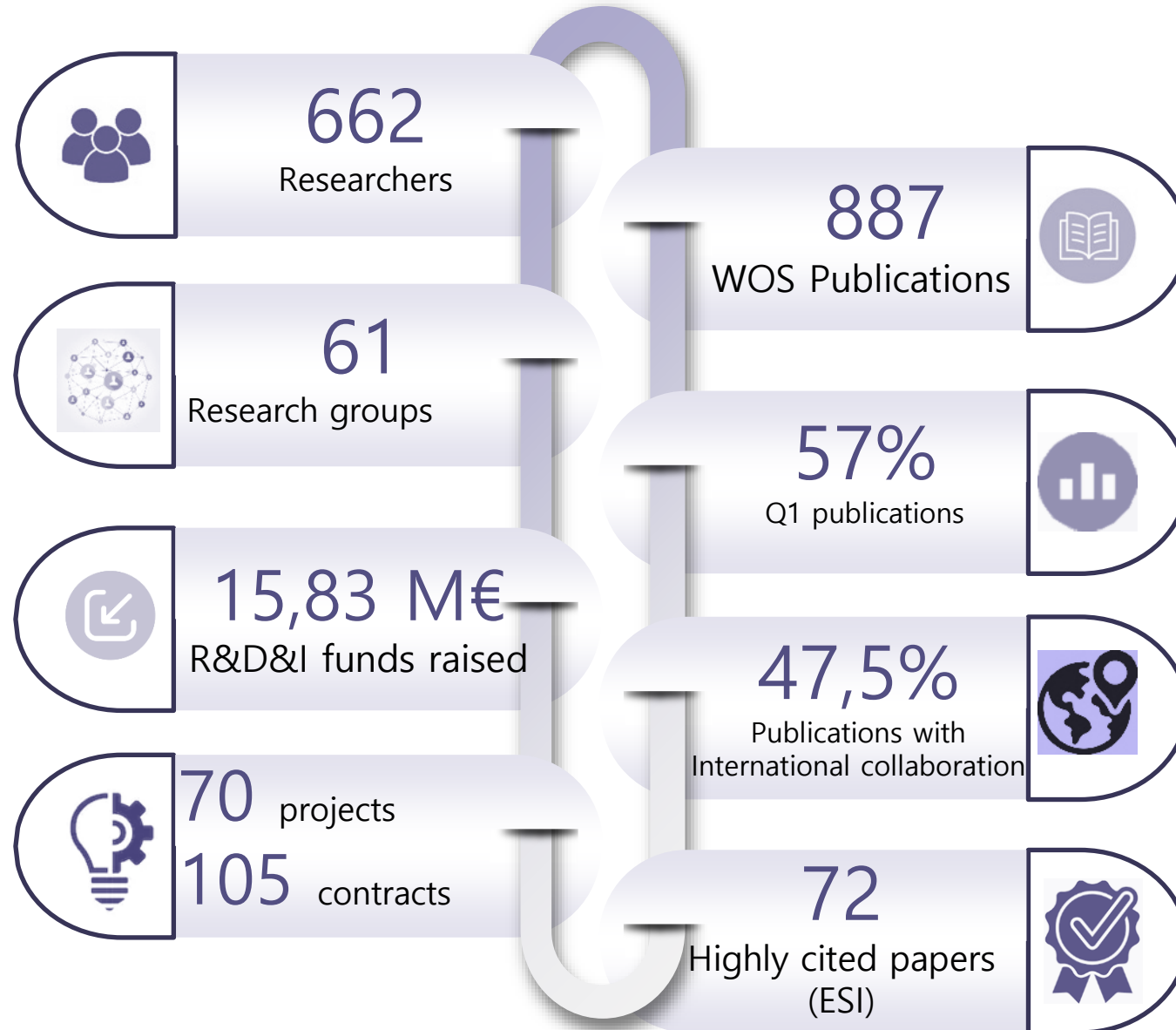
**Div. 26 de Novembre de 2021**

de 10 a 11'30h

Improving #TechAbsorption & competitiveness of The Collider Partners



# R&D&I overview at UdL (2020)



# R&D&I organization at UdL

Research centres



*Agrifood Science*



*Forest Science*



*Energy & Sustainability*



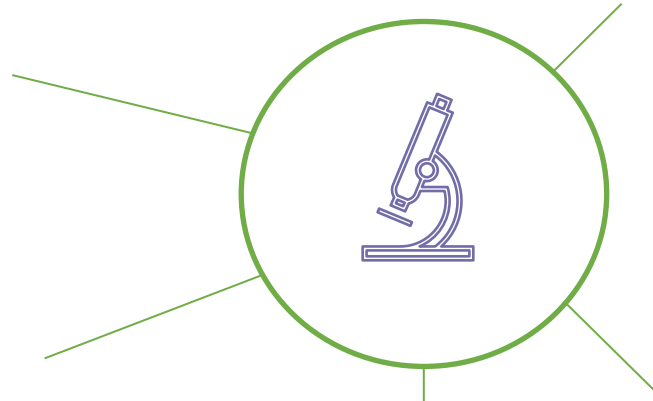
*Health*



*Social & Territorial Development*



61  
Research Groups



36  
Technical-scientific services

17  
University-Company Chairs

Tecnio groups





# Energy & Sustainability

Energy and Sustainability at UdL are among the research topics of the **Polytechnic Institute for Innovation and Sustainability Research (INSPIRES)**:

## Efficient and Sustainable Energy

**Generation** and **management** of **energy** and its application in **buildings**, **urban** and **rural** environment, and **agricultural** industry in a **sustainable** and **efficient** way.



## Smart Living

An "intelligent" investment in **human and social capital**, **mobility** and **information technologies** facilitates **sustainable** economic **development** and a high **quality of life** through **citizen participation**.

# Energy & Sustainability

## Efficient and Sustainable Energy:

### R&D&I infrastructure for energy systems and sustainability

- Systemic **Innovation** Management Model
- Promote and **validate** new **value chains** and **business models** for **energy** production and consumption
- Focus on **renewable energy** sources and **energy efficiency**
- Prototyping and experimentation **available** for **companies** and **public administrations**

### Mahou San Miguel Solar project

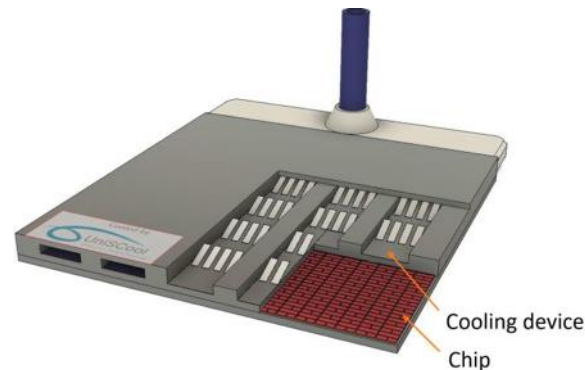
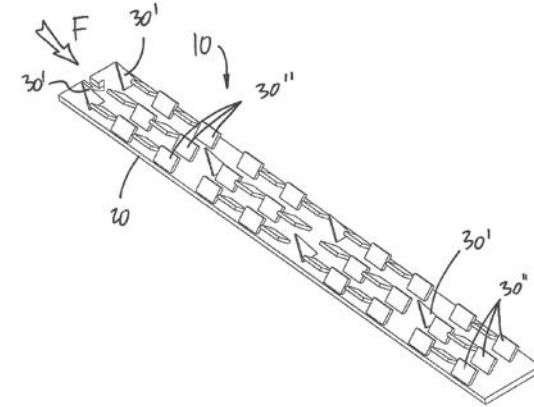
- **Feasibility study** showing the of a **photovoltaic facility** to meet the energy needs of the Lleida plant
- Analysis of available covers, installable photovoltaic potential, optimal orientation, etc.



## Efficient and Sustainable Energy:

### UniSCool Project

- **Spin-off** company, **patented** technology “**Deformable fin heat exchanger**” by Universitat de Lleida and Université de Sherbrooke
- Efficient, and environmentally friendly **cooling system**:
  - Based on a **liquid-cooled heat sink**
  - **Adapts** to time-dependent and non-uniform heat load scenarios
- Applications where **thermal management** has become a key and even limiting factor for its development, especially:
  - Advanced **microprocessors**, **data centres** and **power electronics** in **electric vehicles**





# Energy & Sustainability

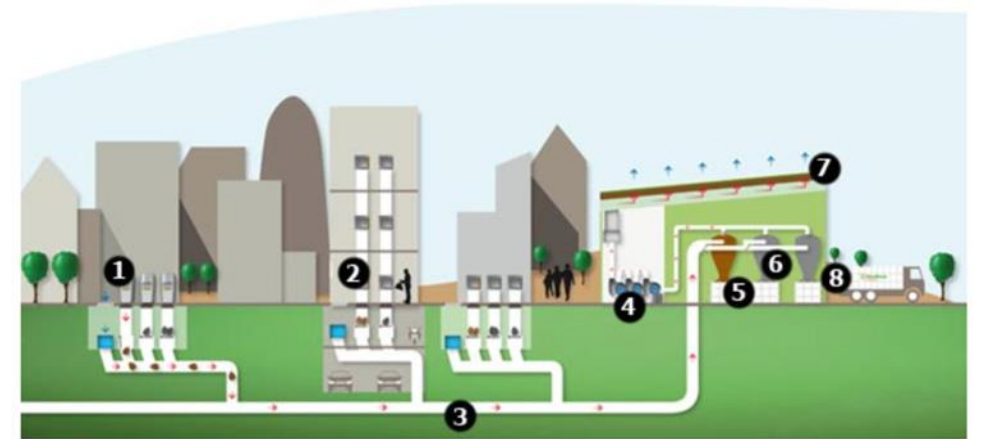
## Smart Living:

### NEWMATIC

advanced smart and energy efficient pneumatic waste collection system



- Improve pneumatic waste collection applying **optimisation** techniques based on **Artificial Intelligence**
- Design of a **robot** to facilitate **maintenance** of the infrastructure



### "Verd de proximitat BCN"

- Funded by Barcelona City Council and “La Caixa” Foundation
- Monitoring and evaluating the **operation** and **impacts** of **green roofs**
- Inclusive, participatory, economically viable and sustainable



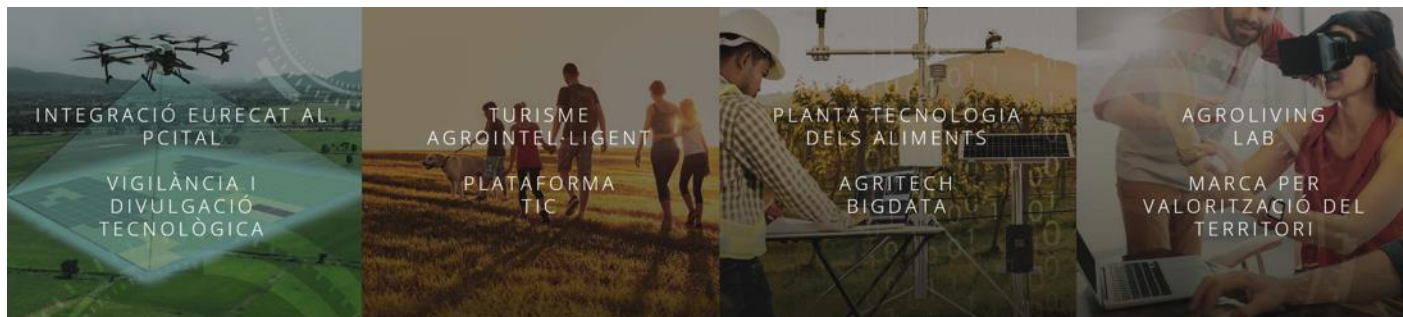


## Agrifood Science

- UdL is considered one of the top Spanish Universities in Food Science & Technology (4th Spanish Institution in Shanghai ranking 2021)
- Priority areas cover: pests' control, precision farming, agribusiness, rational use of pesticides and next generation packaging, among others.

### Transference & Innovation:

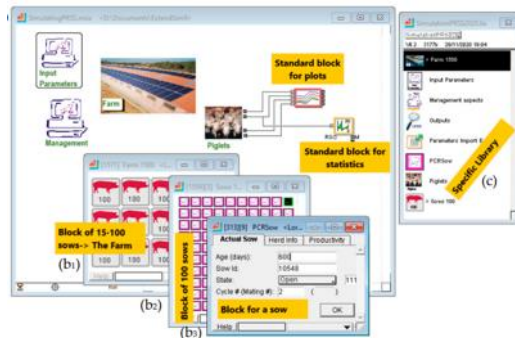
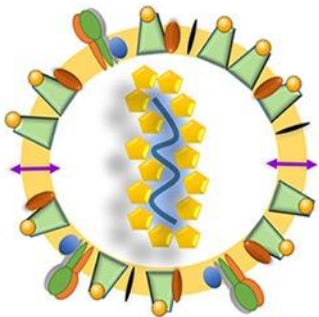
- Technologic transfer to agrifood SME
- AgrolivingLab
- AgroSmart tourism
- Agritech Big Data & Data Spaces



- Promote automation and technology integration
- Incorporate the circular economy into the industry's agenda
- Incorporate biotechnology as a resource for innovation

## One health:

- Evaluation of resistance against PRRSV and development of next gen vaccines
- Reduce the environmental impact of pig farms at source (manure and gas emissions)
- Carbon footprint in the pork meat chain
- Technology transfer for manure treatment
- Decision support tools and AI to improve pig management



# Agrifood Science

## Sustainable food processing:

- Food safety, quality and functionality through non-thermal processing, with a focus on fruits and vegetables
- Edible films and coatings; nano-emulsions and nano-coatings
- By-product's characterisation and valorisation from fruits and vegetables processing

## AgroICT & Precision Agriculture:

- Geostatistical analysis and mapping
- Remote sensing and laser scanning
- Dose adjustment and decision support system for plant protection products application
- Drift detection of plant protection products using LIDAR sensors
- Weeds control tools: IPM Advice



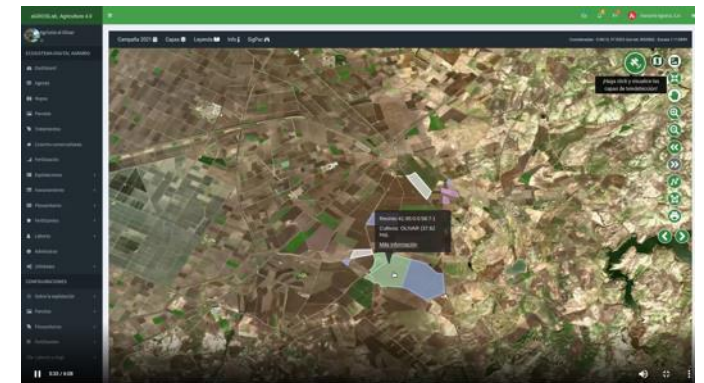
## AgroICT & Precision Agriculture: IPM Advice

IPM Advice: A spin-off company that commercializes and keeps update the software IPM Wise. This technology uses DSS for Integrated Weed Management in several crops.

The software shows the expected efficacy of a given herbicide on different weed species and different conditions of temperature and drought stress.

Among others, IPM Wise offers the following information:

- ✓ Product efficacy
- ✓ Optimal dose
- ✓ IPM efficiency targets for different weed densities
- ✓ Minimum doses necessary to meet the efficacy objectives.







**Thank you!**

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Lleida, 18th February 2022



# The Collider

A programme of

