



CORPORATE DOSSIER

Canary Islands Institute of Technology

Technology and Innovation for a Sustainable
Development







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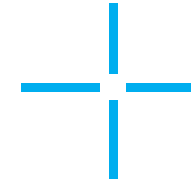
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1. WHO ARE WE?

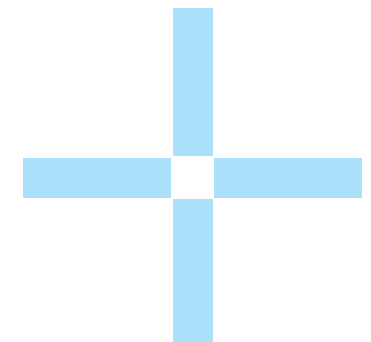
ITC is a public company of the Regional Government of the Canary Islands with over twenty-five years' activity, committed to science and technology as essential factors for the socio-economic transformation and sustainable development of the Canary Islands and its neighbouring regions.

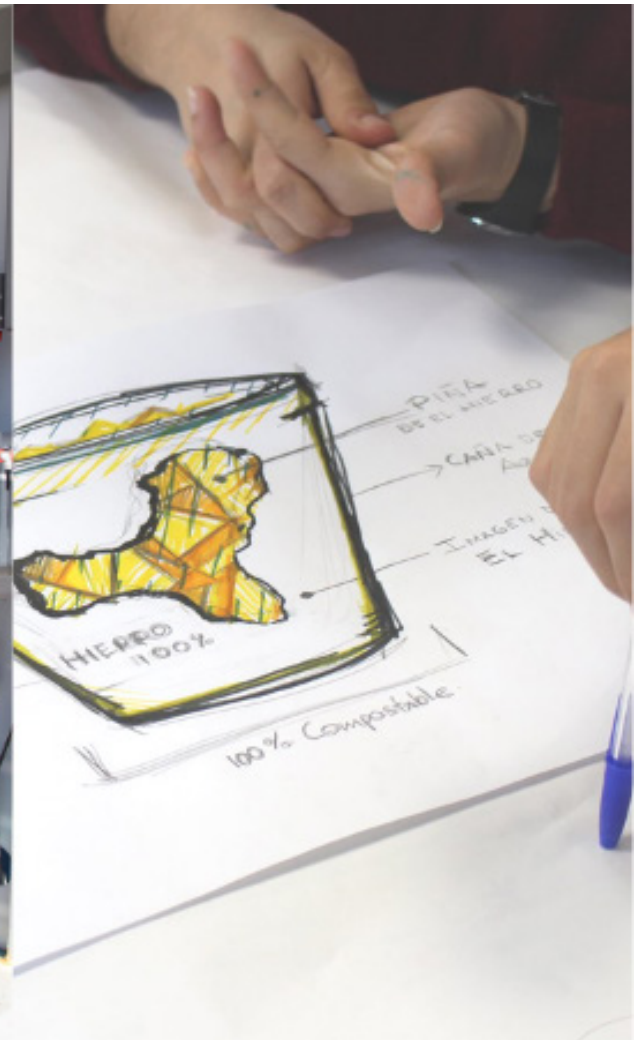
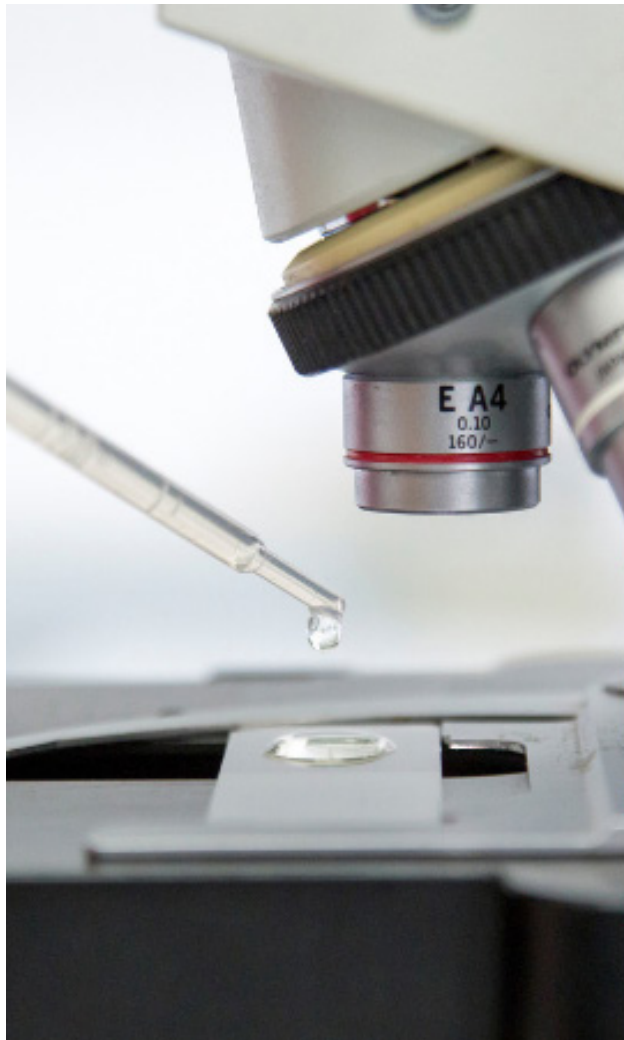
We contribute to the competitiveness of the Canary industry, opening routes to new spheres of the technological and industrial sector.

As an instrumental agency of the Canary Islands Government, our activity takes place in the framework of the implementation of regional policies for the promotion of research and innovation oriented to the productive sector, as well as the execution of collaborative and inter-regional cooperation projects at the international level. We offer technical consultancy to companies and institutions for the definition of strategic projects and testing of technologies in our specialisation areas, as well as the technical capacity and the necessary technological infrastructure.



Our R&D+I activity is aligned with the specialisation areas identified in the RIS3 of the Canaries, a roadmap for the socio-economic transformation of the Islands, which defines the regional public investment priorities in research, development and innovation. From this path of intelligent and sustainable economic growth, we are working to position the Canaries as an internationally acknowledged laboratory for the development of strategies and technologies aiming at environmental sustainability and efficient use of resources, as well as to inspire technological advance of the regional productive fabric. We take advantage of the strategic position of the Canary Islands as an Atlantic platform between Europe and Africa and as an outermost region of the European Union in order to create new spheres of business activity which will generate quality employment and to increase the competitive development of the Canary economy.





2. OUR STAFF

We have a highly-qualified human team, with tremendous ability and experience in the coordination of R&D+I and international collaboration projects. Over 70% of our staff, consisting of 185 employees, are highly qualified technical and scientific workers with a high degree of strategic management and project planning capabilities, as well as skills for the coordination of working teams.



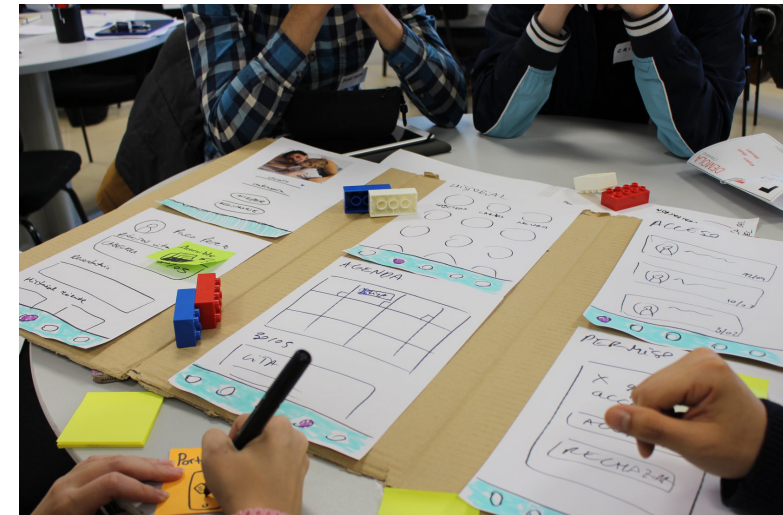
3. OUR SPHERES OF ACTION

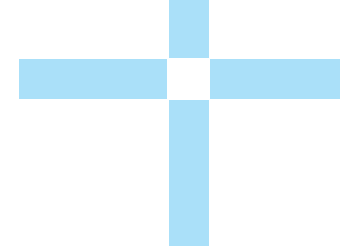
APPLIED RESEARCH AND EXPERIMENTAL DEVELOPMENT

We are committed to the technological progress of the Canaries through applied research and experimental development, execution of R&D+I projects and transfer of knowledge to the productive sector so that it can be integrated in its activity, thus contributing to creating a competitive and sustainable economy capable of creating jobs. We lead national and international R&D+I projects for the demonstration, implementation and development of a wide spectrum of knowledge and technologies.

BUSINESS INNOVATION

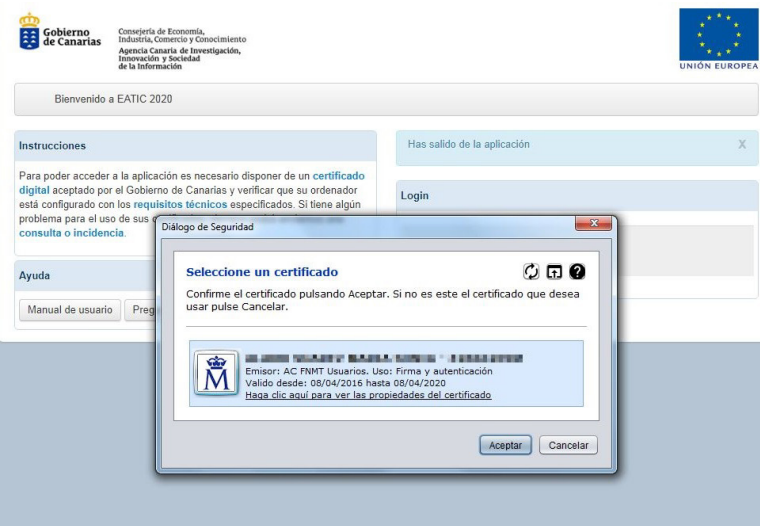
We promote business innovation and entrepreneurship by means of support and training actions in the framework of collaborative networks on a regional, national or European scale. We give support and technical advice to Canary businesses and industries for the development and testing of innovative technologies and adapted solutions. We transfer knowledge and technological innovations to the business fabric by means of licences and rights of use as well as through spin-offs.





SUPPORT FOR INSTITUTIONS AND PUBLIC ORGANISATIONS

We give functional support to the Canary public administration in the development of strategic plans and the implementation of technological solutions which are the answer to multiple challenges related to sustainability and new technologies.



INTERNATIONAL COOPERATION

The geostrategic location of the Canary Islands, their unique biodiversity, their island feature and their ideal conditions as a natural laboratory for testing technologies, allow us to take on international cooperation projects as technological partners together with companies, clusters and business organisations to boost the internationalisation of our activities and the technological support as well as the scientific-technical training to isolated regions, island territories and developing countries. Our accumulated knowledge in stand-alone sustainable water and energy supply systems by means of renewable energies makes us a model for West African countries and less developed rural and remote isolated territories worldwide.



TRAINING, DISSEMINATION AND AWARENESS RAISING

We offer activities for raising environmental awareness and scientific dissemination in different specialisation areas, as well as advanced technological training. In these actions, we use the experience acquired in over twenty-five years' activity through contents developed in each of our working areas.



SERVICES TO THE CITIZENS

Our relationship with society covers consultancy services which, together with training, dissemination and awareness raising actions, contribute to boosting innovation and new technologies capabilities among the citizenship, favouring the productive use of the knowledge generated in our R&D+I areas. In the academic sphere, we contribute to scientific and technical training of university students and graduates through promotion of talent and employability, as well as by accepting students for work practice.



4. OUR AREAS OF SPECIALISATION



WATER

We are technological references in the development of solutions to deal with the challenges of water security and sustainable agriculture. We lead European R&D+I, demonstration and international cooperation projects in the field of sustainable management of water resources, low energy desalination and water treatment systems, productive use of waste water and quality monitoring of coastal waters, among others. We cooperate with territories from the mid-Atlantic area and West African countries on initiatives for the supply of drinking water to isolated areas. We offer consultancy and technological services in key sustainability areas: energy efficiency applied to seawater desalination, development of decentralised water-treatment systems and use of renewable energy in the integral water cycle. We have both technological infrastructure and expert staff for testing and demonstrating water technologies.

 agua@itccanarias.org





ENVIRONMENTAL ANALYSIS

We carry out our activity in the area of sustainable agriculture and food safety, concentrating on the environmental behaviour and the monitoring and control of pesticides which are used on crops on the islands. We manage the Laboratory of Phyto-Sanitary Residues of the Canary Islands, the official agricultural laboratory of the Regional Government, accredited by ENAC (National Accreditation Agency) for the analysis of pesticide residues in fruits and vegetables. The laboratory gives

analytical services to the islands' public administrations and carries out R&D activities in its areas of specialisation, so as to minimise the consumer health risks and the environmental contamination. We contribute to the recognition of local Canary produce and transfer knowledge to farmers. We are starting new working lines related to the characterisation of the isotropic footprint of light elements (carbon, nitrogen, hydrogen and oxygen) and the profile of trace elements as tools to identify the traceability of agricultural food products marketed on the islands.

 laboratorioderesiduos@itccanarias.org



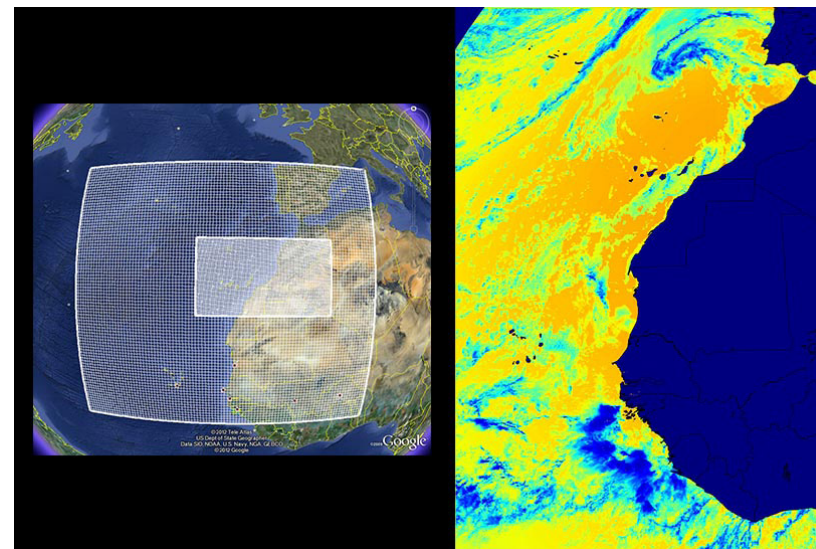
BIOTECHNOLOGY

We promote blue biotechnology through experimental development and applied research in new micro-algae production and processing technologies for applications in the food, cosmetics and nutraceutical industries, as well as to generate productive resources in agriculture and the environment, with the aim of transferring the said knowledge to the Canary business sector. We are part of the BIOASIS platform with the aim of boosting the blue biotechnology industry, and especially plant aquaculture,

together with the University of Las Palmas de Gran Canaria, through the Spanish Bank of Algae and the ECOAQUA Institute, and the Company for the Economic Promotion of Gran Canaria (SPEGC). Our activity ranges from bio-prospecting and the characterisation of micro-organisms to the processing of the generated bio-mass, through the experimental cultivation and selection of certain species which, as a result of their properties and commercial interest, might be cultivated on an industrial scale.

 depbio@itccanarias.org





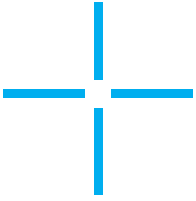
SCIENTIFIC COMPUTATION AND TECHNOLOGY

We apply information and communication technologies to electronic administration and business management projects in Canary public institutions, so as to speed up the administrative procedures, improve public services, facilitate access to the citizen and optimise management by public agents. We develop software and digital tools

aimed at the sphere of energy resources (design of weather forecasting systems) and bio-computing (management and coding of a large volume of genetic information on species). We support the use of virtual and augmented reality technologies for R&D projects. We encourage the use of ICTs in strategic sectors for the Canaries such as tourism and agriculture.

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RENEWABLE ENERGY

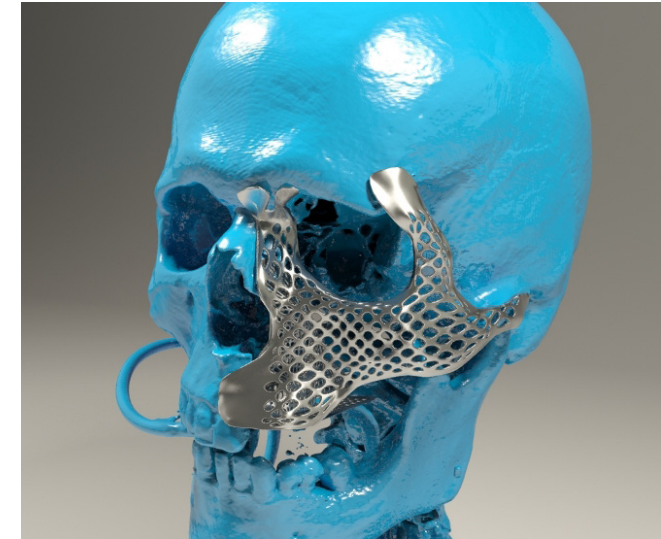
We contribute to de-carbonisation and support public energy transition policies oriented to a climatically neutral economy, positioning the Canaries as a reference natural laboratory for the development of strategies and technologies aimed at maximising the penetration of renewable energies, especially in island grids and in isolated areas, as well as the optimisation of energy saving and efficiency systems. We work in the specialisation of emerging energies with a high degree of potential in our territory such as geo-thermal energy, offshore wind energy and wave energy, as well as energy generation from the organic fraction of waste.

We cooperate internationally with less developed regions by transferring knowledge and implementing systems and validated technologies for the production of renewable energy.

We have accumulated ample experience in climatic and statistical models for the prediction of wind and sun, in electrical grids' stability studies in scenarios of high renewable energy penetration, in energy storage systems and in the design and implementation of decentralised clean energy generation solutions, both with hybrid systems and with smart micro- and mini-grids.

 eerr@itccanarias.org



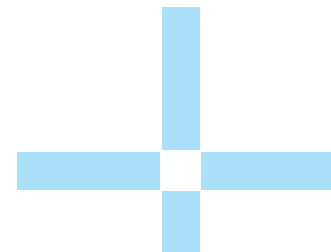


BIOMEDICAL ENGINEERING

We develop technology for surgical support which goes from the design and manufacture of medical devices to operatory assistance. Our R&D lines have the objective of giving a response to specific clinical needs: we generate highly porous titanium structures for reconstruction and regeneration of bones and we produce 'scaffolds' of re-absorbable bio-polymers for the reconstruction and regeneration of cartilage and soft tissues. We make customized implants in 3D for orthopaedic, cranium, maxillofacial and thoracic surgery, as well as

neurosurgery in humans, and we produce in series devices for veterinary surgery. In our CAD/CAM (Computer Aided Design, Computer Aided Manufacturing) Laboratory, we develop processes of engineering, advanced design, as well as additive fabrication with polymers (stereolithography) and titanium (electron beam melting); and in our Biomechanics laboratory we carry out tasks of electromechanical integration and modification of processes and machines, specialising in tissue engineering for the regeneration of tissues.

 biomedica@itccanarias.org





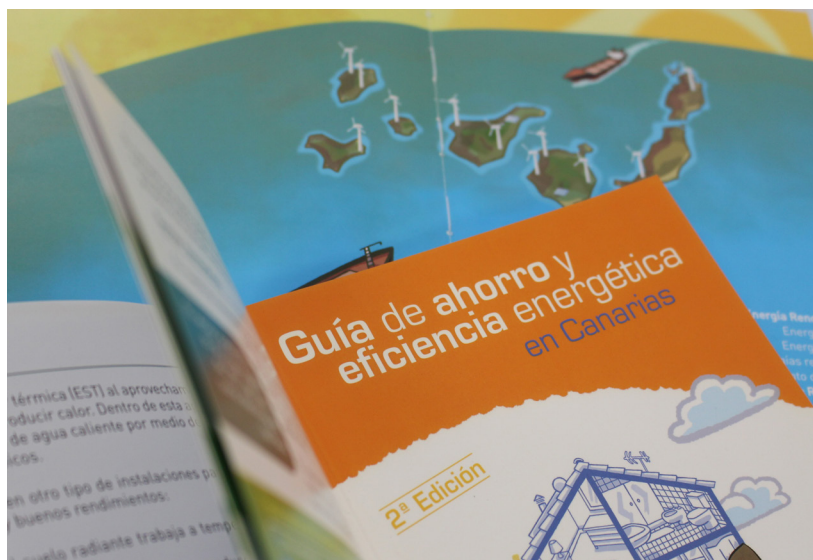
INNOVATION

Through our own projects and those of the Regional Government, we promote the systemisation of innovation in the Canary productive fabric, the internationalisation of R&D and the technology transfer. We boost the coordination of support resources for entrepreneurship, open innovation and the consolidation of clusters in the Canaries so as to improve the competitiveness of the Canary manufacturing sector.

We offer training and advice in business management and we promote innovative culture. We provide support to the Canary Islands Government in drawing up, implementing and monitoring public policies related with the promotion of R&D+I and other strategic sectors. We manage public observatories and technology watch platforms in strategic sectors for the Canary Islands.

 innovacion@itccanarias.org



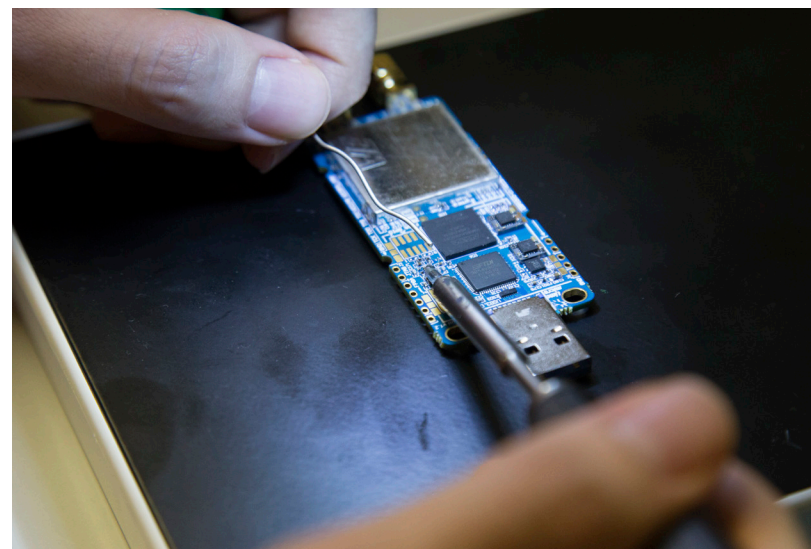
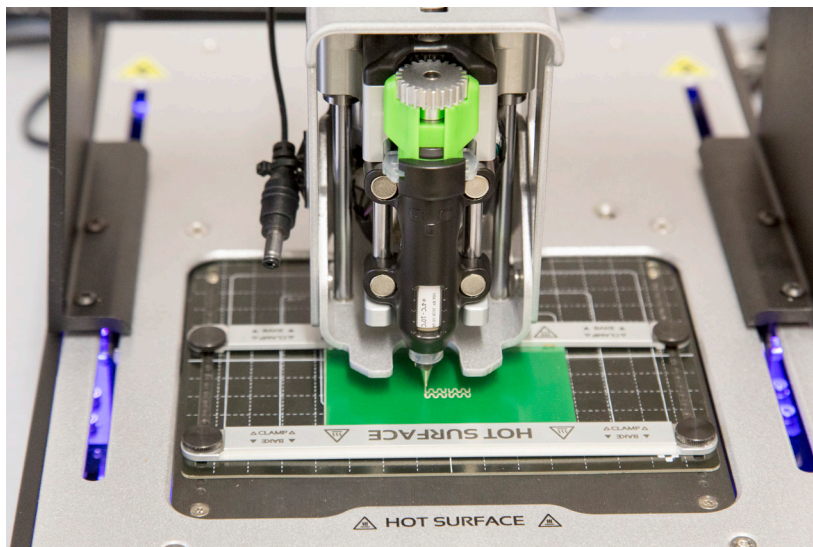


INSTITUTIONAL SERVICES AND METROLOGY

We manage the Official Metrology Laboratory of the General Directorate of Industry where we carry out quality inspections for automotive fuels and verifications of electricity and water meters. We support the Canary

Islands Government in the management of calls for public subsidies, as well as in initiatives aimed at raising awareness and promotion of the rational use of energy and boosting electrical vehicles and sustainable mobility, among others. We promote business initiatives and projects for the treatment of waste associated with the Circular Economy.

 serviciosmetrologia@itccanarias.org



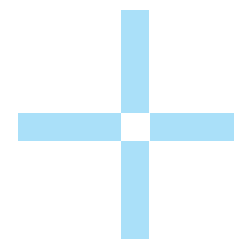
INFORMATION SOCIETY

We give technical support to the Canary Islands Government and local companies in the definition and implementation of strategies for the development of telecommunications and the information society in areas such as broadband deployment and digital television and radio; control and monitoring of the radio-electric spectrum or the monitoring and evolution of ICT indicators. We boost dissemination, awareness

raising and training actions aimed at proper use of Information and Communications Technology by young people and their tutors.

We provide technical advisory services to companies on the design and development of electronic prototypes, on request, and we carry out analysis and monitoring of technical parameters associated with research projects and institutional programmes by means of the use of drones.

 dptosi@itccanarias.org



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5. SUCCESS STORIES

➤ **Gorona del Viento El Hierro.** A public-private consortium responsible for the management of the wind - pumped hydro storage power station located on the Canary island of El Hierro, the first ever 100% renewable system for the total electricity supply to an island. A project carried out and developed with the specialist advice of ITC, capable of covering a high percentage of the energy demand of the population



➤ **Algalimento.** The first company to cultivate micro-algae for the production of food in the Canaries, a result of the transfer of knowledge from ITC to the productive sector.



➤ **TAKATONA II.** An initiative which won the Innova Aquae Islas 2014 Special Prize in recognition of its contribution to the improvement of the environment in rural settings in Africa, with POCTEFEX funding.



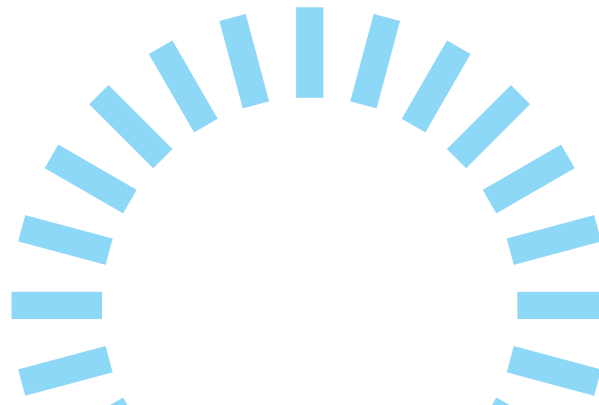
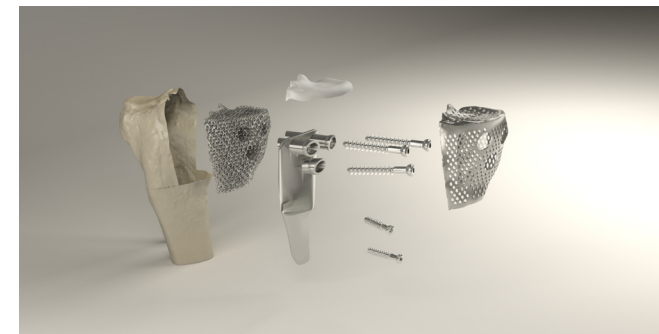
➤ **BIOASIS.** Blue Biotechnology and Aquaculture Platform, which brings together the scientific knowledge and experimental research infrastructures on the island of Gran Canaria with the aim of boosting the development of industry in connection with marine bio-technology. An initiative promoted by the Economic Promotion Company of Gran Canaria, in collaboration with the Canary Islands Institute of Technology and the University of Las Palmas de Gran Canaria, via the Spanish Algae Bank and the ECOAQUA University Institute.



➤ **DESSOL system in Ksar Guilène (Tunisia).** A desalination plant powered exclusively by solar energy which has been supplying drinking water uninterruptedly since 2006 to this village located in the Sahara Desert. The facility, designed and built by ITC, is the oldest in Africa and is based on the autonomous desalination technology developed by ITC, called DESSOL®, which has an international patent.



➤ **OSTEOBIONIX.** The first spin-off resulting from the transfer of scientific and technological knowledge generated by ITC in the development of implants for bone reconstruction in humans and in veterinary medicine.



6. WHERE ARE WE?

GRAN CANARIA

➤ **Las Palmas de Gran Canaria.** The corporate headquarters for the administration activity and the functional departments of Scientific and Technological Computation, Institutional Services and Metrology, Innovation and Information Society.

📍 Calle Cebrián, 3. 35003 Las Palmas de Gran Canaria.

☎ (+34) 928 379 900

➤ **Pozo Izquierdo.** Centre for experimental development which houses the facilities and technological infrastructure where much of the R&D activity takes place. The space holds the activity of the Water, Biotechnology, Scientific and Technological Computation, Renewable Energy, Institutional Services and Metrology and Innovation Departments with the laboratories, technical offices and experimental space areas.

📍 Playa de Pozo Izquierdo, s/n. 35119 Santa Lucía.

☎ (+34) 928 727 500

➤ **Agüimes.** Facilities of the Bio-Medical Engineering area, including the CAD/CAM laboratory, housed in the Centre for Innovation and Technological Updating of the Canaries (CIATEC).

📍 Calle Añepa esquina Tigotán. 35118 Agüimes.

☎ (+34) 928 189 960

➤ **Arinaga.** The headquarters of the Phyto-Sanitary Residues Laboratory of the Canary Islands, managed by the Environmental Analysis Department, located on the Arinaga Industrial Estate.

📍 Calle Los Cactus, 68. 35118 Agüimes.

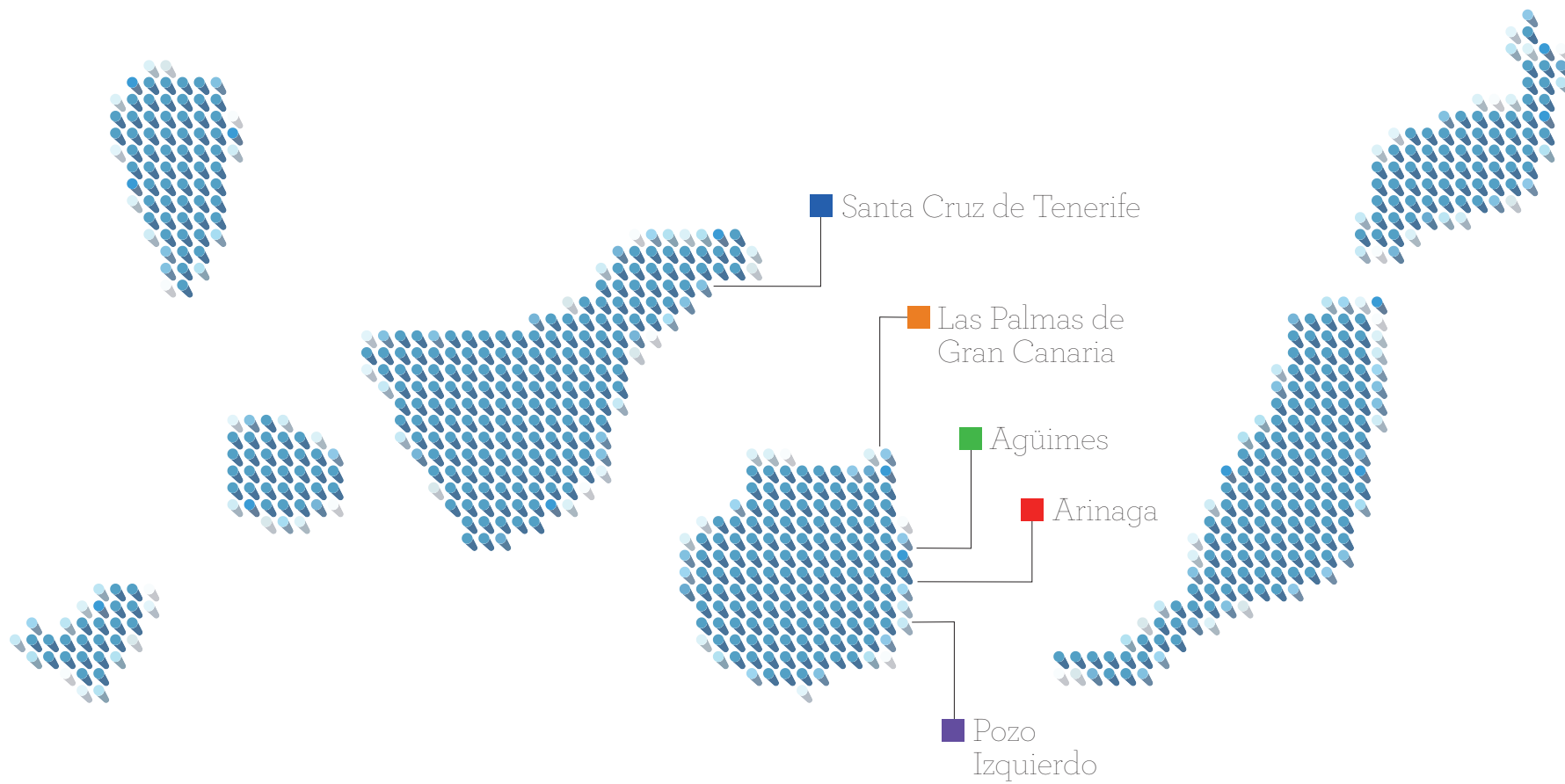
☎ (+34) 928 727 632

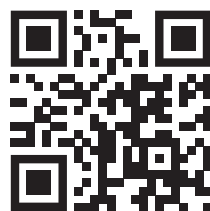
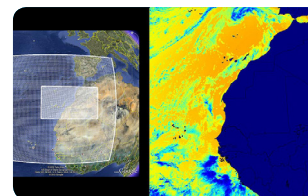
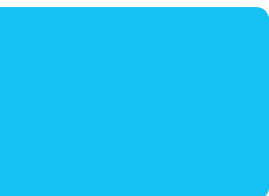
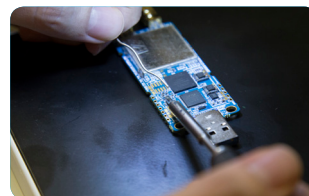
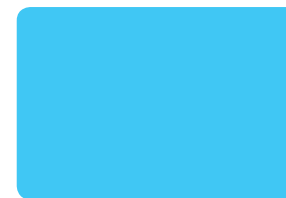
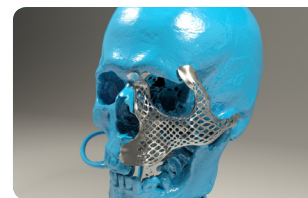
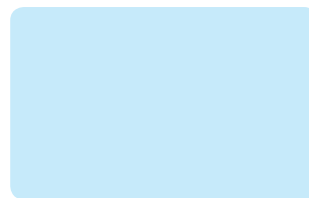
TENERIFE

➤ **Santa Cruz de Tenerife.** This houses a large part of the Innovation and Information Society departments. It offers services of Business Hosting and of Business Incubators for start-ups (UPE network). It includes services and infrastructure of R&D+I such as the Bio-mechatronic (Biomedical engineering) and Robotics laboratories.

📍 Plaza de Sixto Machado, 3. 38009 Santa Cruz de Tenerife.

☎ (+34) 922 568 900





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