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INDUSTRY

Meet the Tecniospring fellows

List of all the researchers that participated in Tecniospring INDUSTRY by sector

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Tecniospring Researchers

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 801342.

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CHEMISTRY, ENERGY AND RESOURCES

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Alfredo Abelardo González Fernández

i-ELPHOS: Integrated Electrophotonic Sensor (call 2019)

Host institution: GTQ (CSIC)

Biofouling and film growth in water supplies is a major problem. Alfredo has developed i-ELPHOS, a fully integrated electrophotonic sensor based on the monolithic integration of light emitters, planar waveguides, photodetectors, and electronics. The idea is to have a true cost-effective lab-on-a-chip allowing mass production and high yields at low costs.

Website | LinkedIn

Juan Carlos González Rosillo

Solid state u-batteries as miniature energy source (call 2019)

Host institution: IREC (CERCA)

The deployment of the Internet of Things (IoT) depends on the integration of over a trillion autonomous sensors in the next decade with miniaturized power sources. Juan-Carlos prototyped an All-Solid-State thin film microbattery based on biocompatible, inexpensive and abundant materials on Si chips, through a Large-Area Pulsed Laser Deposition (LA-PLD) process transferable to industry.

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Joshua David Eichman

Re-envisioning the potential of energy communities (call 2019)

Host institution: IREC (CERCA)

By empowering consumers, energy communities have the potential to enable access to environmental, economic and social benefits previously not possible. Joshua has proposed novel strategies for energy market design, as well as a hardware/software solution to explore them with the goal of reducing costs, improving efficiency and providing grid services.

Website | LinkedIn

June-Seok Choi

Development of solar thermal FO-MD-MCr system (call 2019)

Host institution: EURECAT

The demand for desalination processes is growing rapidly as a consequence of water shortage caused by climate change. However, the conventional process has a high energy consumption and technical limitations. June-Seok has developed a new concept of low-energy and low-cost seawater desalination processes combining membrane processes and solar energy.

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Murat Gunes

Microfluidic electrochemical sensor instrument (call 2019)

Host institution: GTQ (CSIC)

Pollutants are currently of great concern in surface waters. This is why Murat has been working on the development of an online monitoring system, an affordable compact and low-power analytical instrument, that can be readily applied to the decentralised measurement of contaminants in surface waters.

Website | LinkedIn

Joan Atcher Ubiergo

SMARTSCALE - Optimization of the scale-up synthesis of SMART UV filters (call 2020)

Host institution: ROKA FURADADA S.L.

Sunscreens should be as effective as possible while at the same time not being harmful for the environment nor the skin. This is what Joan is developing on an industrial scale: efficient, cost-effective UV filters, with greater absorption capabilities (UVA and UVB) and an encapsulation that makes them more stable and prevents their release to the skin or the ecosystem.

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Brian Jiménez García

IDEA-PS - Inhibition of Detergent Enzymes Advanced Prediction Software (call 2020)

Host institution: ZYMVOL BIOMODELING S.L.

IDEA-PS responds to the need of chemical and food industries to maximise the efficiency of their products while limiting their impact on the environment. Brian is developing a new computational platform that allows the identification of enzyme inhibitors and predict protein interactions in detergent formulations to save resources, energy and water and limits contamination.

Website | LinkedIn

Paulina R. Martínez-Alanis

Electrochemical Valorisation of Wine Industry Byproducts (call 2020)

Host institution: IREC (CERCA)

To realise the full potential of biomass as a net-zero source of commodity chemicals and fuels, proper biorefinery processes must be improved. Paulina is developing electrochemical processes for the valorisation of biomass residues in the wine industry which could be extended to others such as agriculture, food and forestry.

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Rémi Pétuya

In Silico Discovery of Biodegradable Inhibitors (call 2020)

Host institution: Bytelab Solutions S.L.

The oil and gas industry relies heavily on chemical additives like hydrate anti-agglomerants and asphaltene inhibitors to prevent pipeline and reservoir blockage. Rémi is working on innovative and transferable molecular screening workflows that combine simulation and data-driven (machine learning) approaches to discover alternative additives, implementing solid simulation protocols for this problematic.

Website | LinkedIn

Romina Mariel Gargarello

BIMESOIL - Biologically mediated processes for decontamination of soils affected by industrial metallic wastes (call 2020)

Host institution: EURECAT

In order to decontaminate soils affected by industrial metallic waste and improve the leaching or stabilisation processes of metals like lead, arsenic mercury or cadmium, Romina develops a tailor-made in situ biological treatment design using native microorganisms.

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Ana Carolina López De Dicastillo

DEMEANOUR - Development of new wide spectrum, highly effective and durable antimicrobial surfaces (call 2020)

Host institution: ONYRIQ LABS S.L.

Disposing of antimicrobial materials and surfaces effective on corona protected viral species and resistant bacterial strains is of great interest these days. This is why Ana Carolina has developed an antimicrobial platform applicable to different substrates, covalently bonded to avoid migration and pollutant spreading, further enhancing efficiency and durability.

[Website](#) | [LinkedIn](#)

Nicholus Bhattacharjee

ENZIMMO-P - Software development for biocatalytic process optimisation (call 2021)

Host institution: ZYMVOL BIOMODELING S.L.

Enzyme immobilisation is key for many industrial applications, especially peroxygenases which are highly demanded enzymes for their ability to catalyse oxyfunctionalisation without the need of cofactors or protein partners. Nicholus is developing a software for computationally guiding enzyme immobilisation and will apply it to peroxygenase.

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Neffer Gómez Gómez

Adapting and up-scaling nanoimprint lithography to produce radiative cooling films at industrial scale (call 2021)

Host institution: Cooling Photonics S.L.

Conventional active cooling technologies account for about 15% of global energy consumption and 10% of greenhouse gas emissions. An alternative passive solution with no energy consumption and zero emissions is a microfilm based on terrestrial and aerospace photovoltaics and air water harvesting, and Neffer is currently contributing to its development.

Website | LinkedIn

Dana Cecilia Bernhardt

Prototype of Innovative High Barrier Home Compostable Film from Diverse Renewable Sources for Food Packaging Applications (call 2021)

Host institution: Food Sourcing Specialists

The food industry is looking for new low footprint materials that can offer a product shelf-life closer to conventional fossil-based plastics. Dana is developing an innovative plant-based polymeric film with high water vapour and oxygen barriers, food-packaging application, capable of containing active compounds (antioxidants and antimicrobials), controlling their release into the product and preserving their nutritional and organoleptic qualities.

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Andrés Alberto García Blanco

POLITE - Development of Prototypes for POwer-to-Liquid Technologies (call 2021)

Host institution: IREC (CERCA)

Synfuels using electrochemical CO2 reduction reaction are expected to play a key role for decarbonizing the EU energy system. Andrés is developing 2 laboratory-scale prototypes, a multistack electrolyser able to attain high CO2 conversion values and a Fischer-Tropsch synthesis reactor, that will be integrated in a combined two-step process to produce it.

[Website](#) | [LinkedIn](#)

Ignacio Becerril Romero

MALMO - New machine learning process monitoring methodologies based on spectroscopic techniques for in-line inspection of thin film PV industrial manufacturing processes (call 2021)

Host institution: IREC (CERCA) (ES) & Sunplugged GmbH (DE)

Small deviations in the production of thin film photovoltaic devices result in manufacturing defects and a waste of high-value materials, energy and time. This can be minimized through the early detection of production deviations employing process monitoring. Ignacio is developing advanced methodologies based on machine learning for process monitoring in the thin film photovoltaic industry using a XRF-Raman-Photoluminescence roll-to-roll industrial characterisation platform.

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Carolina Madeira

Modelling and estimation of flexibility potential of thermal loads in buildings and communities (call 2021)

Host institution: EXIT (UDG)

Demand-side management (DSM) in form of flexibility - i.e. shifting energy demand in time – has been considered one of the most cost-effective solutions for increasing renewable energy share in the energy systems. Carolina is shedding light on the DSM potential of thermal loads in buildings and communities and transferring the technology to relevant partners in the market.

Website

María Pin Nó

Valorisation of Lignin through transformation into SMART UV filters (call 2021)

Host institution: ROKA FURADADA S.L.

Sunscreens are key players for photoprotection and skin cancer prevention; unfortunately their manufacturing is not sustainable as they are commonly produced from petrochemicals. María is developing innovative biodegradable UV absorbers based on a renewable material: lignin.

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Mortaza Gholizadeh

New green, cheap and highly efficient zeolite-based catalysts to increase performance and sustainability of catalytic pyrolysis of waste (call 2021)

Host institution: EURECAT

Catalytic pyrolysis is being considered as an attractive management strategy for municipal waste. Even so, an efficient catalyst has not been proposed clearly for this process to scale-up catalytic pyrolysis. Mortaza is developing a novel, cheap and efficient zeolite-based catalyst to convert municipal waste into useful products.

Website | LinkedIn

María Isabel Díez García

Solar hydrogen production by a scalable electrolyser-photovoltaic system (call 2021)

Host institution: IREC (CERCA)

Hydrogen production technologies are key for the energy transition towards zero carbon emissions. This is why María Isabel is developing an electrolyser connected to an advanced solar cells arrangement that produces hydrogen using inexpensive, non-toxic materials based on Earth-abundant elements.

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INDUSTRY

Roberta Carafa

WATERSCAN - WATER pollution warning System Combining bioAssays on passive sampling extracts and real time mixture toxicity detectioN (call 2021)

Host institutions: AECOM Spain S.L.U (ES) & Joint Research Centre - European Commission (IT)

Water pollution is still a main cause of water quality deterioration, but the traditional monitoring based on samples is not economically affordable. Roberta is bringing to the market a patented biofilm-based sensor that provides detection of mixture toxicity in water, real time measures and good sensitivity, and is testing a panel of standard bioassays exposed to environmental toxic mixtures.

Website | LinkedIn

Dimitrios Skoulas

Composite Materials made from Biobased Limonene Originating Polycarbonates (call 2021)

Host institutions: ICIQ (CERCA) (ES) & Universität Potsdam (DE)

Polymer composites are lightweight, load-bearing materials that can be used for strength-requiring applications (e.g. automotive industry, construction, etc.). However, examples of such composites derived from bio-renewable sources are scarce. Dimitrios is developing a novel bio-based material based on limonene oxide, a plant bio-based monomer that is sourced from waste (orange peels from the juice industry) and carbon dioxide.

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Karen Strehlow

VolCBond - A volcanic catastrophe bond for the Caribbean (call 2021)

Host institution: Mitiga Solutions S.L.

Volcanic eruptions are a cause for significant loss of economic value and human lives and affect developing countries in particular. Karen is developing Catastrophe (Cat) Bonds for the Caribbean and other regions using a financial structure based on extensive hazard and impact analysis, providing an innovative funding instrument that allows a much more efficient distribution of resources during a crisis.

Website | LinkedIn

Ming Xiao

Systematic Management and Automatic Regulation Technique for Ecological Water Sensitive Catchment Design System (call 2020)

Host institution: BETA (UVIC-UCC)

Because of climate change, floods are becoming more and more problematic. Ming has developed a comprehensive intelligent real-time process analysis and control system for flood warning and concomitant effects on water quality that will assist in the early warning of flood impacts on river basins and regional water management.

Website | LinkedIn
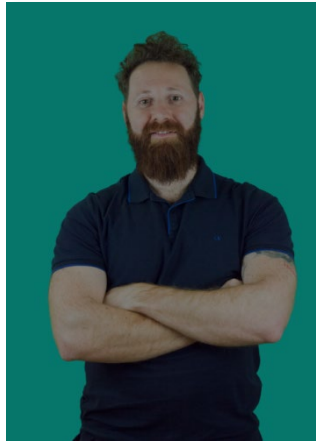
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EXPERIENCE-BASED INDUSTRY

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INDUSTRY

Antonio Andriella

PROCARED - PROaCtive personAlised Robot bEhaviour for eDucation (call 2021)

Host institutions: PAL Robotics S.L. (ES) & Interdepartmental Center for Advances in Robotic Surgery (IT)

Personal robots are ready to create a unique, personally tailored educational experience and can provide a powerful tool. But their use is still missing a very important characteristic: personalisation. Antonio is developing a proactive personalised algorithm for social 'language assistant' robots to help foreigners to learn the local language and enhance teachers' effectiveness.

Website | LinkedIn

Amit Kumar Bedaka

Novel indoor positioning system for human motion capture (call 2021)

Host institution: Chordata Tech S.L.

Motion capture is used in many disciplines but could be further developed with great potential in virtual reality and video games, sports analysis, or rehabilitation. This is why Amit Kumar is developing a disruptive technology that will revolutionise the world of motion capture with inertial technology that will result in a patentable and totally new product on the market.

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Lonce LaMar Wyse

Technology-Enhanced Learning of Music Instruments (call 2021)

Host institution: MTG (UPF)

Music learning can benefit greatly from the support of technology. Lonce is developing an assistive, self-learning, and real-time feedback system complementary to traditional teaching, using new audio processing, artificial intelligence, and motion capture technologies and a reference database of multimodal recordings of expert performances to assess student progress.

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SUSTAINABLE MOBILITY

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INDUSTRY

Marc Pous Solà

Interference Measurement & Evaluation on Vehicles (call 2019)

Host institution: GCEM (UPC)

To ensure the proper performance of communication systems, sensors and power electronics in vehicles, electromagnetic compatibility (EMC) is key. This is why Marc has developed a methodology to identify and define the EMC requirements and a time-domain measurement and processing system.

Website |LinkedIn

Maciej Wielgosz

ARCANE - Adversarial Cases for Autonomous Vehicles (call 2019)

Host institution: CVC (CERCA)

There has been significant progress in the development of autonomous vehicles in the last few years, but many of the solutions developed are based on Deep Learning and algorithms which lack robustness in rare and adversarial cases. Maciej has developed an application capable of injecting adversarial cases into the simulated world in a methodical way.

Website | LinkedIn
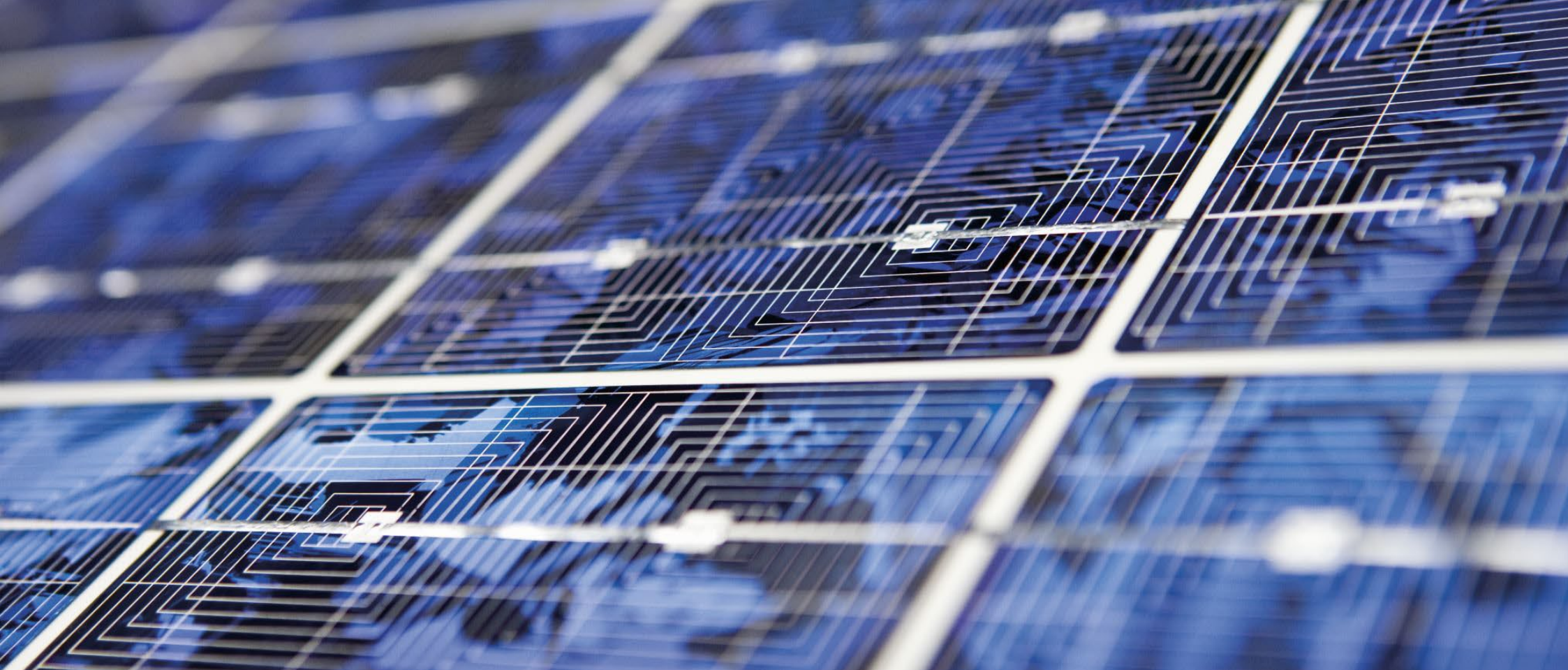
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INDUSTRIAL SYSTEMS

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INDUSTRY

Massimo Cenciarini

ENHANCE - Elevating the able to personalised homecare (call 2019)

Host institution: CREB (UPC)

Stroke survivors can suffer from life-long complications that hinder their ability to move and perform daily activities. Current solutions are quite expensive: Massimo addressed this issue by developing a novel and low-cost lower limb exoskeleton for rehabilitation activities that is 8–10 times less expensive than current solutions and that is suitable for home use.

Website | LinkedIn

Alfredo Chavez Plascencia

Deep learning sensor fusion in scattering media (call 2019)

Host institution: CD6 (UPC)

In scattering media such as foggy, cloudy, or rainy weather, a single sensor can encounter some drawbacks and fail to detect what it is supposed to. Alfredo has successfully developed an alternative way to combine three sensors by means of deep learning in normal weather that will be applied to scattering media in future research.

Website | LinkedIn

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Gastón Martín Francucci

Ultrasound-Assisted extrusion- compounding of polymer nanocomposites (call 2020)

Host institution: EURECAT

The addition of nanoparticles to polymers can greatly improve many of their properties; however, their mass production presents a challenge: dispersing the nanoparticles in the polymer matrix. Gastón is validating a previously developed and patented device capable of improving the dispersion degree of these compounds, determining their optimum processing window.

Website | LinkedIn
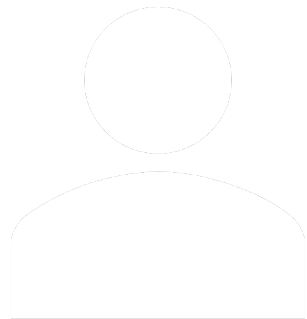
Salah Kamel

Optimal Planning and Design of Renewable Microgrids in Spain (call 2020)

Host institution: IREC

Availing of clean, reliable and affordable energy is one of today's main challenges. Salah is determining the optimal size of a stand-alone hybrid microgrid systems based on photovoltaic, wind, biomass, diesel, and Battery Energy Storage, that will take into account weather variations and will reach remote areas in Spain, minimising the cost of energy and the likelihood of loss of power supply.

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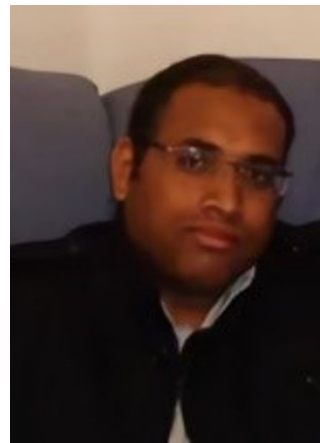
Niravkumar Jitendrabhai Joshi

Advanced 2D materials for Surface Plasmon resonance-based electronic Noses (call 2021)

Host institution: CEMIC (UB)

The emission of greenhouse gases is the major source of global warming and climate change. For an accurate spatial control of these emissions, large number of sensing systems need to be installed and connected. Niravkumar is developing and testing surface plasmon resonance-based gas sensors, made from advanced 2D materials and suitable for IoT and also miniaturisation, low power and selectivity.

Website | LinkedIn

Ashwinikumar Sharma

Development of bio-based polyurethane insulation foams for safe, energy-efficient and lightweight products in construction, household, automotive and related industrial sectors (call 2021)

Host institution: INDRESMAT S.L.

Thermal insulating foam is used in many sectors but is not environmental-friendly. This is why Ashwinikumar is developing a new sustainable bio-based polyurethane foam, improving thermal-efficiency and fire safety, that is both cost-effective and recyclable, revolutionising the construction, household, automotive and even aerospace industries.

Website | LinkedIn

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Pragna Das

Automation of Retail by Teams of Humans and Robots (call 2021)

Host institution: Keonn Technologies S.L.

The retail industry is going through a revolution in what is known as omnichannel commerce, the convergence of on-line and physical commerce, which requires new levels of precision and responsiveness. Pragna is developing a multi-robot system able to cooperate with human operators to complete several tasks in a retail store with maximum accuracy, efficiency, and speed.

[Website](#) | [LinkedIn](#)

Seda Polat

Privacy-Aware Explainable Product Recommender (call 2021)

Host institution: Frizbit Technology, S.L.

In our society, e-commerce has become unavoidable, but marketing automation is facing a major challenge: how to combine high levels of precisions and send hyper-personalised notifications while respecting data privacy. To overcome it, Seda is developing a privacy-aware recommender system employing machine learning and cryptographic algorithms.

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FOOD INDUSTRIES

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INDUSTRY

Neda Ahmadiani

Bioactive fractions from apple pomace (call 2019)

Host institution: CERPTA (UAB)

The extraction of phenolics and pectin from apple pomace conventionally uses solvent extraction techniques. Neda evaluated the application of novel technologies such as pressurised liquid extraction (PLE) and SC-CO2 for the extraction of bioactive compounds from apple pomace and developed a method using PLE technology that extracts significantly higher quantities of certain polyphenols from apple pomace with known higher antioxidant properties.

Website | LinkedIn

Rosa Vilaplana Ventura

BIOFUNTECH - Advanced biofungicide production through innovative technologies (call 2020)

Host institution: BETA Tech Center (UVIC-UCC)

There is a growing demand for more sustainable and healthier food while maintaining or even improving competitiveness. Rosa is developing a biocontrol agent produced by solid state fermentation combined with a coating formulated with natural products, that can be used to obtain healthy fruit free of chemical residues in line both with producers' and consumers' expectations.

Website | LinkedIn

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Lucía Yohai Del Cerro

ReCuWINE - Characterisation and Treatment of Contaminated Water and Sludge in the Wine Industry. A Circular Economy application of novel methodologies (call 2021)

Host institution: GTS (UAB)

Copper-based compounds to prevent fungal diseases in vineyards are a common practice worldwide, but copper accumulation in soil, winery waste and vegetation is causing a serious environmental problem. Lucía is developing an innovative process to recycle wastewater and sludge as irrigation and fertilising materials on one hand, and on the other, copper to be transformed into related fungicide compounds.

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HEALTH AND LIFE SCIENCES

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INDUSTRY

Montse Marquès Bueno

INSULIN - Information on endocrine disruptors and the development of gestational diabetes mellitus - a mobile app (call 2019)

Host institutions: TECNATOX (URV) (ES) & University of Antwerp (BE)

The incidence of gestational diabetes has increased in the past 20 years to reach up to 18% of all pregnancies and is now a public health concern. One of its factors is endocrine disruptors. This is why Montse has developed safe+PREGNANCY, a mobile app that helps prevent exposure to endocrine disruptors, addressed to pregnant women, gynaecologists, and mid-wives.

Website | LinkedIn

Jordi Ribas Maynou

Genetic implication of sperm toroid linker regions (call 2019)

Host institutions: TECNOSPERM (UdG) (ES) & Institute for Biogenesis Research, University of Hawaii (USA)

Human infertility is becoming more frequent as years go by. Jordi has developed a new quality marker of embryo development thanks to a methodology to induce sperm chromatin fragmentation followed by a mapping of the double-strand breaks, allowing us to understand how toroid linker regions of sperm chromatin are involved in the formation of male pronucleus.

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Joan Marc Cabot Canyelles

Tumour-on-a-chip: One-person trial for drug efficacy (call 2019)

Host institution: LEITAT

The construction of valid artificial organs requires not only precise cell manipulation, but a detailed understanding of the complex fundamental response of the human body to any event. Joan Marc has developed a scalable microfluidic design for tumour-on-a-chip, combining it with drug formulations to treat tumours, and integrating all the components in a single diagnostic device.

[Website](#) | [LinkedIn](#)
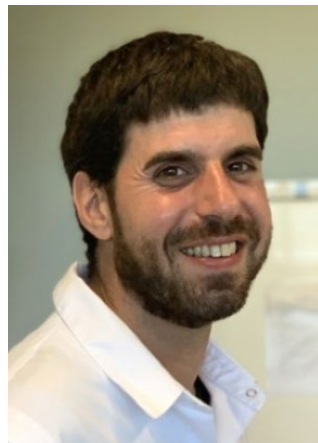
Ferran Pujol Vila

MECROBIO - Mechanochromic antibiotic susceptibility testing (call 2019)

Host institutions: IMB-CNM (Tecnio centre BIOMEMS) (CSIC) (ES) & Vaccine and Infectious Disease Institute - University of Antwerp (BE)

Antimicrobial resistance among bacteria is a real public health concern. Ferran has developed colour-changing mechanical sensors enabling an imaging-based assessment of bacterial antibiotic susceptibility, using inexpensive materials and simple colour analysis in combination with the multi-detection capacity of imaging-based platforms, allowing for fast and inexpensive diagnosis of bacterial infections and a more accurate use of broad-spectrum antibiotics.

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Francisco Javier Burgos Fernández

Automated-spectral smartphone for fundus diagnosis (call 2019)

Host institutions: CD6 (UPC) (ES) & National Institute for Research in Computer Science and Automation (FR)

To be better treated, eye fundus pathologies must be detected at early stages. Francisco Javier has developed a cost-efficient and easy-to-use smartphone-based spectral fundus camera for automated diagnosis, working in the visible and near infrared ranges and using machine learning to offer a practical and accurate tool for a better discrimination of pathological alterations in the eye fundus even at early stages.

Website | LinkedIn

Xavier Gómez Santacana

ENDOLABEL - Ligand-directed tools to label endogenous GPCRs (call 2019)

Host institution: MCS (CSIC)

Precise diagnostic techniques and personalised therapeutic treatments are urgently needed in neuroscience and physiology. That is why Xavier has developed molecular tools based on chemical biology to label membrane proteins with ligand-directed strategies.

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Karla Patricia Mayolo Deloisa

NANO-RESIST - Engineering novel peptide-based nano-delivery systems against antimicrobial resistance (call 2019)

Host institution: NANOMOL (CSIC)

Antimicrobial resistance is currently one of the main concerns of global health. Karla Patricia has developed an anti-infective strategy based on nanoparticles using human enzymes and peptides that inhibit bacterial growth, which can be used as an alternative to conventional antibiotics.

Website | LinkedIn

Anna Crespo Puig

PIONEER - Modulation of the human immune response against viral vectors with polymeric conjugates to enhance the effectiveness of gene therapy (call 2020)

Host institution: RemAb Therapeutics S.L

Gene therapy replaces a mutated gene with a healthy copy of the gene to treat diseases via the administration of viral vectors, but these can be neutralized by human antibodies. Anna has developed a treatment to block and reduce the human immune response mediated by antibodies against the most widely used viral vectors in gene therapy, thus increasing their effectiveness.

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Dorota Komar

EMMA - Epigenetic Markers in Menopause/Aging (call 2020)

Host institution: EURECAT

Menopause transition can have many unpleasant symptoms, and its irregularities can accelerate age-related diseases. Centred in epigenetics, Dorota has identified fingerprints and biomarkers of menopause onset and progression that will be used in the design and validation of nutritional interventions to improve body health state or balance.

Website | LinkedIn

Jose María Pozo Soler

MyDeFibOr - Coupled Myocardial Deformation and Fibre Orientation from cardiac cine-MRI and DT-MRI (call 2020)

Host institution: ELEM Biotech, S.L.

The understanding and personalisation of cardiac contractile function, though crucial for improving diagnosis, prognosis, and treatment of cardiovascular diseases, is still limited. Jose María is developing advanced analysis algorithm coupling two modalities of magnetic resonance imaging to improve the personalisation of the myocardial fibre architecture and better detect deformation.

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INDUSTRY

Jennifer Pérez Boza

FlomicsLungDx - Diagnostic biomarkers of lung cancer based on cell-free long RNAs (call 2020)

Host institution: Flomics Biotech S.L.

Lung cancer is the leading cause of cancer-related deaths worldwide. Despite the high mortality, it is treatable, and curable, if detected at early stages, but the current standard for diagnosis is quite invasive and expensive. Jennifer is developing a diagnostic tool based on a signature of circulating biomolecules produced by cancer cells, allowing early detection by a minimally invasive biopsy.

Website | LinkedIn

Lucía Suárez Lopez

Development of a first-in-class biologic to treat advanced colorectal cancer with high unmet need (call 2020)

Host institution: ONA THERAPEUTICS S.L.

Colorectal cancer is one of the advanced metastatic cancers with high unmet need. Lucia is developing a first-in-class biologic drug that targets lipid metabolism and inhibits the ability of colon cancer cells to metastasise.

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INDUSTRY

Pablo Giménez Gómez

Smart Lollipop - Smart Candy for Cholesterol Detection in Saliva of Paediatric Patients (call 2020)

Host institutions: Happy Innova S.L. (ES) & KTH Royal Institute of Technology (SE)

For decades, blood analysis has been the gold standard in diagnostic procedures. However, it is quite invasive and painful, difficult to perform in children. Pablo has developed the Smart Lollipop, a non-invasive smart candy integrating a biosensor that allows the detection of hypercholesterolemia in children through saliva samples transforming a painful medical experience into a fun moment.

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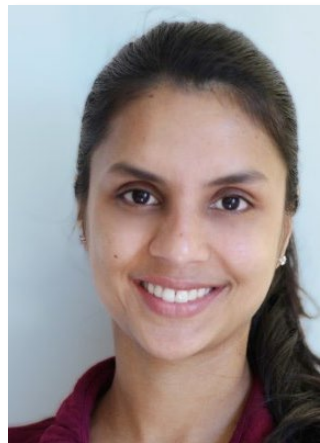
Mamatha Nijaguna

Inhibiting mechanotransduction for oncology therapy (call 2020)

Host institution: IBEC (CERCA)

Curing cancer is one of the biggest challenges of the century. Mamatha is developing a mechanoinhibitor consisting of small molecules that inhibit the stiffness-mediated YAP nuclear translocation and decrease the proliferation of cells, which could be used for cancer treatments.

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José Rodrigo Magaña Rodríguez

Multilayered antifouling polyplexes for cancer metastasis treatment based on miRNA delivery to inhibit epithelial to mesenchymal cell transition (call 2020)

Host institution: IQS TECH TRANSFER

Cancer metastasis treatment is one the biggest challenges today. José Rodrigo is developing miRNA delivery systems for the treatment of cancer metastasis via the inhibition of the epithelial to mesenchymal cell transition by electrostatically trapping miRNAs in nanometric-size polymeric nanoparticles with shells to avoid immune system recognition, enhance their cellular uptake, and protect the genetic cargo from degradation.

[Website](#) | [LinkedIn](#)

Maria Demestre Viladevall

Embryo on a chip: Smart microdevice development for high-throughput screening embryo implantation (call 2020)

Host institution: IBEC (CERCA)

The available options to achieve better embryo implantation rates are either invasive (implantation assays) or lack sufficient bio-relevance (ex vivo implantation using 2D models). Maria is developing a chip to perform high-throughput optical studies for a reliable alternative, 3D ex vivo collagen-based matrix which enables optical access and recapitulates features of implantation.

[Website](#) | [LinkedIn](#)

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INDUSTRY

Marc González Capdevila

Development of a Full SDK Platform for Disruptive 3D Bio-image Analysis (call 2021)

Host institution: ViReInstruments S.L.

Improvements in 3D bio-imaging instrumentation hardware can be crucial in studies tackling the singularity of some diseases' 3D genome structure. But the large amounts of data provided by these instruments can be complicated to handle. Marc is developing a platform using DevOps methodology, massive GPU parallelisation, new AI algorithms and VR to unveil previously inaccessible information.

Website | LinkedIn

Claire Braboszcz

COGBAT - Cognitive Battery Test for the extension of a Neurodegenerative Diseases Decision Support System (call 2021)

Host institution: Starlab Barcelona S.L.

The incidence of neurodegenerative diseases in Europe's ageing population is a burden. This burden can be alleviated with early treatment and therefore early diagnosis, but no simple and cost-effective solutions are available. Claire is developing a Decision Support System based on non-invasive brain activity monitoring that will help with this early diagnosis of neurodegenerative diseases.

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INDUSTRY

Marta Broto Aviles

Development of the Next Generation Thrombocytopenia Diagnostic Assay for VITT (call 2021)

Host institution: Biokit Research & Development, S.L.U.

The appearance of an unusual thrombotic event in some patients has been linked to the administering of a Covid-19 vaccine. Called vaccine-induced immune thrombocytopenia and thrombosis (VITT), they clinically mimic autoimmune heparin-induced thrombocytopenia (HIT), but distinguishing the two is of utmost importance to ensure patient care and survival. This is exactly what Marta is doing by developing a fully automated chemiluminescence immunoassay.

Website | LinkedIn

Miquel Alfaras Espinàs

Unobtrusive Physiology Tracking for Ageing Knowledge Enhancement (call 2021)

Host institution: NVISION Systems and Technologies, S.L.

With a global increase in life expectancy, society is faced with the challenge of ensuring a healthy ageing that supports self-sufficiency, dignity and inclusive values. Miquel is developing a home-based remote radiofrequency real-time monitoring of vitals for the elderly, with no user action required, using sensitive sensors and advanced Artificial Intelligence methods.

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INDUSTRY

Omar Vidal Pino

Robust detection of street crossings and other urban features to improve mobility of the visually impaired through fusion of real time RGBD video analysis and GNSS based geopositioning (call 2021)

Host institution: BIEL GLASSES S.L.

To free millions of visually impaired people from their dependence and isolation, Omar is contributing the development of smart glasses that use artificial vision, robotics, AI and mixed reality, by increasing their robustness and scene understanding capacity.

Website | LinkedIn

Séverin Lemaignan

TALBOT - CogniTive architecture for sociAL roBOTs (call 2021)

Host institution: PAL Robotics S.L.

Assistive robots could be an asset for our society, but their social intelligence is still lacking. Séverin is developing a cognitive framework for social robots to provide them the capability to implement and manage human robot interaction controllers with a focus on a standard model for human representation.

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INDUSTRY

Muhammad Qasim

Femur strength estimation based on 3D-SHAPER generated DXA image (call 2020)

Host institution: 3D-Shaper Medical S.L

Osteoporosis is a musculoskeletal disease characterised by the loss of bone density and is responsible for 10 million low trauma fractures per year. The clinical gold standard for diagnosis fails to identify up to 50% of patients that could benefit from bone growth treatment. Muhammad is developing a reliable and economic alternative tool for the diagnosis of osteoporosis.

Website | LinkedIn

Raquel Boqué Sastre

DEvelopment oF a T14 Inhibitor for Treatment of ColoRectal Cancer (DEFIT-CRC) (call 2021)

Host institution: Xenopat S.L.

In Europe, colorectal cancer (CRC) represents the second most common type of cancers and the second leading cause of cancer death, mostly due to the inability to control metastasis progression. Raquel is developing a new drug that can block the spread of cancer cells, preventing metastasis and improving therapy.

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INDUSTRY

Mónica Marlene Rojas Martínez

MyoArm: Smart Technology for Motor Rehabilitation (call 2021)

Host institution: CREB (UPC)

Although very accurate, intramuscular electromyography is not recommended for rehabilitation purposes because of its invasiveness and patients' discomfort. Mónica is developing a non-invasive solution, MyoArm, which is able to quantify muscles' condition during the rehabilitation of muscular disorders of the shoulder and arm, improving results and reducing costs.

Website | LinkedIn

Eloi Ramon Garcia

Flexible Printed Lab-on-a-Foil personal PoC (call 2019)

Host institutions: IMB-CNM (Tecnio centre BIOMEMS) (CSIC) (ES) & KARLSRUHE INSTITUTE OF TECHNOLOGY (DE)

Highly portable and low-cost personal diagnosis tools are necessary for millions of people who suffer from chronic diseases and need daily personal monitoring. Eloi has developed a novel diagnostic platform: a flexible lab-on-a-foil solution based on printed electrochemical biosensors for a simplified cost-effective, disposable, autonomous and reliable diagnosis.

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