

Annual Report 2025



LEITAT
managing technologies

120 YEARS
1906-2026

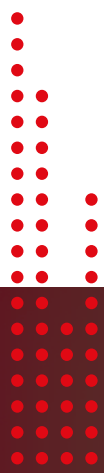
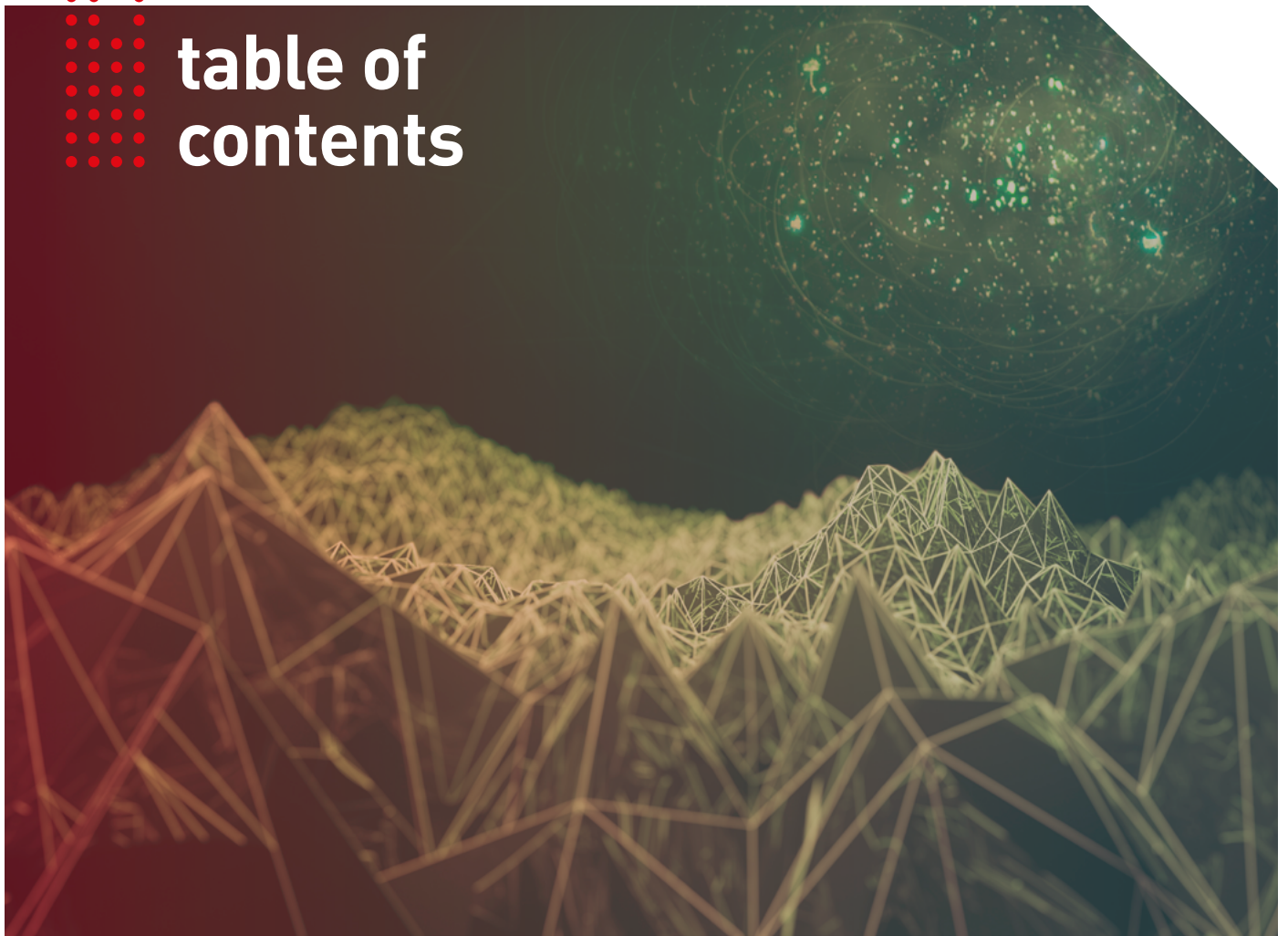


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1 ABOUT US

We are a technological center that offers solutions to the demands of companies and entities, with a clear focus on generating competitive value and a sustainable future.



1.1. MESSAGE FROM THE CHAIRMAN AND CEO

The year 2025 has been a year of consolidation, learning, and looking ahead. In a demanding context, marked by the constant transformation of the innovation system and new challenges in industry and society, the center has continued to move forward with determination, reinforcing its mission and its commitment to technology transfer, progress, and the generation of impact.

This year has provided an opportunity to reflect on the journey so far, the progress achieved, and, at the same time, clearly identify the areas that must continue to be strengthened to face the coming years with greater solidity, ambition, and responsiveness. After the beginning of a cycle marked by recovery and the promotion of a new management model, Leitat consolidates the foundations of a stage aimed at growing in a sustainable, efficient way, and aligned with the needs of the productive fabric.

Although we did not fully meet our initial expectations for the year, Leitat maintains a solid evolution and a clear will for continuous improvement. The center continues to reinforce its operational efficiency, its capacity for adaptation, and its role as an agent of innovation at the service of companies, administrations, and society.

DRIVING R&D AND TECHNOLOGY TRANSFER

Throughout the year, the center has continued to drive significant activity in R&D projects and technological services, with 406 industrial projects, consolidating its position in the innovation ecosystem through collaboration with companies, public authorities, and European entities.

This joint work reinforces Leitat's contribution to the generation and transfer of knowledge, especially in areas such as health, energy transition, circular economy, and industrial digitalization, as well as in disruptive technologies with an impact on the industrial ecosystem, as demonstrated by the more than 5,534 clients we have worked with over the last 10 years.

Likewise, progress has continued in positioning the center in public-private collaboration projects, consolidating its experience and recognition in managing complex initiatives at both national and international levels.



The growing integration between Leitat's different areas and departments, allowing it to offer comprehensive, advanced solutions adapted to the new challenges of the market and society.

PEOPLE, THE DRIVING FORCE BEHIND LEITAT

Leitat's progress is possible thanks to the commitment, dedication, and talent of the people who are part of the center. With more than 400 professionals from over 20 different nationalities, we continue to invest in specialization, internal collaboration, and professional development as fundamental pillars to face present and future challenges.

This diversity enriches us as an organization and reflects the capacity of Leitat and Catalonia to attract international talent. Many of these people have chosen Leitat and Catalonia to live and begin a new stage in their professional and personal lives, a fact that makes us especially proud and, at the same time, brings a sense of responsibility.

In a time of constant transformation, our people remain the driving force to convert knowledge into solutions, accompany companies in their innovation processes, and respond to major technological and social challenges.

INNOVATION FOR A SUSTAINABLE FUTURE

Sustainability continues to be a cross-cutting axis of our activity, but in the last year, it has been deeply transformed by the rapid rise of artificial intelligence across every aspect of society and industry. From Leitat, we work to integrate these two levers —sustainability and advanced digitalization— into the development of technological solutions and the strategic orientation of our projects, thereby contributing to a more efficient, responsible, and competitive model.

This dual approach drives us to promote projects that improve the competitiveness of the business ecosystem through the combination of scientific knowledge, technological capabilities, and applied artificial intelligence tools.

In this context, the growing integration between Leitat's different areas and departments, allowing it to offer comprehensive, advanced solutions adapted to the new challenges of the market and society.

LEITAT
managing technologies

120 YEARS
1906 - 2026

PREPARING FOR THE 120TH ANNIVERSARY

2025 has also been a year of preparation for an especially significant milestone: Leitat's 120th anniversary, to be celebrated in 2026. A date that will highlight the trajectory, adaptability, and historical commitment of the center to innovation, industry, and technological progress.

With its sights set on the coming years, Leitat moves forward with the determination to consolidate its transformation and reinforce its impact as a key agent in technological innovation and knowledge transfer at the service of society and industry.

Mr. Ramon Pastor
Chairman
presidencia@leitat.org



Mr. Jordi Cabrafiga
CEO
info@leitat.org

1.2. VALUE PROPOSITION



PURPOSE

We generate technological knowledge and innovation, managing a broad range of technologies and talent.



MISSION

We manage technologies to create sustainable, social, environmental, economic, and industrial value, transferring this value to companies and entities through research and technological processes.



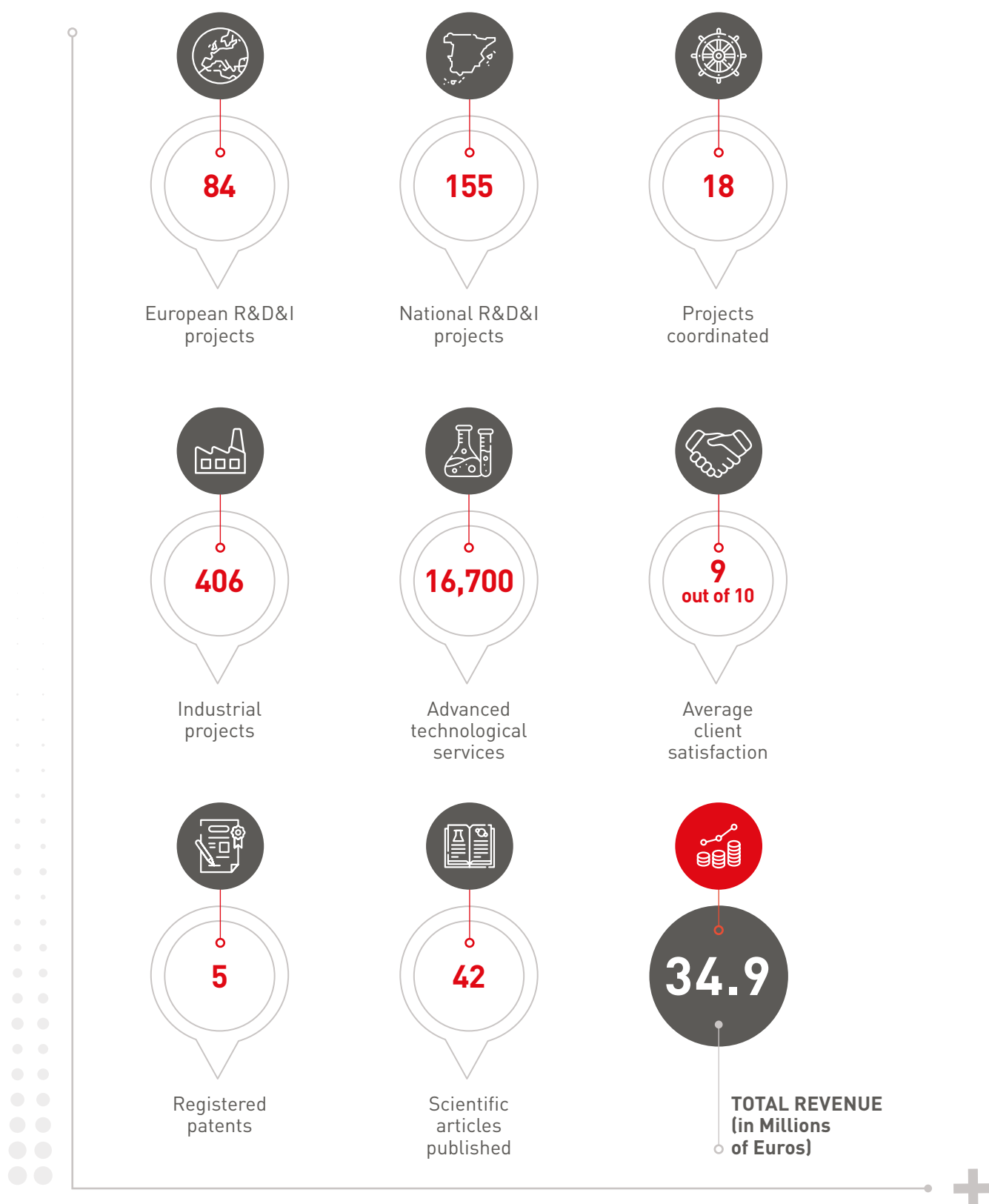
VALUES

Our values are built on four strategic pillars to successfully address challenges.

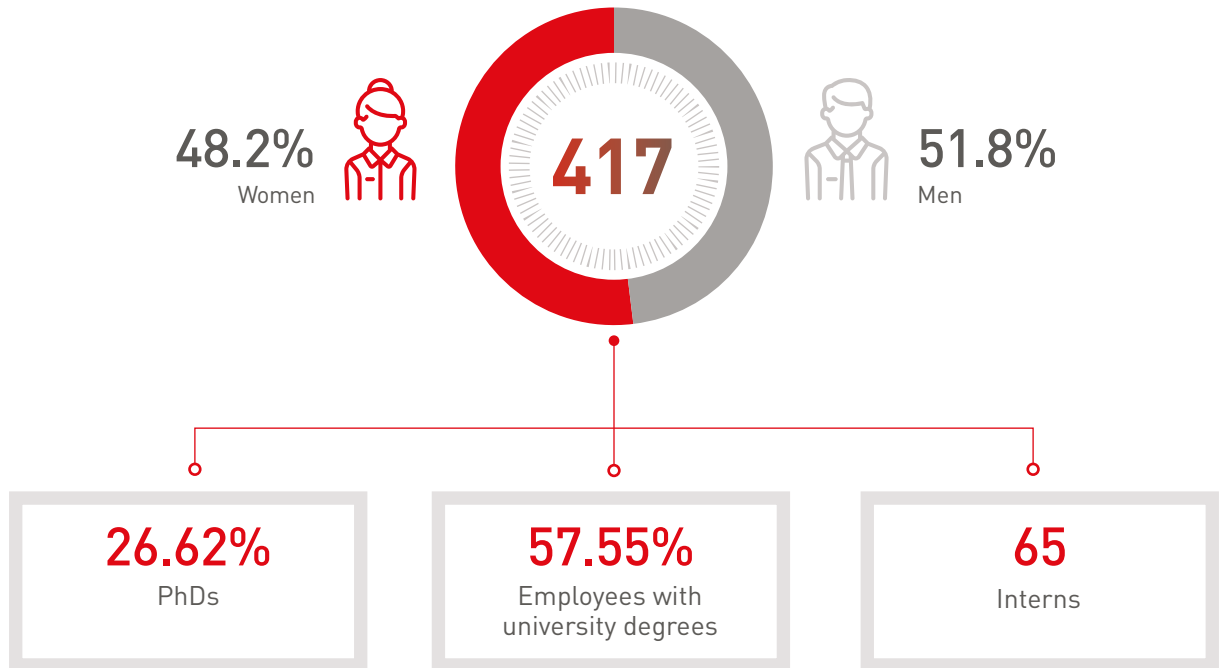
INNOVATION
+
TALENT
+
REPUTATION
+
PROFITABILITY



1.3. LEITAT IN FIGURES

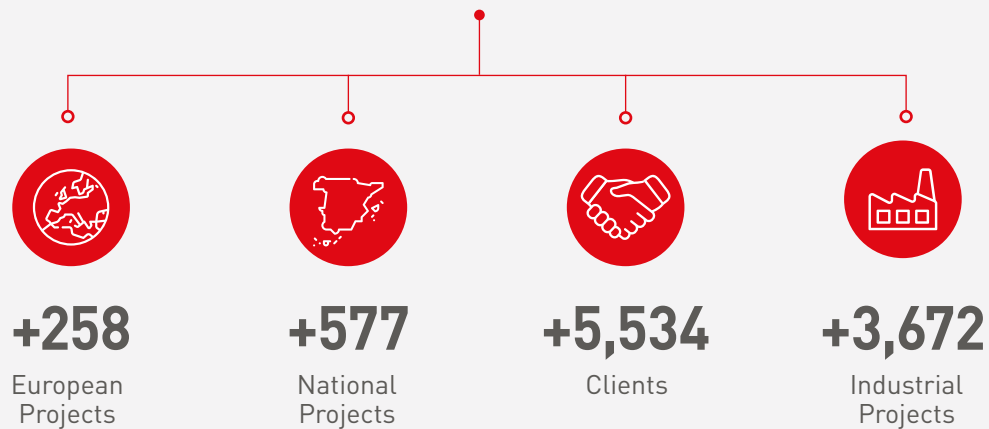


TEAM AND TALENT

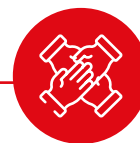


[Data extracted from the average number of total Leitat employees in 2025]

IN THE LAST 10 YEARS



1.4. COLLABORATIONS



At Leitat, we base our activity on the “Open Innovation” model and we are permanently connected with the different scientific-technological agents worldwide.

119

**PARTICIPATIONS
IN ENTITIES**

- + Universities and Training Centers
- + Platforms
- + Associations and Clusters
- + Companies and Entities
- + Institutions
- + Technology Centers

**WE SERVE ON THE BOARDS OF THE
LEADING ORGANISATIONS IN THE
TECHNOLOGY SECTOR**

**2nd Vice Presidency and Regional
Focal Point for Europe**



- + World Association of Industrial and Technological Research Organizations

Board Member



- + Spanish Association of Biotechnology Companies

Presidency



- + Textile Cluster

Board Member



- + Agricultural Machinery and Production Inputs Cluster

**Governing Council
Member**



- + Spanish Federation of Technology Centers

Board Member



- + Spanish Technology Platform for Robotics

Board Member



- + SECPHO

Board Member



- + Catalan Water Partnership

1.5. ORGANIZATION CHART

Leitat (Asociación Acondicionamiento Tarrasense) is a private non-profit entity, with its own legal personality and assets, founded in 1906. Our activities are regulated according to current legislation and our own Code of Ethics.

GENERAL ASSEMBLY



The General Assembly is the sovereign governing body of the Association. All its members participate by right, and it is responsible for making decisions on all matters that the Statutes assign to it as exclusive competencies.



MANAGEMENT ORGANIZATION CHART



+ Jordi Cabrafiga
CEO



+ Aintzane Arbide
Deputy General
Manager



+ Pere Regull
Corporate
Director



+ Laurent Aubouy
Director of Applied
Research and
Technological
Services



+ Dirk Saseta
Director of Business
and Operations



+ Sergi Artigas
Director of Innovation
Strategy and
Technology Transfer



+ Eri Vázquez
Director of
Strategic
Projects



BOARD OF DIRECTORS

The Board of Directors holds the authority to represent, manage, and administer the Association. Likewise, it ensures compliance with the decisions of the General Assembly and acts in accordance with the regulations, instructions, and guidelines established by it.

In June 2025, Leitat initiated a new institutional stage with a leadership transition in its presidency. Ramon Pastor assumed the presidency of the entity, succeeding Jordi William Carnes, who had led the institution in recent years. This change reinforces Leitat's commitment to innovation, technology transfer, and driving industrial competitiveness.



+ Mr. Ramon Pastor Martínez,
Chairman of LEITAT
Representing
FUNDACIÓ CECOT
INNOVACIÓ



+ Mr. Xavier Panés Sancho,
Board Member
Representing
ASSOCIACIÓ CECOT



+ Mr. Francesc Roca Llongueras,
Vice Chairman
Representing
FINISH S.A.



+ Mr. Oriol Alba Sendra,
Board Member
Representing
UNIÓ EMPRESARIAL
METAL-LÚRGICA



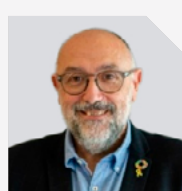
+ Mr. Jaume Baró Torres,
Board Member
Representing
PARC TECNOLÒGIC
DEL VALLÈS, S.A.



+ Mr. Ricard Cimà Julià,
Board Member
Representing
INSTITUT
INDUSTRIAL DE TERRASSA



+ Mr. Joan Romero Circuns,
Board Member
Representing
AGÈNCIA PER LA
COMPETITIVITAT DE
L'EMPRESA (ACCIO)



+ Mr. Joan Serra i Albesa,
Secretary
Non-member

1.6. LOCATIONS



TERRASSA

Headquarters

VILANOVA DEL CAMÍ

Anoia Innovation Center

LLEIDA

Parc Agrobiotech Lleida

VALENCIA

Biopolo La Fe Valencia

BARCELONA

Barcelona Chamber of Commerce

C/Pallars - 22@

Barcelona Science Park

DFactory Barcelona

Vall d'Hebron - VHIR Edifici
Mediterrània Building

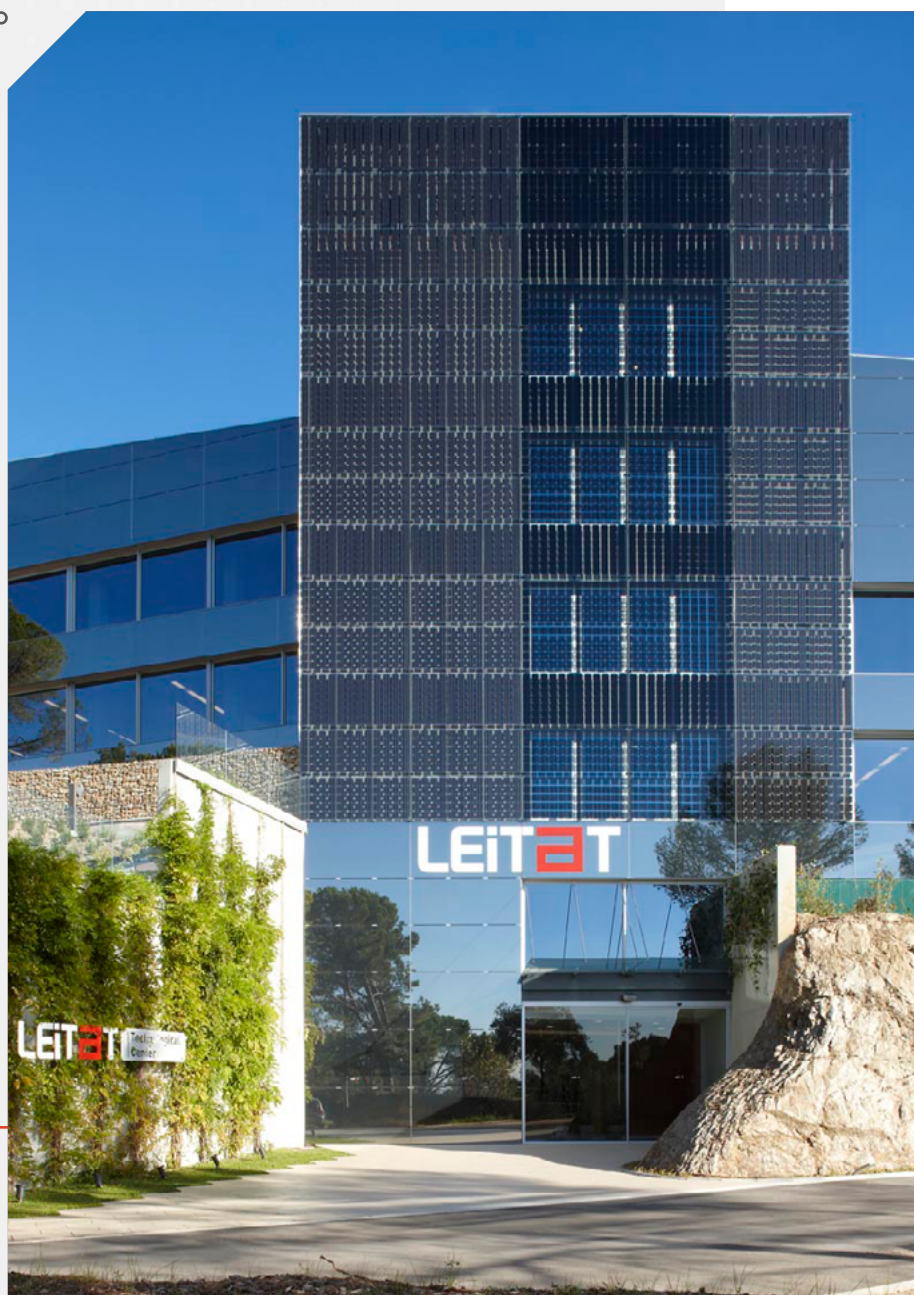
Health & Biomedicine

Applied Chemistry & Materials

Circular Economy & Decarbonization

Digital Industry

Advanced Technological Services





2. SERVICES AND AREAS OF KNOWLEDGE

First technological center in the country certified under ISO 13485 for the design and development of four categories of medical devices. HEALTH & BIOMEDICINE Y DIGITAL INDUSTRY

Leitat has obtained the UNE-EN ISO 13485:2018 certification [...], consolidating its capacity to accompany medical projects in regulated environments, from research and development to prototyping.

The certification, awarded by AENOR, recognizes Leitat's activities in the fields of design and engineering of electromedical equipment, diagnostic support software development, design and development of instruments through additive manufacturing and 3D printing, and the development of bioreceptors for in vitro diagnostics.

Within the framework of the DiM&D project, Leitat reinforces its position as a technological partner for healthcare sector entities, ensuring traceability, quality, and regulatory compliance under European regulations.



2.1. HEALTH & BIOMEDICINE (H&B)

Scientific and technological innovation to transform the industry

We offer advanced scientific and technological solutions for the chemical, veterinary, biotechnological, and pharmaceutical sectors, driving industrial transformation and development with innovation and expertise.

IN VITRO MODELS

- To study the efficacy, safety, mechanism of action, screening, ADME-Tox, bioanalysis, metabolomics, etc., of drugs, medical devices, cosmetics, regenerative products, and dietary supplements.

ANTIBODY ENGINEERING

- Humanization, Chimerization, Antibody fragments (Fab, scFv), Phage Display Libraries, VHH single domain (nano) antibodies, bispecific antibodies, biosimilars, and antibody-drug conjugates (ADC).

REGENERATIVE MEDICINE

- For osteoarticular - musculoskeletal injuries, cartilage, tendon, ligament, in small and large animals, combined with imaging studies (CT, MRI).

IN VIVO MODELS

- To study efficacy, combination therapy, immuno-oncology, biodistribution, pre-toxicity and Maximum Tolerated Doses (MTD), preliminary pharmacokinetics (pre-PK), histology, etc. (oncology, inflammation, dermatology, neurodegeneration, cellular and tissue regeneration, angiogenesis).

ANTIBODY GENERATION

- Custom polyclonal and monoclonal antibodies (mAb) for basic research, diagnosis, and therapeutic treatments.

MICROBIOME AND NUTRITION

- Studies on the dysbiosis, and human microbiota transplant. Collaboration in the development of probiotics and prebiotics for nutrition and disease treatment.



CAPABILITIES

- Multidisciplinary team, scientific-technical background, industrial approach.
- Biologists, biotechnologists, bioengineers, biochemists, pharmacists.
- Preclinical drug development and advanced therapies.
- Research and validation of diagnostic biomarkers.
- Antibody development and engineering.
- Phage lab (phage display).
- Monoclonal antibody lab.
- Dermocosmetics/dermatology lab.
- Stem cells (iPSC, mesenchymal).
- Organoid bank.
- Advanced models for Oncology, CNS, IBD, and osteoarticular pathologies.
- Bioprinting.
- In vivo microbiome models.
- Full access to the Barcelona Science Park infrastructure: genomics, animal science, proteomics, microscopy, etc.

2.2. DIGITAL INDUSTRY (DI)

Technological innovation for a sustainable and competitive digital industry

We have key technological capabilities for digital transition, from digital manufacturing to smart products, with a focus on the health and industrial sectors.

DIGITAL MANUFACTURING

- + Design and engineering of advanced applications in additive manufacturing.
- + Development of innovative materials and processes in additive manufacturing.
- + Post-processing strategies and functionalization for 3D components.
- + Development of new robotic technologies and processes.

ADVANCED DATA AND SENSORS

- + Development, testing, and validation of new industrial, health, and environmental monitoring sensors.
- + Development of microfluidic devices and diagnostics.
- + Development of new photonic systems and advanced vision.

CONNECTIVITY AND INFORMATION

- + Development and application of new IoT device connectivity protocols.
- + Security and embedded intelligence in devices.
- + System interoperability and heterogeneous data integration.
- + Applied AI and software engineering.

SMART PRODUCT DEVELOPMENT

- + Product design and engineering.
- + Testing, experimentation, and validation of target applications.
- + Support and assistance in industrialization.



CAPABILITIES

- + Multidisciplinary team, scientific-technical background + industrial experience.
- + Optical, electronics, mechanical, telecommunications, and software engineering.
- + Physics, chemistry, and electrochemistry.
- + Product design and engineering.
- + Additive manufacturing infrastructure.
- + Robotics lab.
- + Electronics, IoT, and private 5G connectivity lab.
- + Photonics & vision lab.
- + MedTech / bioengineering lab.
- + Digital software laboratory.
- + CAD/CAE/CAM software tools, simulation, and modeling.
- + Physical, electrochemical, and optoelectronic characterization equipment.
- + Lifespan and accelerated aging equipment.

2.3. APPLIED CHEMISTRY & MATERIALS (ACM)

More efficient processes, more innovative products

We carry out comprehensive projects in applied chemistry and new materials, covering the entire value chain. We address everything from synthesis and formulation to scaling and technology validation. Our testing includes accelerated aging, stability, efficacy, and mechanical properties. Our goal is to drive industrial innovation and strengthen the productive fabric.

SYNTHESIS

- Synthesis of organic molecules using conventional techniques and flow chemistry.
- Study and synthesis of polymers and biopolymers, resins, organic compounds, surfactants, and oils. Synthesis of micro and nanocapsules.
- Synthesis and surface modification of metallic, ceramic, nanofibers (polymeric and carbon-based), and carbon structures.
- Study and modification of surfactants, oils, and fats.

PROCESSING AND APPLICATION

- Polymer transformation using conventional techniques (injection, extrusion, film extrusion, and injection-blow molding).
- Manufacture of polymeric membranes (flat and hollow fibers) for filtration processes (from microfiltration to reverse osmosis), gas separation and purification, or recovery of high-value compounds.
- Vacuum plasma and atmospheric plasma treatments.
- Application in coating cabins for liquid coatings (water-based, solvent-based, 100% solids) and powder coatings.
- Application of finishes and coatings by impregnation (padding), exhaustion (autoclave), and doctor blade. Ink printing (screen printing, flexography, gravure printing).
- Surface washing processes by spray and immersion at the pilot scale.
- Application of lubricants on metal surfaces.
- Surface treatment of metals to improve corrosion resistance.
- Deposition of metallic and metal oxide coatings through redox processes.

DESIGN AND FORMULATION

- Formulation of paints, printing inks, adhesives, and functional coatings.
- Formulation of pretreatment, dyeing, and finishing products for textiles, paper, and leather.
- Formulation of detergents and cosmetic products.
- Development of polymeric composites (nanocomposites, biocomposites) through extrusion.
- Electrospinning of nanofibers and nanomesh with active materials for absorbents or electrodes.
- Formulation of lubricants, greases, and industrial cleaning products. Formulation of heat transfer fluids.

CHARACTERIZATION AND VALIDATION

- Material characterization (mechanical properties, impact, barrier, antimicrobial, hardness, scratch resistance, adhesion, fire resistance).
- Chemical characterization: HPLC, GPC, UV-VIS, FTIR, ICP-MS, etc.
- Efficacy studies for all domestic and industrial categories and suitability for the use of EU Ecolabel products.
- Stability studies of formulations.
- Lubricity, corrosion, and foaming studies for tribochemical products.
- Consumer tests and olfactory evaluations.
- Accelerated aging tests. Membrane evaluation.

CAPABILITIES

- Multidisciplinary team, scientific-technical background, scientific and industrial approach.
- Chemistry, chemical engineering, materials engineering.
- Advanced materials, nanotechnology, organic and inorganic chemistry, polymer synthesis and transformation, chemical product formulation, membrane manufacturing. Hydrogen laboratory.
- Surface chemistry laboratory.
- Formulation and characterization laboratory for detergents and cosmetic products.
- Organic and inorganic synthesis laboratory.
- Pilot plant for manufacturing hollow fiber membranes.
- Pilot plant for nanofibers by electrospinning.
- Liquid painting cabin and powder coating cabin.
- Polymer transformation equipment, extrusion, injection, and blow molding.
- Formulation and validation laboratory for industrial fluids (lubricity, corrosion, and foaming).
- Formulation laboratory for anticorrosive coatings and metallization.
- Chemical-physicochemical characterization equipment.
- Membrane development laboratory.

2.4. CIRCULAR ECONOMY & DECARBONIZATION (CED)

Innovating for a sustainable future

We provide technological solutions and highly innovative strategies that ensure safe and sustainable production, promoting the transition to the circular economy, bioeconomy, and decarbonization.



ZERO POLLUTION

- + Water treatment and reuse.
- + Recycling and waste recovery.
- + Air/gas treatment.
- + Soil restoration.
- + Nature-based solution.
- + Membrane, physicochemical, and electrochemical processes.

BIOECONOMY AND BIOTECHNOLOGY

- + Bioprocesses and biocatalysis for sustainable production.
- + Microbiome-based solutions.
- + Renewable resources and biorefinery to obtain ingredients and bio-based compounds.
- + Agri-food technologies.

ENERGY TRANSITION AND DECARBONIZATION

- + CO₂ capture, conversion, and utilization.
- + Energy storage systems.
- + Hydrogen and biofuel production.
- + New photovoltaic devices.
- + Bioelectrochemical and photoelectrochemical systems.

SAFETY AND SUSTAINABILITY

- + Sustainable production and new circular business models.
- + Environmental, economic, and social impact.
- + Risk analysis and impact on the environment and human health.



CAPABILITIES

- + H₂ and biofuels laboratory.
- + Energy storage laboratory.
- + Soil quality laboratory.
- + Food laboratory.
- + Biorefinery laboratory.
- + Microbiology and biotechnology laboratory.
- + Ecotoxicity and biodegradability laboratory.
- + Chemical, physicochemical, (bio)-electrochemical, and photochemical characterization equipment.
- + Simulation and modeling software tools.
- + Digital guidance tool for safe and sustainable developments through design.
- + Software and databases for quantifying environmental, economic, and social impacts.
- + Outdoor solar station.
- + Pilot plants for water treatment.
- + Nature-based solutions.
- + Equipment for air treatment.
- + Insect farm.
- + Multidisciplinary team, scientific-technical background, industrial focus

2.5. ADVANCED TECHNOLOGICAL SERVICES (ATS)

Technical Analysis and Validation of Materials and Components

Leitat's ATS department specializes in the characterization, analysis, and validation of materials, parts, and components. With over 30 years of experience and ISO/IEC 17025 accreditation, we offer reliability and tailored solutions to enhance our clients' efficiency and competitiveness, generating economic and sustainable value.

LABORATORY TESTING

- + Our laboratories feature a highly experienced team specialized in testing, characterizing, and analyzing the performance of all types of materials, serving a wide range of industrial sectors.
- + Over the last 10 years, we have conducted more than 80,000 tests and technological services.
- + We are a technology center with extensive, proven experience spanning over 100 years of history, holding certifications and approvals from the leading national and international bodies.
- + We are the leading national benchmark technology center and rank third among Spanish technology centers in terms of private income and turnover, as well as in securing European projects.

LABORATORIES

- + CLIMATIC AGING
- + DIMENSIONAL METROLOGY
- + MICROSCOPY AND COLORIMETRY
- + PHYSICO-MECHANICAL POLYMERS
- + EMISSIONS AND CHEMICAL CHARACTERIZATION
- + TEXTILE TREATMENTS AND FASTNESS
- + PHYSICO-MECHANICAL TEXTILE
- + REACTION TO FIRE
- + MICROBIOLOGY



CAPABILITIES

- + Multidisciplinary technical team. Industrial experience.
- + Customer service.
- + Design of technological services and testing methods. Flexibility and adaptation.
- + Honesty.
- + Equipment and infrastructure for physico-mechanical characterization.
- + Equipment and infrastructure adapted to climate and environmental aging.
- + Equipment and infrastructure for chemical and physicochemical characterization.
- + Equipment and infrastructure for color determination and microscopic observations.
- + Equipment and infrastructure for metrological measurements.
- + Equipment and infrastructure for conducting reaction to fire tests.
- + Equipment and infrastructure for conducting microbiological tests.
- + Access to other laboratories, equipment, and infrastructure (...).
- + Software tools.





3. CERTIFICATIONS AND ACCREDITATIONS

+ TECHNICAL RIGOUR AND GUARANTEED MARKET ACCESS

Leitat is accredited as Notified Body No. 0162 by the European Commission and authorized by the Ministry of Industry, Energy, and Tourism to carry out conformity assessments (CE marking), with a specific scope in Personal Protective Equipment (PPE) under Regulation (EU) 2016/425. This recognition enables us to issue EU type-examination certificates (Module B) and conduct supervised production control (Module C2) for Category II and III PPE.

+ AREAS OF IMPACT



Certification of protective gloves:

mechanical, thermal, chemical, cold, and motorcycling risks.



Certification of protective clothing:

high visibility, thermal and chemical protection, electrostatic risks, and firefighting equipment.



Martial arts protection:

evaluation of body protectors, gloves, helmets, and other elements based on safety and shock absorption criteria.



CE Notified Body:

authorized to issue EU type-examination certificates (Module B, categories II and III) and for supervised production control (Module C2, category III).

With a practical, multi-sector approach aligned with the highest European standards, Leitat serves as a key partner for organizations looking to launch reliable, safe, and PPE that complies with regulatory requirements into the market. Our certification activity not only endorses PPE quality but also reinforces market trust in manufacturers.

4. FEATURED PROJECTS

OASIS: ARTIFICIAL INTELLIGENCE PLATFORM TO IMPROVE OSTEOARTHRITIS DIAGNOSIS AND PROGNOSIS

Multidisciplinary approach for biomarker identification and predictive model development in osteoarthritis

The OASIS project aims to develop an integrative platform based on artificial intelligence to improve the diagnosis and prognosis of patients with osteoarthritis (OA). Coordinated by ECG Médica S.L. (ASCIREs) and CETIR Centre Mèdic, the project includes the participation of Leitat, QREM, the Parc Taulí Research and Innovation Institute (I3PT), and the QUAES Foundation, forming a multidisciplinary consortium that integrates basic research, clinical practice, and advanced data analysis.

The project addresses one of the most prevalent pathologies worldwide, osteoarthritis, which affects millions of people and represents a leading cause of disability. OASIS emerges to address the need for improving current methods of diagnosing and predicting disease progression through the use of advanced data analysis and integration tools.

+ Challenge

Osteoarthritis is a highly prevalent degenerative disease affecting millions of people worldwide, and its incidence continues to rise. Current diagnosis and monitoring methods face limitations in accurately characterizing disease progression and predicting clinical outcomes.

The main challenge of the OASIS project is identifying new biomarkers and integrating clinical, biological, and imaging data to enhance early diagnosis and personalized prognosis capabilities for osteoarthritis patients.

+ Solution

OASIS proposes a comprehensive approach based on the multimodal analysis of biomarkers from blood samples, including proteomic and biochemical data, as well as exosome-derived miRNA and SARC profiles.

These data are integrated with magnetic resonance imaging (MRI) data using artificial intelligence models, with the goal of generating a protein signature and predictive patterns to improve patient stratification and support clinical decision-making. The project combines biomedical research, computational analysis, and artificial intelligence to build a platform capable of generating clinically relevant knowledge.

+ Achieved Results

- + Identification and characterization of biomarker profiles in osteoarthritis patients.
- + Integration of multimodal data (biological, clinical, and imaging) into artificial intelligence models.
- + Development of a knowledge base for the improvement of osteoarthritis diagnosis and prognosis.
- + Generation of new strategies for personalized medicine in osteoarticular pathologies.
- + Advances in understanding the biological heterogeneity of the disease.

+ Impact

OASIS contributes to improving the understanding of osteoarthritis and opens the door to new AI-based diagnostic and prognostic models. The project drives the transition toward more personalized medicine, enabling better patient stratification and optimization of therapeutic strategies.

The combined use of biomarkers and artificial intelligence positions the project's results as a solid foundation for future clinical tools that improve patient quality of life and reduce the healthcare burden of the disease.

The OASIS project has been funded by the State Research Agency within the 2021 call for Public-Private Collaboration Projects (CPP2021-008422).





PIVAX: DEVELOPMENT OF A NEW VACCINE FOR THE PREVENTION OF INFECTIOUS DISEASES IN SWINE

Animal health innovation through the development of a vaccine based on advanced biotechnological approaches

The PIVAX project, coordinated by HIPRA with the participation of Leitat, aimed to develop a new vaccine for the prevention of infectious diseases affecting pig production, contributing to enhanced animal welfare and strengthening the sector's sustainability.

This initiative was framed within a public-private collaboration environment that combines the expertise of a leading animal health company with the scientific-technological capabilities of a research center specialized in applied innovation.

+ Challenge

Infectious diseases continue to represent a major threat to swine production, causing significant economic losses and impacting animal health and welfare. In this context, having effective preventive tools is critical, requiring the development of innovative solutions that enhance protection against these pathogens.

The PIVAX project, completed in December 2025, addressed this challenge by applying advanced biotechnological tools to identify new antigenic targets and develop a new vaccine prototype.

+ Solution

To address the limited availability of effective vaccines against swine pathogens, this project proposed using innovative technologies such as phage display to identify pathogen antigens with vaccine potential. This approach would enable the selection of promising candidates and the design of new vaccines capable of providing protection against multiple strains, thereby overcoming the limitations of existing preventive strategies.

+ Achieved Results

- ✦ Using strategies based on phage display technology and leveraging the immune repertoire of infected animals, pathogen proteins with potential use as antigenic targets for new vaccine development were identified.
- ✦ Several vaccine prototypes were generated, and their in vivo efficacy was evaluated in swine livestock.
- ✦ The protective effect as well as the induced immune response were characterized through comprehensive cellular and humoral response studies.
- ✦ The optimal combination of antigens and the most effective final formulation were determined.

+ Impact

The results of the PIVAX project contributed to the advancement of new prevention tools against relevant infectious diseases in the swine sector. These breakthroughs can help reduce production losses, improve animal health and welfare, and strengthen livestock farm sustainability.

Furthermore, cooperation between the industry and the technology center boosted knowledge transfer and enabled the combination of complementary capabilities in biotechnology, immunology, and vaccine development.

The insights and results obtained during the project form a solid foundation to face future sanitary challenges in the swine sector and continue advancing toward more effective prevention strategies.

The PIVAX project has been funded by the State Research Agency within the 2021 call for Public-Private Collaboration Projects (CPP2021-008589).



RAWMINA: ADVANCED RECOVERY OF CRITICAL RESOURCES FROM MINING WASTE DRIVING THE EUROPEAN CIRCULAR ECONOMY

Technological innovation to transform mining waste into critical and strategic raw materials and reduce European external dependence

The European project **RAWMINA**, coordinated by Leitat and funded by the Horizon 2020 program, has successfully concluded after more than 4 years of research and industrial-scale demonstration. The consortium, comprising leading European organizations, has developed an innovative solution for the recovery of mining waste within a circular economy framework, contributing to the strategic autonomy of the European Union regarding critical raw materials.

The project has validated a scalable industrial pilot system with a Technology Readiness Level (TRL) 7, capable of processing up to 150 kilograms of mining waste per day, transforming environmental liabilities into valuable resources for industrial development.

+ Challenge

The growing demand for critical raw materials in the European Union and the need to reduce import dependency make the development of sustainable resource recovery solutions from mining waste essential.

RAWMINA addresses this challenge by integrating advanced bioleaching, iron separation, and functional nanomaterials technologies for the selective recovery of valuable metals present in complex mining waste.

+ Solution

RAWMINA has developed and validated an innovative pilot system for the recovery of critical resources from mining waste, integrating biotechnological processes and advanced materials. The system includes:

- 1. Conditioning and treatment of mining waste** through optimized bioleaching, resulting in lower energy consumption and waste reduction compared to conventional processes.
- 2. Advanced metal recovery processes** with high extraction efficiencies for critical and/or strategic elements such as iron (Fe), cobalt (Co), germanium (Ge), antimony (Sb), tungsten (W), gold (Au), and silver (Ag).
- 3. Recovery and reuse of process water**, reaching over 90% through electrocoagulation technologies, reducing chemical reagent use and sludge generation.

- 4. Development of nanofibrous composite materials** based on metal-organic frameworks (MOFs) via electrospinning, led by Leitat, for the selective adsorption of cobalt, germanium, antimony, and tungsten.

+ Achieved Results

- + Validation of an industrial-scale pilot system (TRL 7) capable of processing up to 150 kilograms of mining waste per day.
- + Efficient recovery of critical raw materials such as Co (>80%), Fe (99% recovered and 92% transformed into high-value products), W (>90%), Ag, and Au (90% recovered in bioleaching residues).
- + Development of sustainable bioleaching processes with lower energy consumption and reduced environmental impact.
- + Recovery of more than 90% of process water using advanced technologies.
- + Development of MOF-based solutions for the selective recovery of Co, Ge, Sb, and W. Two PCTs have been filed to protect the generated IPR (**PCT/ES2024/070791** and **PCT/ES2024/070792**).
- + Generation of scalable technologies for the recovery of mining waste in Europe.

+ Impact

RAWMINA positions Europe at the forefront of sustainable mining and the circular economy, transforming waste into strategic resources and reducing dependence on critical raw material imports.

The project significantly contributes to the security of supply in the European Union, drives industrial competitiveness, and fosters the transition toward more sustainable and circular production models in the mining sector.

The RAWMINA project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 958252.



PROMISERS: PFAS-FREE POLYMERIC MATERIALS TO DRIVE THE RENEWABLE HYDROGEN TRANSITION IN EUROPE

Innovation in sustainable materials for fuel cells and electrolyzers based on proton exchange membranes (PEM)

The European project PROMISERS, coordinated by Leitat and funded by the Horizon Europe program, aims to develop new materials free of per- and polyfluoroalkyl substances (PFAS) for application in PEMFC fuel cells and PEMEL electrolyzers.

The project involves a European consortium made up of large industrial companies, SMEs, and technology centers. The project is currently at an early stage of development (TRL 2–TRL 4), aiming to progress toward the validation of multi-cell stacks at laboratory scale for renewable hydrogen technologies.

+ Challenge

Hydrogen production technologies using electrolyzers and fuel cells currently depend on PFAS-based materials, which are widely used for their high chemical stability, conductivity, and performance.

However, these compounds pose a significant environmental risk due to their persistence and accumulation in the environment, making it necessary to develop safe, sustainable, and scalable alternatives without compromising technological performance.

PROMISERS addresses this challenge by developing PFAS-free components aligned with safe-by-design and sustainable-by-design principles, ensuring environmental compatibility and industrial scalability.

+ Solution

The project develops multiple disruptive approaches to replace fluorinated materials in PEM technologies, integrating material and processing innovation:

- + Development of ionomers and membranes based on hydrocarbons and cellulose.
- + Formulation of electrode inks and MEAs completely free of PFAS.
- + Fabrication and optimization of single cells for experimental validation.
- + Advanced testing and electrochemical characterization under operating conditions.
- + Validation of laboratory-scale stacks for PEMFC and PEMEL.

These solutions enable progress toward sustainable alternatives while maintaining the required performance in hydrogen applications.

+ Achieved Results

- + Development of PFAS-free components for PEM fuel cells and electrolyzers.
- + Validation of laboratory-scale multi-cell stacks (TRL 4).
- + Improvement of electrochemical performance in PEMFC ($>1.5 \text{ W/cm}^2$ at 0.65 V) and PEMEL (3.0 A/cm^2 at 1.8 V).
- + Reduction of dependence on fluorinated materials in hydrogen technologies.
- + Application of safe-by-design and sustainable-by-design principles in material development.
- + Advancement from fundamental research (TRL 2) toward pre-industrial validation (TRL 4).

+ Impact

PROMISERS drives the transition toward a more sustainable energy system, eliminating the use of PFAS in key technologies for renewable hydrogen production.

The project contributes to reducing the environmental impact associated with persistent substances, improves the safety of hydrogen technologies, and accelerates decarbonization in strategic sectors such as transport, power generation, and energy-intensive industries.

Project PROMISERS with Grant Agreement number 101192151. The project is supported by the Clean Hydrogen Partnership and its members. Funded by the European Union.







4.1. UNIQUE INITIATIVES

At Leitat, we have developed unique initiatives that reflect our commitment to innovation and cutting-edge technologies, promoting collaboration, entrepreneurship, and a more sustainable future.



IAM3DHUB

IAM3DHUB

The IAM3DHUB is a digital innovation hub that promotes the adoption of additive manufacturing in European industry. It offers a comprehensive service to guide companies in incorporating 3D technologies, from opportunity detection to economic strategy, facilitating fast, efficient, and toolless production.



4.2. SPIN-OFFS AND COMPANIES

At Leitat, we invest in the future by creating high-impact biotechnology companies that generate economic, social, and technological value.



GENE VECTOR BARCELONA

Gene Vector, a subsidiary of Leitat, focuses on producing viral vectors for second-generation CAR-T therapies. Created through a technology transfer from Hospital Clínic, it seeks to expand global access to gene therapies and is already authorized by the AEMPS to manufacture and export throughout Europe.



AMIRA THERAPEUTICS

Amira Therapeutics, a Leitat spin-off, develops new treatments against childhood cancer. In collaboration with VHIR, it has created innovative compounds with international protection. Its approach seeks less aggressive and more effective targeted therapies, backed by the MGC Foundation and regulatory recognition in Europe and the USA.



MEDTECH BARCELONA

MedTech Innovation on Advanced Medicine (MedTech Barcelona) is a biotechnology company focused on developing innovative solutions for the healthcare and pharmaceutical sectors. Wholly owned by Leitat, MedTech Barcelona serves as a commercialization platform for the organization's new developments.

5. ACTIVITIES

5.1. PARTICIPATION IN TRADE FAIRS AND CONGRESSES



+ ADVANCED FACTORIES Barcelona - April 8-10

- + Leitat participated in Advanced Factories 2025 as a Global Partner of the leading event in Industry 4.0 and automation, held in Barcelona. During the event, the technology center presented various solutions linked to industrial digitalization, automation, and new production models, displaying prototypes related to medical technologies, robotics, 3D printing, high-precision scanning, or microplastic detection. Additionally, Leitat had a prominent presence in the conference program and received visits from various institutional representatives interested in learning about its technological capabilities and industrial innovation projects.



+ FOOD 4 FUTURE Bilbao - May 13-15

- + Leitat participated in Food4Future 2025, reaffirming its commitment to the technological transformation of the food industry toward more sustainable, safe, and efficient models. During the congress, held at the Bilbao Exhibition Centre, the technology center presented several projects related to personalized nutrition, alternative proteins, functional ingredients, plant-based foods, food safety, and process digitalization. In addition to exhibiting innovative prototypes, Leitat experts participated in various sessions and panel discussions centered on the future of food and new trends in the agri-food sector.



+ LUBRICANT EXPO Düsseldorf, Germany - September 16-18

- + Leitat attended Lubricant Expo Europe 2025, the main European gathering dedicated to industrial lubrication technologies. During the event, the technology center showcased its capabilities in sustainable lubricants, circular economy, green chemistry, and artificial intelligence applied to industrial processes. Furthermore, Leitat researchers took part in different technical sessions and specialized panels, sharing breakthroughs related to new materials, smart monitoring, and sustainable alternatives for industrial lubrication systems.



+ BIOSPAIN

Barcelona - October 7-9

- + Leitat participated in BIOSPAIN 2025, one of the leading international events in biotechnology and life sciences. During the event, held at Fira de Barcelona, the technology center presented various innovative projects related to biotechnology, health, and sustainability, including solutions linked to medical devices, bioprinting, non-invasive monitoring systems, and advanced models for biomedical research. Participation in BIOSPAIN helped strengthen collaboration with companies, entities, and researchers from the international biotechnology ecosystem.



+ COSMETORIUM

Barcelona - October 22-23

- + Leitat participated in Cosmetorium 2025, the leading event for innovation in the cosmetic industry held in Barcelona. During the fair, the technology center presented different developments related to sustainable ingredients, biopolymers, alternatives to microplastics, microencapsulated active ingredients, and new cosmetic evaluation methods. Likewise, Leitat participated in the event's conference program, sharing advances in utilizing by-products to develop bioactive ingredients for more sustainable and innovative dermocosmetic applications.

+ TRADE SHOW IMPACT

+625

Connected
companies

+165

Press
impacts

+160

Sales
leads

+€1.3 M

Pipeline
Generated

5.2. INITIATIVES FOR TALENT DEVELOPMENT AND PEOPLE'S WELL-BEING



+ COMPANY COLLECTIVE AGREEMENT

Leitat has approved its first proprietary collective agreement, agreed upon by 98% of the workforce, marking a milestone in its organizational evolution. The agreement, effective from 2026, adapts the employment framework to the reality of an R&D&i center, leaving behind the textile sector agreement. It reinforces equality, safety, and talent management, and improves the ability to attract and retain professionals, consolidating a more modern, flexible labor model aligned with innovation.



+ LEITATVISION

Leitat launched the first edition of LeitatVision, an internal innovation contest to boost talent and creativity within the organization. The initiative promoted proposals focused on sustainability, competitiveness, and efficiency, fostering cross-departmental collaboration. The winning team received a Leitat Tech certificate, a €15,000 voucher for training, and the opportunity to implement their project, which focused on the detection and removal of PFAS in water.



+ TRAINING PLAN

During 2025, Leitat promoted an extensive Training Plan aimed at the professional and personal development of the team. The program combined transversal actions in skills, leadership, and interpersonal abilities with specific technical training by area. As a novelty, it incorporated health and well-being initiatives such as mindfulness, stress management, effective communication, and healthy habits, reinforcing comprehensive well-being and organizational culture.





+ BCN RESEARCH & TECH GAMES

More than 50 professionals from Leitat participated in the first edition of the BCN Research & Tech Games, an initiative to foster teamwork and collaboration among technology centers. Through sporting, recreational, and solidarity activities, the team achieved third place in the general classification. The initiative also included a solidarity aspect alongside MUA Solidaris to support childhood leukemia research at Hospital Sant Joan de Déu, reinforcing the center's social commitment.

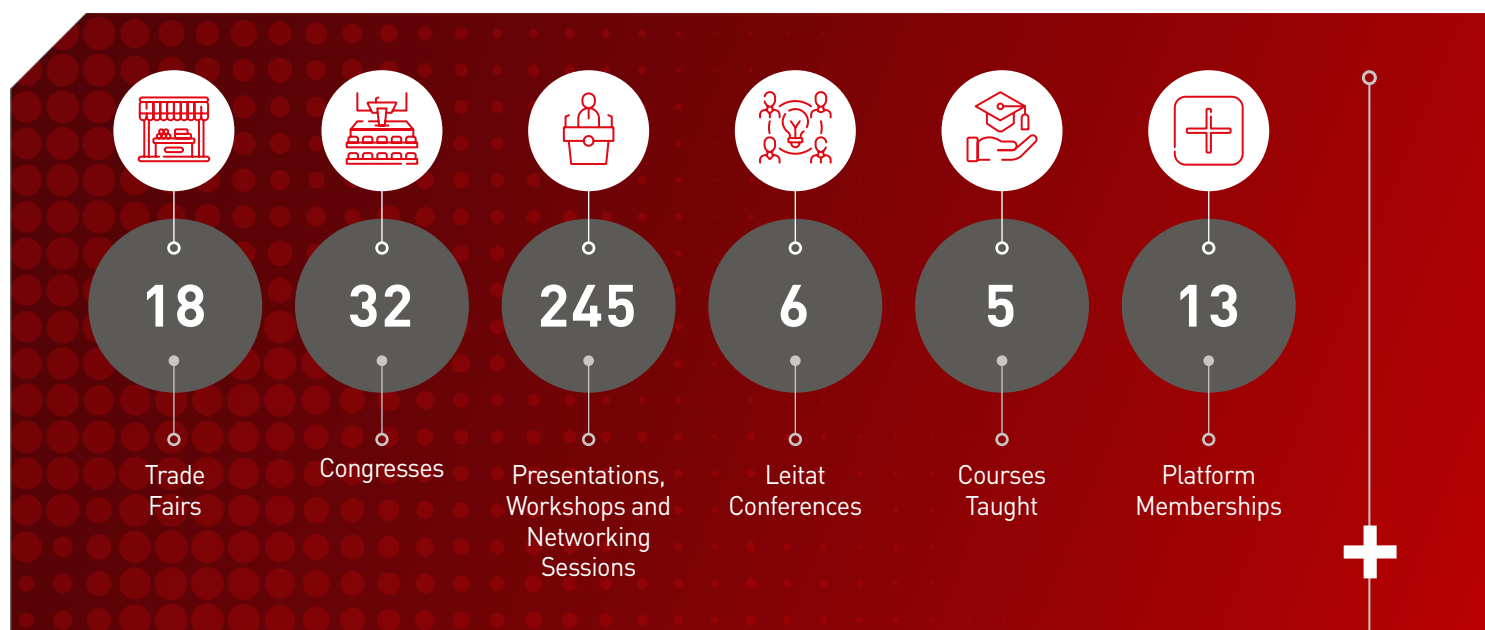


+ NEW ONBOARDING PLAN

With the aim of facilitating the integration of new hires, Leitat implemented a new Onboarding Plan designed to improve the onboarding experience and support during the first months in the organization. The program includes regular corporate sessions with the participation of the Steering Committee, personalized follow-up actions, and tools to convey the entity's culture, values, and way of working.

5.3. FEATURED ACTIVITY SUMMARY

In the year 2025, Leitat has participated in:



Annual Report 2025

LEiTAT
managing technologies

120 YEARS
1906-2026