R&D at I3A of the University of Zaragoza
OUR OBJECTIVES:
• The promotion of scientific research related to diverse fields of engineering.
• Contribute to economic development by technology transfer to the industrial sector.
• Support of high qualification education, at postgraduate and doctoral level.
• The dissemination of science and technology in society.

Placed at Campus Río Ebro (Zaragoza) next to the Engineering and Architecture Faculty (EINA)
I3A inside the University of Zaragoza

University of Zaragoza: main institution

I3A: research coordination & strategy, scientific policy, labs management, technical services

Research groups: knowledge
Some figures 2020

- 33 research groups
- Turnover 2020: 10,3M€
- Papers: 422; JCR: 338
- New PhD thesis: 22
- Oral conferences: 100
- Invited talks: 11
- New registered patents: 10
- Cutting-edge labs: 8

- PhD
- Non PhD
- Administration
- Government
- Regional
- National
- European
- Industry

- Q1: 56%
- Q2: 29%
- Q3: 12%
- Q4: 4%
El I3A en Cifras 2020

**Personal**
- 272 Miembros permanentes doctores
- 201 Miembros temporales
- 29 Miembros adscritos
- 8 Profesionales de Administración y Servicios
- 4 Divisiones
- 33 Grupos de investigación

**Fondos anuales**
- **10.3M€** Total
- **5.4M€** Empresa
- **1.8M€** Europeo / Internacional
- **1.6M€** Nacional
- **0.7M€** Autonómico
- **0.3M€** Soporte Gobierno de Aragón
- **0.3M€** Cátedras
- **0.1M€** Cuotas y servicios

**Actividad científica**
- 386 Proyectos iniciados en 2020
- 699 Proyectos activos
- 338 Artículos JCR
- 56% Primer cuartil
- 84 Artículos sin factor de impacto
- 161 Congresos
- 29 Libros y capítulos de libros
- 12 Cursos y jornadas
- 28 Conferencias por investigadores externos
- 10 Patentes concedidas

**Proyección internacional**
- Participación en redes científicas y plataformas tecnológicas
- Más de 100 colaboraciones con centros extranjeros

**Interacción con la sociedad**
- 1 Foro Tecnológico y Empresarial
- Más de 15 Premios y Distinciones
- Numerosas participaciones en exposiciones, charlas, ...
- Más de 150 apariciones en medios de comunicación
We structure our research lines into 4 strategic research divisions

ICT Division
Technologies for the knowledge society

Chemical Processes & Recycling Division
Engineering to improve the environment

Industrial Technologies Division
Technologies for the factories of the future

Biomedical Engineering Division
Engineering techniques for the improvement of health
Information & Communication Technologies Division

Technologies for the knowledge society

- Advanced computing technologies and smart embedded systems
- Infrastructures, technologies and services for communications
- ICT for digital content and creativity: audio-visual technologies and multimedia
- Advanced interfaces and robots
- Artificial Intelligence, Virtual and Augmented reality, Intelligent buildings
Research laboratories

Cluster Hermes

Navigation robotics
Processes & Recycling research areas

Chemical Processes & Recycling Division

Engineering to improve the environment

‣ Energy and environment
‣ Hydrogen technologies
‣ Recycling and waste valorization
‣ Packaging, food quality and safety
‣ Agro-food technologies
‣ Circular Economy
Research laboratories

Thermal engineering lab

Fluidized bed gasification pilot plant
Biomedical Engineering Division

Engineering techniques for the improvement of health

- Biomaterials and tissue engineering
- Biological and biomechanical modeling
- Biomedical instrumentation and signal processing
- Prevention and care technologies
- Personalise medicine, AI
Research laboratories

Tissue and scaffold characterization laboratory

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Industrial Technologies research areas

Industrial Technologies Division

Technologies for SMART MANUFACTURING

» Electronics & photonics
» Metrology & advanced fabrication
» Automotive
» Logistics
» Advanced materials & structural design
» Industry 4.0, Fotonics, Home Appliances
Research laboratories

Impact Lab in TechnoPark

Multilayer deposition facility
Cutting-edge Labs

We have recently created 8 cutting-edge labs

Smart Cities
Artificial Intelligence
Fotonics
Circular Economy
Industry 4.0
Personalized Medicine
Virtual & Augmented Reality
Home Appliance Technologies
Education and Skills

Biomedical Engineering Master & PhD program

Expert on Digital Transformation & Smart Manufacturing Program

Young Researchers’ Day
Support to Digital Transformation

ARAGÓN DIH
Aragón Digital Innovation Hub
High Performance Cloud & Cognitive Systems

European platform of national initiatives on digitising industry
- Strengthening leadership through partnerships & industrial platforms
- Preparing Europeans for the digital future
- A regulatory framework fit for the digital age
- Digital innovations for all Digital Innovation Hubs
Dissemination

- Pint of Science
- School Visits & Open days
- Photonics Education
- Exhibitions
Our Institute holds 3 ERC grants in biomedical engineering and ICT.

**Key Projects**

**INSILICO-CELL**

José Manuel García Aznar

**MODELAGE**

Esther Pueyo

**CHAMELEON**

Diego Gutiérrez
Success case: technology transfer

8 different groups from I3A work in collaboration with the company B/S/H

The University of Zaragoza is the world second institution in research related to home appliances according to the Thomson Reuters World Innovation Report 2017
Success case: social challenges

Assistive Technologies

Several groups from I3A work in the development of new technologies applied to cognitive & physical disabled and elderly people.
Why I3A can face complex challenges?
FACT 1

We have Good Research Teams in many fields of engineering ranging from chemical engineering to software engineering.

FACT 2

There are many evidences about the quality of the research teams. It can be difficult to find a Research Institution with a good level in the following large list of indicators: Publications, Research Projects, International visibility, financial support, patents, industrial impact.
FACT 3

The added value of I3A is the PLASTICITY, understood as the ability to adapt this line of action to the stated CHALLENGE.

FACT 4

Small flexible groups can face these complex/big problems through a structure such as I3A.