RESEARCH CENTER

Unmanned Ground Vehicle

Company: INTA

Description: It is an unmanned ground vehicle in which the original energy storage system, based on Life Po batteries, has been replaced by a hybrid power system, based on fuel cell and batteries. The new hybrid system integrates a series-connected lithium cell pack, a pressurized hydrogen tank, a PEM fuel cell stack, an energy management, and monitoring system (EMS) and appropriate auxiliary systems to ensure safe and efficient operation of the system. This system significantly increases the platform's autonomy, extending mission duration and vehicle capabilities.

WEB: https://www.inta.es/INTA/es/index.html

Electrolyser

Company: INTA

Description: PEM technology electrolyser with solid polymer electrolyte. Hydrogen and oxygen are produced through the electrolysis of water. A device integrated in an experimental microgrid at INTA's El Arenosillo Energy Laboratory (Huelva) where the electrical energy is supplied by renewable sources, so the electrolyser generates green hydrogen. The electrolyser allows hydrogen to be used as an alternative energy source, produced during periods of high-level energy generation at the facility. The layout of this electrolyser allows an exhaustive analysis of all the devices that make up its balance of plant, thus facilitating experimental tests, as well as revision and preventive maintenance tasks. It is based on a commercial unit in which the control system and the balance of plant have been modified for optimization under the indicated operating conditions, resulting in an industrial prototype with network monitoring and recording capacity. Its size and temperature

range, together with its efficiency and cost ratio, contextualize it in applications from residential energy communities to small and medium-sized industries, and its capacities can be scaled up to large-scale implementations.
WEB: https://www.inta.es/INTA/es/index.html

Big Cell

Company: INTA
Description: INTA carries out an extensive research program to develop the necessary technologies for the design and construction of a wide range of unmanned aircraft and related systems, such as the SIVA (Integrated Aerial Surveillance System) project. SIVA is a sophisticated unmanned aerial surveillance system with multiple civil and military applications, and can be used as a real-time observation vehicle. The SIVA aerial platforms are currently powered by a conventional internal combustion engine, but INTA has already tackled new phases of this project that contemplate the electrification of the platform, integrating electric motors, and the use of PEM fuel cells powered by hydrogen and oxygen for the generation of the necessary electrical energy, as well as on-board storage systems for both gases under pressure. The prototype initially developed and evaluated has a 30 kW PEM fuel cell; lithium-ion batteries with a peak power of 8.8 kW; 1.1 kg of hydrogen at 350 bar and 8 kg at 200 bars; and an electric motor with a nominal power of 35 kW.
WEB: https://www.inta.es/INTA/es/index.html

Small Cell

Company: INTA
Description: Electrochemical device that generates electricity from hydrogen and oxygen contained in air, 200 W nominal power. Technology based on

polymeric proton exchange membranes (PEM), open cathode and low temperature. A product developed for INTA that has been integrated into an unmanned ground vehicle among other platforms.
WEB: https://www.inta.es/INTA/es/index.html

Human-Centered Design Canvas

Company: Business Technology Forum (Sofigate)
Description: Planning the development of services in nursing homes from the point of view of the family members.
WEB: https://www.sofigate.com/

Bleecker System

Company: Bleecker Technologies
Description: This prototype shows the Bleecker System in operation, which facilitates the tracking of goods using Bleecker codes and computer vision in industrial environments. The system can perform multiple reading of Bleecker codes remotely, on the move and in real time, overcoming the disadvantages of other technologies such as RFID, barcodes or Data Matrix codes. In this prototype, any attendee will be able to pick up one or more Bleecker codes and test the efficiency of the Bleecker system.
WEB: https://bleecker.tech/es/

Proy SUNBOX

Company: UCM3
Description: This is a LED solar simulator that illuminates areas of up to 25 cm2 from ultraviolet to near infrared with a fully customizable spectrum (between 360 and 1000 nm) to analyze and monitor the efficiency and

degradation of solar cells, photodetectors... or test any other product/material on which you want to know the effect of sunlight.
WEB: https://researchportal.uc3m.es/display/act497569

ECOTECH

Company: Omnia Intelligence
Description: The main objective of the Omniatec Smart City project is to measure pollution in cities. Using a dynamic network of CO2, eCO2, NO2, Ozone, TVOC, PM2.5, PM10, temperature and humidity sensors installed in a fleet of vehicles, we obtain samples of the pollution associated with specific geolocation and time. Using the data bank provided by the sensors we can visualize and extract patterns operating Artificial Intelligence techniques.
WEB: https://omniaintel.com/

WELDTRACER

Company: Thingtrack
Description: Weld Tracer is a safe, robust, and scalable system for real-time monitoring of the main welding parameters: voltage, current, wire speed and power consumption in MIG/MAG welding equipment.
WEB: https://www.thingtrack.com/

Collabwith

Company: Collabwith
Description: It is a web-based system modeled by collaboration techniques and emotional intelligence to help universities manage their innovation ecosystem and business-university collaborations at institutional and individual levels, in an efficient and secure way. Our SaaS ecosystems include clients such as Signify, the European Aerospace Ecosystem, Life watch ERIC

with its Agroecology projects, ResInfra, etc. Check this following link for a free guide on how to coordinate an innovation ecosystem through the university: https://collabwith.com/universidades.
WEB: https://collabwith.com

3DBlend

Company: University of Cádiz
Description: In this project, different polymeric blends incorporating fibres and cork, as well as surface coatings, have been developed in search of sustainable developments on a pre-industrial scale. These materials have been designed for use in large-format additive manufacturing technologies, where the material is supplied in pellet form, significantly reducing processing costs.
Another objective of the project is the search for applications in different industrial sectors, such as aeronautics, the naval sector, the habitat sector, the automotive industry and the nautical sports sector. The products identified within this analysis have served as a starting point to be designed with industrial design methodologies and tools and have been materialized in the form of prototypes.
WEB: https://tep946.uca.es/

Treatments for the protection of construction materials

Company: University of Cádiz
Description: The prototype consists of a liquid product for the treatment of building materials with water repellent properties. The product is applied on the surface of the material and penetrates the pores, creating a matrix of similar composition to the substrate and resistant to water ingress, while creating a surface with water repellency and high stain resistance. To demonstrate the effect, we have a 30x20x25 cm (length x width x height)

display stand showing materials treated with the product (photos attached) under simulated rain. To put it into operation I would need two power sockets (to power LED lights and a small fish tank pump). The water circuit is re-circulated, only the tank would need to be filled at the beginning of the assembly (~2.5 liters).
WEB: https://tep946.uca.es/

Artificial Intelligence

Company: Aifunded
Description: Current question-answering systems use text documents as a knowledge base and combine various natural language processing techniques. They include a question classifier module that is responsible for determining the type of question and answer. After analyzing the question, the system uses several modules that apply complex natural language processing techniques, increasing the complexity between each module. After that, a document retrieval module that uses search engines to identify documents and paragraphs in the document that may contain the answer to the question is applied. Subsequently, a filter that selects small pieces of text containing strings of the same type as expected is used. As a result, it displays the most relevant answer.
WEB: https://www.aifunded.es/

Air sampler prototype based on the use of fans

Company: University of Córdoba
Description: Prototype air sampler based on the use of ventilators.
WEB: http://www.uco.es/

Materiales para la purificación del aire en entornos urbanos mediante fotocatálisis

Company: University of Córdoba

Description: New materials for air purification in urban environments by photocatalysis.

WEB: http://www.uco.es/

SafeSink

Company: Institute of Ceramic Technology

Description: Development of water end-point disinfection systems based on bactericidal ceramic materials", funded by the Valencian Innovation Agency, which aims to valorize the proprietary technology of microspheres capable of releasing silver in a controlled manner and, therefore, presenting a biocidal power in contact with water or liquids.

WEB: https://www.itc.uji.es/

FitGames

Company: University of Málaga (UMA)

Description: The term FITGAMES is applied to video games that include, in addition to the entertainment component, the need to do some kind of exercise. These are games that react to the player's body movements. They force to change the stereotype of gaming as a sedentary activity and promote a more active lifestyle. Recent studies by the World Health Organization (WHO) indicate that most adolescents do not get enough physical activity, which endangers their future health. In this context, gamification is ideal to engage young people and help them improve their quality of life. In our case, in addition to the physical exercise component, we will add a musical didactic component.

WEB: https://www.uma.es/

Extruder Winder

Company: University of Málaga

Description: Machines that implement the circular economy in the treatment of plastic waste. Through a process consisting of several stages, plastic waste is transformed into new objects or products, allowing this raw material to remain longer in the production chain: the winder and extruder, which are responsible for producing recycled plastic filament and winding it for storage and subsequent use.

WEB: https://www.mareaplastic.uma.es/

Synride

Company: University of Málaga (UMA)

Description: The SynRide device proposes to improve students driving by learning in parallel with the user. SynRide will always report the level of safety and performance experienced to facilitate driving, reduce pollution and increase safety. In this way the user can focus on driving knowing that SynRide will alert them for incorrect driving or abnormal vehicle behavior. The device analyses the driving together with the user, as indicated by the name of the device: Syn (from Greek σύν = with, together, at the same time) Ride (from rīdan = to sit and control movements).

WEB: https://www.uma.es/

Rover Espacial

Company: University of Málaga (UMA)

Description: The Rover on display is an autonomous vehicle on loan from ESA (European Space Agency) to simulate the low-light environment of the lunar poles.

The Rover carries navigational aids to work in both light and dark, including stereo cameras, lights, GPS, laser rangers and radar-like infrared sensor

technology. They can create digital 3D maps from these various sensors for autonomous and teleoperated steering.
WEB: https://www.uma.es/

Cobots

Company: University of Málaga (UMA)
Description: Collaborative robotics offers a first approach to flexible manufacturing, removing barriers between human workers and robots, now called cobots, which have safety features that make physical barriers unnecessary. However, while collaborative mobile manipulators increase production flexibility, more versatile and efficient robotic hands are still required.
A prototype demonstrator of a manufacturing cell with a collaborative robot equipped with a gripper provided with adaptive and rotating fingers is presented.
WEB: https://babel.isa.uma.es/rollgrip/

Composta Project

Company: University of Málaga (UMA)
Description: As part of the UMA Composta project, which focuses on organic waste management, a prototype of the measuring pole and fume hood of the project is presented.
WEB: https://eventos.uma.es/63021/detail/uma-composta-plan-propio-smart-campus.html?private=2a4fba12616d0f334a95

Wireless Charger

Company: University of Málaga (UMA)
Description: A charger that attaches to the base of the scooter and allows it to receive power from a platform placed on the ground without a cable

between them. The technology is based on power electronics and magnetic fields. We would present the charging platform and the scooter with the electronics and coils necessary for charging.
WEB: https://www.uma.es/IP-Lab/

Interactive demonstrators

Company: University of Málaga (UMA)
Description: "Demonstration of different interactive applications for the management of mobile networks:
1. Virtual Reality: acquisition of quality metrics in real time and mobile transmission".
2. Cloud gaming: cloud gaming, network performance metrics and automation.
3. Open RAN and virtualization: dynamic virtualization schemes for 5G/6G networks.
4. Localization for mobile network management.
WEB: https://mobilenet.uma.es/

VIP System

Company: University of Málaga (UMA)
Description: The VIP System consists of a set of tools to support interpreters in each of the phases of their work. It includes tools for creation (semi-automatic compilation), corpus management and consultation, creation, and management of multi-language glossaries, as well as complementary and training utilities.
WEB: www.lexytrad.es

DIAS2P & StreetQR

Company: University of Málaga (UMA)

Description: DIAS2P is an intelligent device to increase safety at pedestrian crossings. Specifically, in those that do not have traffic lights, which are where most pedestrian accidents occur in municipalities. On the other hand, StreetQR (Intelligent base for street nameplates and places of interest), is a device that, as well as serving as a base for street nameplates, displays a QR code, of a suitable size, so that any pedestrian can obtain the information that the city council (or other entity) has decided to place at that point in the city".

WEB: https://www.uma.es/

Breathing Machine

Company: University of Málaga (UMA)

Description: Easily constructed and affordable mechanical ventilator with different ventilation modes.

WEB: https://www.ibima.eu/

Electrochemical battery for a sustainable circular model based on recyclable electrodes

Company: IMDEA Energy

Description: Battery assembled with semi-solid injectable electrodes to facilitate recycling of the active materials and reuse of the passive elements of the battery.

The concept of an injectable battery refers to an electrochemical battery characterized by electrodes that are not attached to a current collector, but are injected as a semi-solid material, allowing direct recovery of the active materials by de-injection of the electrodes from the cell. In conventional batteries, shredding is necessary for a proper recycling process. However,

the advanced injectable battery concept developed by IMDEA Energía and the University of Burgos allows a practical reuse of all passive components and the replacement of electrode materials.
The procedure means that the battery cells remain intact, allowing their reuse, including all chemically inactive elements such as current collectors, separators, or membranes, and simplifying the recycling process by eliminating several steps. The reuse of the battery cells results in a significant reduction in the cost of the battery.
WEB: https://energia.imdea.org/

Synthetic hydrogels for 3D culture of immune cells

Company: CSIC General Foundation
Description: Hydrogels for immune cell growth and expansion and organoid growth.
WEB: https://dynamic-biomimetics.icmab.es/

Dual imaging system for use in oncological diagnoses and guided biopsies in real time

Company: CSIC General Foundation
Description: A device for cancer biopsy guidance that combines ultrasound with gamma imaging detectors (radiotracer detection), coupled in a portable, easy-to-handle system, and includes software that overlays the images and creates a combined anatomical + functional image.
WEB: https://www.csic.es/es

TiO2 Supported Photocatalyst for wastewater decontamination

Company: CSIC General Foundation

Description: The prototype consists of a continuous flow photoreactor filled with TiO2 supported photocatalyst through which the wastewater is circulated with peristaltic pumps and has a LED irradiation system that activates the photocatalyst and a total organic carbon (TOC) detector that analyses the water in real time during treatment.

WEB: https://www.csic.es/es

Electrochemical sensor for rapid on-site water analysis

Company: CSIC General Foundation

Description: Screen-printed electrodes for the detection of chemical oxygen demands or heavy metals that do not require sample preconditioning and can be used with a commercial mini-potentiostat adapted to a mobile phone. Can be adapted to the analysis of other analytes.

WEB: https://www.csic.es/es

Automatic Water sampling system operated from drones (AWA)

Company: CSIC General Foundation

Description: This is an automatic water sampling (AWA) system that, operated from drones, allows sampling of up to 2 L of water. This system allows access to dangerous and/or difficult to access areas without risking the operator and without interfering with the fauna or flora of the site.

WEB: https://www.csic.es/es

Smart Nest Box for animal monitoring

Company: CSIC General Foundation

Description: Technified nest-box with the possibility of integrating different sensory modalities, different processing platforms, and different communication standards.

WEB: https://www.csic.es/es

Panels for visualization and analysis of information generated remotely by animal monitoring systems

Company: CSIC General Foundation

Description: Information management tool from intelligent systems deployed in natural environments for animal monitoring.

WEB: https://www.csic.es/es

Smart Camera-Trap

Company: CSIC General Foundation

Description: Low-cost, low-power system for automatic visual analysis of a natural environment and accurate detection of wildlife passage.

WEB: https://www.csic.es/es

Automatic bat detection

Company: CSIC General Foundation

Description: Video analysis tool for automatic detection of bats in regions of interest within long duration sequences.

WEB: https://www.csic.es/es

OWO

Company: OWO

Description: OWO has developed and patented a haptic system so you can feel video games, watch movies, or interact in the metaverse. It is unique because we can create infinite different sensations thanks to our Sensation Technology. Physically feel everything that happens to the avatars in the virtual world: sensations such as wind, a ball, a gunshot, the feeling of driving and stabbing have been created. The system is compatible with all platforms: PC, mobile, tablet, console and VR and can be used in single player and multiplayer mode. OWO has created a sensation algorithm that can modify nine different parameters of the pulse train, allowing multiple sensations to be created. OWO's mission is to turn the virtual world into reality.

WEB: https://owogame.com/

Wethecity

Company: IN ONE

Description: Wethecity is the 360 data-driven platform that provides institutional marketing and customer service professionals with the right tools to improve the citizen experience and increase their organization's engagement.

WEB: https://wethecity.es/

Onversed

Company: Onversed

Description: We will show how the platform works where we transform a design or image into a 3D product for physical production or digital distribution, with smart contracts to NFT, and how it adapts to different metaverses and commercial spaces on the web3.

WEB: https://onversed.com/