



UNIVERSITAT
POLITÈCNICA
DE VALÈNCIA

Automatics and Industrial Informatics Research Institute (AI2)

<https://www.ai2.upv.es/> @institutoai2



HR EXCELLENCE IN RESEARCH

Director: Ramón Blasco-Giménez

Contact: rblasco@upv.es



RESEARCH AREAS

- Process Control
- Computer Graphics and Multimedia
- Industrial Informatics
- Robotics
- Computer Vision

FACILITIES

- Lab for automation of Food Industry
- Synthetic Biology Lab
- Renewable Energy Lab
- Industry 4.0 Laboratory
- Technodiabetes Lab
- Testea Paddle Lab
- MEDERI Living Lab
- Smart Industry Lab

MASTER-PHD PROGRAMS

- Master's Degree in Automation and Industrial Computing



MAIN RESEARCH LINES

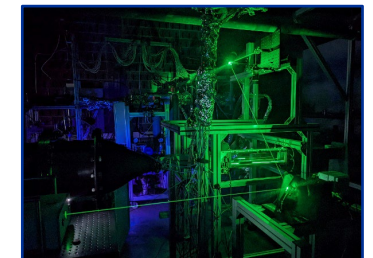
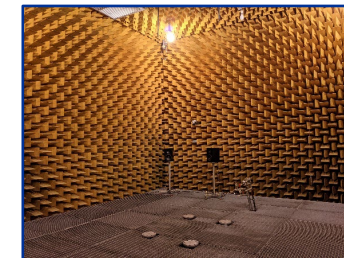
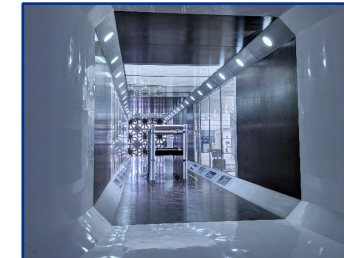
- Power plant hybridization. Control strategies and optimization
- xEVs thermal issues, thermal management
- Battery thermal runaway
- xEVs acoustic issues
- Fuel cell power plants
- Continuous combustion process (GT)
- Hydrogen combustion: continuous/discontinuous
- e-fuels, oxy-fuels, and ammonia combustion process
- CO2 neutral oxy-fuel combustion
- Aerodynamics (Internal /External)
- Predictive maintenance optimization applying AI
- Control of energy systems
- Injection systems and sprays

FACILITIES

- Aerodynamic Research Service (SIA) - Wind Tunnel
- Advanced Hydrogen Engine Test Benches
- Anechoic Chamber
- Battery Laboratory
- Multifunctional altitude simulator - MEDAS

MASTER-PHD PROGRAMS

- Professional Master: Master in Maintenance Engineering
- Scientific Master: Master in Propulsive Systems for a Sustainable Mobility
- Doctorate Programme: Propulsive Systems in Transportation



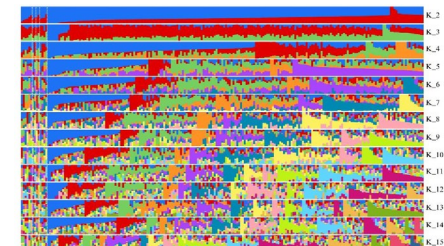


RESEARCH LINES/CAPABILITIES/FACILITIES

- Seedbank & agrodiversity conservation
- Plant Breeding
- Plant Biotechnology
- Breeding for resilience
- Quality breeding
- Low input farming
- Phenomics
- Genetics and Genomics
- Organic farming
- Agricultural robotics
- Food safety
- Climate change mitigation

MASTER-PHD PROGRAMS

- Master's Degree in Plant Genetic Improvement
- Erasmus Mundus MSc in Plant Breeding (emPLANT+)





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Food Engineering Research Institute (FoodUPV)

www.foodupv.webs.upv.es / @foodupv (LinkedIn/X)

Director: María Vargas Colas (mavarco@tal.upv.es)

Contact: foodupv@upv.es



HR EXCELLENCE IN RESEARCH



RESEARCH LINES

- **Food processing:**
Precision fermentation, 3D food printing, drying processes, antimicrobial systems, extrusion, biopreservation, non-thermal technologies, winemaking
- **Product development:**
Consumer preferences, oil structuring, food microstructure, functional foods
- **Food safety and Quality control:**
Honey & beehive studies, LCA, winemaking monitoring, photonic technology for process control, ultrasound for the non-destructive analysis
- **Food packaging:**
Valorisation of food waste for biodegradable and active packaging materials
- **Nutrition and health:**
Precision nutrition, toxicology model systems, food digestion, ITCs tools
- **Valorisation of by-products:**
Food waste and traditional foods valorisation for new ingredients obtention

MASTER-PHD PROGRAMS

- Doctoral Program in Food Science, Technology and Management
- Master's Degree in Food Science and Engineering
- Master's Degree in Food Safety and Quality Management



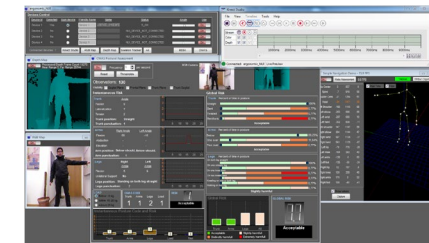


RESEARCH LINES/CAPABILITIES

- Artificial intelligence to transform health, society, agriculture, and industry
- Pioneers in AI and Extended Reality to enhance human cognition
- Advancing brain recovery through technology and multidisciplinary research
- We evaluate how architectural and urban space influences people by analyzing their psychological, neurophysiological and behavioral response
- Technology applied to the improvement of Occupational Health
- Smart Technologies for the Design and Development of Human Capabilities

FACILITIES

- High-performance computing infrastructure
- Electroencephalography, eye tracking, GSR, capture, motion tracking, Electromyography,
- 3D cave, videowall, HMD, TDCs.





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Plant Molecular and Cellular Biology Joint Research Institute (IBMCP) <https://ibmcp.upv.es>, @ibmcp.bsky.social, x.com/IBMCP, linkedin

Director: Pablo Vera (vera@ibmcp.upv.es)



HR EXCELLENCE IN RESEARCH



IBMCP's main activity is **cutting-edge, high-quality scientific research** aimed at generating knowledge about the key processes of plant growth and development and their capacity to adapt to the environment, with the ultimate goal of obtaining more productive and higher-quality crops.

RESEARCH DEPARTMENTS

- Plant Development and Hormone Action
- Biotechnology and Plant Breeding of Cultivated Species
- Plant Stress Biology

LEADING EDGE SCIENTIFIC FACILITIES

7000 m² labs and core research services (Metabolomics, Microscopy, Cell Culture, DNA sequencing and Bioinformatics) + 4150 m² greenhouses and growth chambers.

MASTER-PhD PROGRAMS

- Master's Degree in Plant Molecular and Cellular Biotechnology



ibmcp
Instituto de Biología Molecular
y Celular de Plantas



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Institute of Concrete Science and Technology (ICITECH)

<https://icitech.webs.upv.es/>

Director: José R. Martí Vargas (direccion@icitech.upv.es)

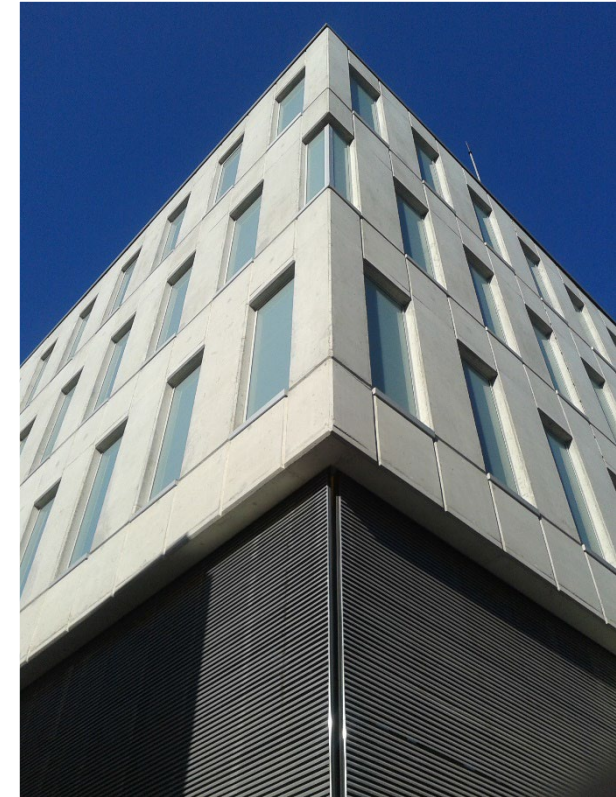


HR EXCELLENCE IN RESEARCH



RESEARCH LINES/CAPABILITIES/FACILITIES

- Concrete science and technology
 - Structural systems
 - Construction technologies and procedures
 - Experimentation in structural and construction engineering
 - Construction and building materials chemistry
 - Optimization and life cycle assessment
 - Sustainability and durability
 - Monitoring, maintenance and pathology
 - Structural safety
 - New materials
 - Industrialization, prefabrication and modular construction
 - Resistance to fire and extraordinary events
-
- 32x15 m² strong floor / 14 m high 3D reaction wall
 - Centralized hydraulic system / Actuators from 10 to 5000 kN





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Institute of Animal Science & Technology (ICTA)

<https://icta.webs.upv.es>

Director: Juan José Pascual Amorós

Contact: jupascu@dca.upv.es



HR EXCELLENCE IN RESEARCH



RESEARCH LINES/CAPABILITIES:

- Aquaculture and biodiversity
- Animal nutrition
- Animal genetics
- Animal production systems and technologies

FACILITIES:

- Pilot plants
- Farms
- Laboratories

MASTER-PHD PROGRAMS:

- Master in Precision Livestock Farming
- Master in Aquaculture
- Master in Animal Genetics and Biotechnology of Reproduction
- Master's Degree in Laboratory Animal Science
- Master's Degree in Agricultural Engineering
- Master's Degree in Forest Engineering
- Doctorate programme in Animal Science and Technology



Director: Manuel Pulido Velázquez (mapuve@upv.es)

Contact: info@iiama.upv.es

RESEARCH LINES/CAPABILITIES

- Microbian Biodiversity of the Water Cycle (BIOMICA)
- Water Quality (CALAGUA)
- Forestry Science and Technology (REFOREST)
- Environmental Impact Assessment (GEASE)
- Hydraulics and Hydrology (HH)
- Hydrogeology (HG)
- Water Resource Engineering (GIRH)
- Hydrological and Environmental Modelling (GIMHA)
- Hydroeconomic Modelling (GIMHE)
- Hydraulic Networks and Pressure Systems (REDHISP)
- Nature-based Solutions research (SbN)
- Land and Atmosphere Remote Sensing (LARS)

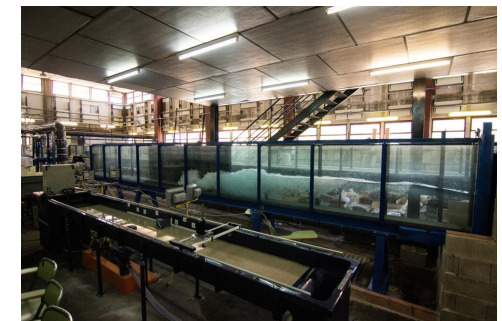


FACILITIES

- The IIAMA buildings occupy over 4350 m2, including four fully equipped research laboratories, offices and computer rooms.
- The Environmental Technologies and Environmental Impact Laboratories
- The River Engineering, Hydraulics and Hydraulic Works Laboratory
- Edaphology Laboratory
- The Water Microbiology Laboratory
- The Water Quality Laboratory
- The Ecology laboratory

MASTER-PHD PROGRAMS

- Program of Doctorate of Engineering of the Water and Environmental (PDIAM)
- Master of Science on Environment Engineering (MIA)
- Master of Science in Hydraulic Engineering and Environment (MIHMA)





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Interuniversity Research Institute for Molecular Recognition and Technological Development (IDM) <http://www.uv.es/idm>

Director: Ramón Martínez Máñez (rmaez@qim.upv.es)

Contact: idm@upv.es



HR EXCELLENCE IN RESEARCH



RESEARCH LINES/CAPABILITIES/FACILITIES

- Nanomaterials and sensors
- Biosensors and immunosensors
- Agrochemistry
- Controlled Drug delivery systems
- Nanomedicine
- Electronic development and printed sensors
- Concrete research and monitoring
- Energy efficiency and renewable energy
- Disease mechanisms
- Liquid Biopsy
- Pharmacometric studies

MASTER-PHD PROGRAMS

- Master's Degree in Biomedical Biotechnology
- Master's Degree in Mechatronics Engineering
- Master's Degree in Chemical Engineering
- Master's Degree in Biomedical Engineering
- PhD in Chemistry
- PhD in Experimental Techniques in Chemistry
- PhD in Biotechnology
- PhD in Electronic Engineering





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Institute for Energy Engineering (IIE)

<https://iie.webs.upv.es/>

Linkedin

Director: José María González Maciá

Contact: energeti@upvnet.upv.es



HR EXCELLENCE IN RESEARCH



RESEARCH LINES/CAPABILITIES/FACILITIES

- Renewables & Advanced Energy Systems
- Thermo-Hydraulics & Nuclear
- Renewable Thermal
- Electricity Systems & Markets
- Electric Equipment & Systems

MASTER-PHD PROGRAMS

- Master Studies on Energy Engineering
- Doctoral Studies on Energy





RESEARCH LINES

- **Matrix analysis.** Applications to control systems in engineering, epidemiology, etc
- **Mathematical modeling** of civil infrastructures
- **Design** of iterative and quantum methods for solving nonlinear equations
- **Modeling** in genetics and medicine
- **Numerical methods** for solving PDEs in Finance and computing premiums of derivatives
- **High-performance computing.** Optimal evaluation of matrix functions
- **Relativistic physics**
- **Differential equations** with uncertainties and modelling of real-world problems
- **Numerical and AI methods** for nuclear reactor simulation
- **General systems theory:** models of human behaviour
- **Numerical methods** for the geometric integration of ODEs and PDEs
- **Mathematical methods** for Astrophysics problems
- **Complex networks.** Graphs
- **Mathematical modeling** of fluid systems with AI



AMATA	CIVIL	DAMRES
MEDICINA	IMM	FINANZAS
HIPERSC	MUNQU	NUCLEAR

**Research
groups
at IMM**



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Institute of Heritage Restoration (IRP)

<https://irp.webs.upv.es/>

Director: Victoria Vivancos Ramón

Contact: vvivanco@upv.edu.es



CULTURAL HERITAGE RESEARCH AND TREATMENT:

ARTISTIC HERITAGE:

- Study, analysis and diagnosis of pathologies.
- Comprehensive conservation treatments.
- Technical consulting and project management.
- Preventive conservation analysis and design.
- Consulting on ethical guidelines in conservation and restoration treatment.

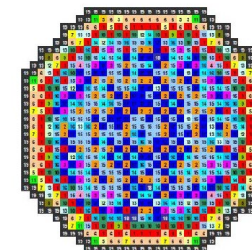
BUILDINGS AND ARCHITECTURAL HERITAGE:

- Preliminary studies: historic studies, cross-sectional analysis, analysis of materials and techniques, analysis of material pathologies, structural analysis, etc
- Technical consulting and support: project planning and management.
- Economic, social and technical sustainable planning.
- Cataloguing of heritage property and sites.
- Special conservation planning.



RESEARCH LINES

- Neutronics and nuclear safety
- Radiological protection in radioactive and nuclear facilities
- Quality control, evaluation and improvement for radiological treatments and equipments
- Radiotherapy Planning System development
- Study of environmental radiation. Radon and its descendants.
- Membrane processes applied to water and wastewater for valuable compounds recovery and water reuse.
- Characterization and separation of microplastics and elimination of other emergent compounds.
- Ecoprocesses: Production and application of natural coagulants, natural circulation evaporators and fabrication of sustainable membranes.
- Recovery of valuable and critical metals from electronic wastes and used batteries by electrochemical processes.
- Removal of emerging pollutants by electrochemical and photoelectrochemical advanced oxidation processes.
- Development of electrode materials for water electrolysis and redox flow batteries.



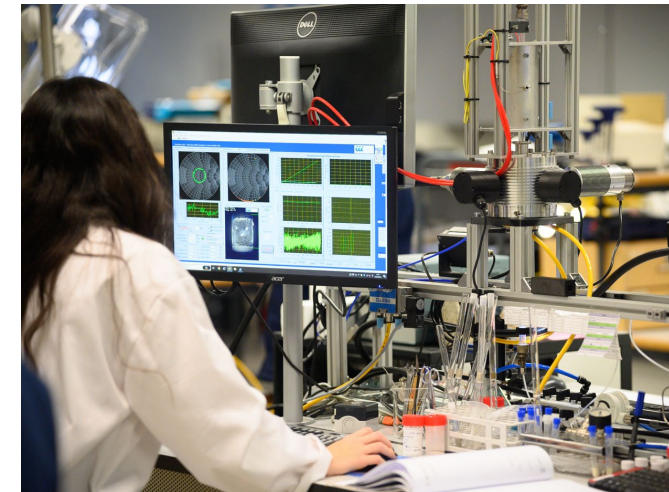
Director: María Salud Guillem Sánchez (mguisan@itaca.upv.es)

Contact: itaca@itaca.upv.es



RESEARCH LINES/CAPABILITIES

- Data Science and Artificial Intelligence
- Internet of Things
- Process Mining
- Systems Reliability & Cybersecurity
- Microwaves, Radiofrequency & Electronics
- Green Energy and Intelligent Energy Networks
- ICTs for Climate Change, Circular Economy & Bioeconomy
- Smart Transport & Green Aviation
- Cardiovascular Research
- Connected Health
- ICTs for Clinical Decision-making
- Medical Image Processing
- Medical Instrumentation
- Eco-efficient Microwave Processing
- Sensors and Networks



Director: Eva Antonino Daviu

Contact: evanda@upvnet.upv.es

MAIN RESEARCH LINES

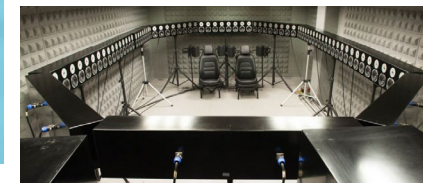
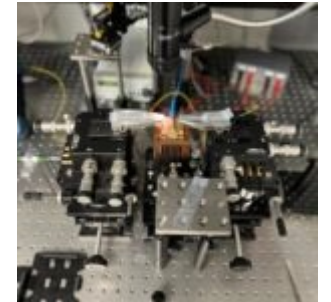
- Photonics, optics and quantum optics
- 5G/6G networks, mobile communication systems, Broadcast, WiFi
- Immersive communications multimedia technologies
- Antenna and microwave design and characterization
- Space communications systems.
- Propagation and channel modelling
- Signal processing
- Digital systems
- Audio, image, and biomedical signal processing
- IP-based multimedia platforms and services

MAIN FACILITIES

- Photonics Facilities
 - Photonic Lab
 - UPVfab: 500m2 ISO-7 (class 10.000) clean rooms
- Mobile Communications Labs
 - 5G/B5G/6G Technologies Lab
 - Immersive communications Lab
 - Wireless Body Communications Lab
- Antennas and Propagation Lab with an Anechoic chamber and prototyping lab
- Applied Microwaves Lab
 - Laboratory of High-Frequency Circuits (LCAF) with two ISO-certified cleanrooms (ISO 7 Class 10,000 and ISO 6 Class 1,000)
 - European High-Power RF Space Laboratory
- Signal And Data Processing Labs

MASTER-PHD PROGRAMS

- MsC in Telecommunication Engineering
- MsC in Communication Technologies, Systems and Networks
- MsC in Quantum Information and Photonics
- MsC in Integrated Photonics
- PhD in Telecommunications
- PhD in Integrated Photonics





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Institute of Chemical Technology (ITQ)

<https://itq.upv-csic.es/>

Director: Jose Manuel Serra

Contact: jmserra@itq.upv.es



RESEARCH LINES/

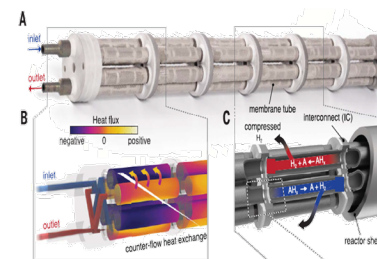
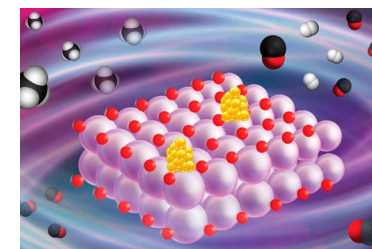
- Catalysis for sustainable chemical processes. Photo- and electrochemistry
- Renewable fuels and chemicals, and green H₂ development
- Surface science and adsorption studies. Zeolites and microporous materials
- Functional materials for energy transformation and storage
- CO₂ and biomass valorisation, waste upcycling, and biorefineries
- Environmental remediation and pollutant removal
- Process intensification, modelling, and engineering scale-up

CAPABILITIES/FACILITIES

- Materials synthesis and device fabrication facilities
- Advanced materials characterization suites, including in-situ testing
- Catalytic reactors for a wide range of chemical processes, scales, and operation conditions, including photo- and electrochemical reactors
- Pilot plant testing and scale-up
- Strong industry collaboration, technology transfer, and innovation

MASTER-PHD PROGRAMS

- Master in sustainable chemistry
- Expert course on industrial decarbonization and energy process optimization
- Doctorate program in sustainable chemistry





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Research Institute for Materials Technology (IUITM)

<https://itm.webs.upv.es/>

Director: Dr. Juan López Martínez

Contact: jlopezm@mcm.upv.es



HR EXCELLENCE IN RESEARCH

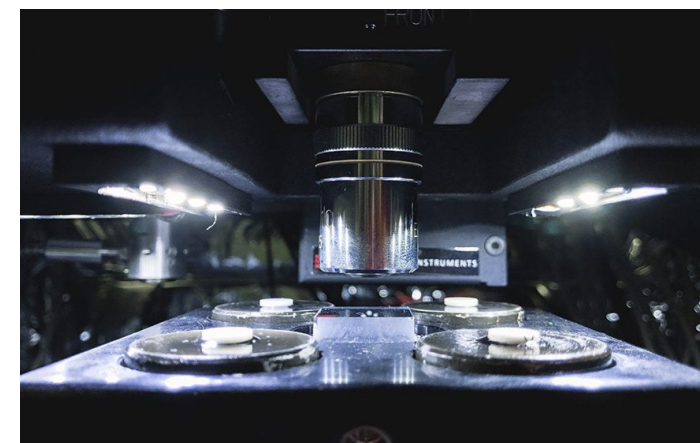
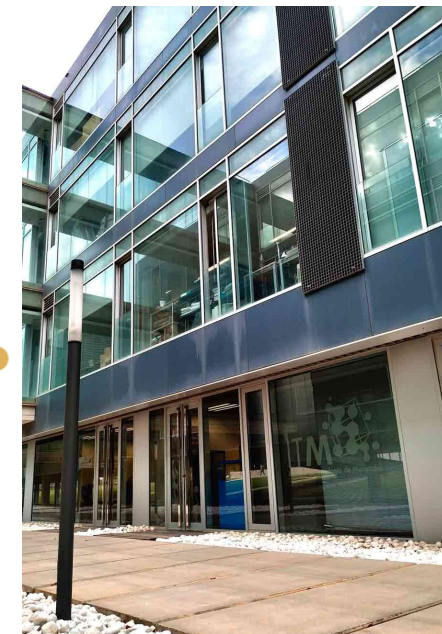


RESEARCH LINES/CAPABILITIES/FACILITIES

- Advanced recycling processes for polymeric materials
- Use of natural by-products to obtain biodegradable plastics
- Development of meta alloys for biomedical applications
- Sintering of ceramic materials with advanced properties
- Powder metallurgy processes
- Advanced Two-Dimensional Nanomaterials
- Prototyping & Functional Polymeric Materials in the industrial and biomedical sector.

MASTER-PHD PROGRAMS

- Master's Degree in Materials Engineering, Science Processing, and Characterisation (<https://www.upv.es/estudios/master/muipcm/>)



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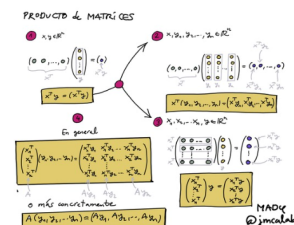


RESEARCH LINES/CAPABILITIES/FACILITIES. 💡

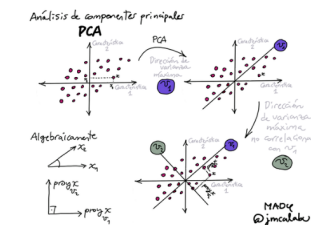
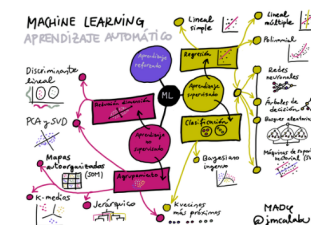
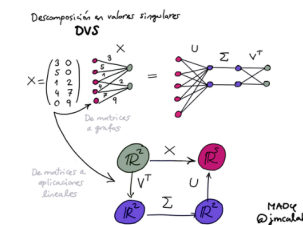
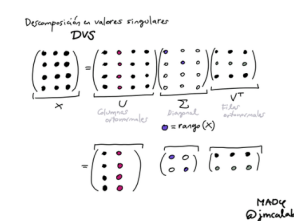
- **Pure Mathematics**
Algebra, Mathematical Analysis, Geometry, Topology
- **Applied Mathematics**
Fundamentals, Biology, Social and Health Sciences
Physics, Machine Learning, Artificial Intelligence

MASTER-PHD PROGRAMS 📖

- **Master InvestMat (MUIMA)**
<https://www.upv.es/estudios/master/muima/>
- **PhD in Mathematics (UPV-UV)**
<https://www.upv.es/entidades/edoctorado/en/doctorate-program-in-mathematics/>



Instituto Universitario
de Matemática
Pura y Aplicada





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Nanophotonics Technology Center (NTC)

www.ntc.upv.es / @upvntc

Director: Roberto Llorente Sáez.

Contact: rllorent@ntc.upv.es



HR EXCELLENCE IN RESEARCH

RESEARCH LINES

- PHOTONIC INTEGRATED DEVICES
- PHOTONIC INTEGRATED SYSTEMS AND APPLICATIONS
- OPTICAL NETWORKS AND TELECOMMUNICATION SYSTEMS
- PLASMONICS, OPTOMECHANICS AND CHIRAL PHOTONICS
- BIOPHOTONICS
- PHOTONIC TECHNOLOGIES FOR APPLIED ANALYTICS
- THz PHOTONICS AND OPTICAL SIGNAL PROCESSING
- ARTIFICIAL MATERIALS AND METASURFACES
- III-V SEMICONDUCTORS AND GRAPHENE
- NOVEL NANOMATERIALS
- PHOTOVOLTAICS

FACILITIES

- 3800 m² building including a 500 m² clean room (class 10-100-10.000)
- 6 / 8-inch 'one of kind' state-of-the-art CMOS-photonics FAB.
- Silicon photonics prototyping and full fabrication cycle, including back-end services (packaging)
- Appointed as *Infraestructura Científica y Técnica Singular* (ICTS)





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Valencian Research Institute for Artificial Intelligence (VRAIN)

vrain.upv.es/ <https://es.linkedin.com/company/vrain/> https://www.youtube.com/channel/UC4P_TQ00CT_V0opre1_o9Mg



Director: Vicent Botti (vbotti@vrain.upv.es)

Contact: vrain@upv.es



RESEARCH LINES/CAPABILITIES/FACILITIES

- Natural Language Processing
- Planning and Reasoning
- Software analysis, verification and testing
- Machine Learning and Deep Learning
- Computational Logic and Automated Reasoning
- Intelligent Agents/Multiagent Systems and Human Centered AI
- AI, Privacy and Security
- AI in Health Sciences
- Natural Computing
- Genome Data Science
- Genomic Information Systems
- Responsible AI
- AI Evaluation
- Generative AI and Agentic AI

MASTER-PHD PROGRAMS

- Master's Degree in Artificial Intelligence, Pattern Recognition and Digital Imaging
- Master's Degree in Software Engineering, Formal Methods and Information Systems
- Master's Degree in Biomedical Engineering
- Master's Degree in Cloud Computing and High Performance



160 staff members*:

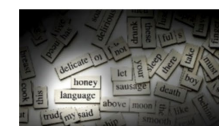
- 80 Lecturers and researchers
- 22 Full time researchers
- 30 Early Stage Researchers
- 28 Technical Staff

* 90 doctors & 16 Full professors

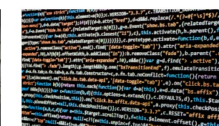
Research Groups



Automata, Formal Languages and its Applications (ALFA)



Language Engineering and Pattern Recognition (ELIRP)



Extensions of Logic Programming (ELP)



Software Production Methods (PROS)



Machine Learning and Language Processing (MLLP)



Information Technology and Artificial Intelligence (GTI-IA)



Multi-paradigm Software Technology (MIST)



Interactive Technologies Lab (VertexLit)