INTI Instituto Nacional de Tecnología Industrial

Secretaría de Industria y Comercio
Ministerio de Economía

42th EDITION | 2024

SMEs EXPORT

Argentine technology and innovation

KNOWLEDGE ECONOMY

INSTITUTIONAL RELATIONS AND COMUNICATIONS OPERATIONAL MANAGEMENT

Institutional Relations Deputy Management

CONTENTS

Knowledge economy

Editorial

Knowledge enhances technology as a factor of production

The knowledge economy, or rather the knowledge-based economy, is more than an economic paradigm; it is a revolution that redefines the way we create value, collaborate and compete in the actual world. In the core of this transformation there are work networks, platforms where innovation, knowledge and multi- and transdisciplinary collaboration converge to promote economic and social development.

This concept covers a wide range of new materials, products, processes and services with greater added value and which are generally developed with cutting-edge technologies.

In this framework, the Knowledge Economy sub-management of the National Institute of Industrial Technology (INTI), encourages and promotes specific activities for development and innovation around the disciplines of biotechnology, micro and nanotechnology, digital transformation (Industry 4.0 and Cultural and Creative Industries) and industrial design. Each discipline was developed and incorporated into the Institution, generating platforms, technological ecosystems and work networks based on knowledge.

Information is multiplied through networks, the way to identify, create, store, transmit, transfer and use efficiently, and effectively the individual and collective knowledge of the group of INTI technicians and professionals. In this way, the networks that the Institute currently has, with federal scope, make it possible to resolve the multiplicity of technological problems and challenges of the vast and diverse Argentine industrial fabric. (An example of this is the Digital Transformation Network that includes different technological enablers, and the Industrial Designers Network, among others).

The knowledge-based economy implies and explains an expansion of the frontier of production possibilities by unlocking new opportunities and capabilities. In this sense, the Knowledge Economy Promotion Law marks an important milestone on the path towards the consolidation of this new economic era in our nation. This legislation not only recognizes the strategic importance of the knowledge-based economy, but also establishes incentives and measures to encourage its development and expansion

of activities linked to software development, audiovisual production, biotechnology, geological services, electronics and communications, nanotechnology, aerospace industry, artificial intelligence and robotics.

“In an economy where the only certainty is uncertainty, the only sure source of lasting competitive advantage is knowledge... Successful companies are those that constantly create new knowledge, disseminate it widely throughout the organization, and quickly incorporate it into new technologies and products”, (Ikujiro Nonaka).

María de los Ángeles Cappa

GRADUATE IN CHEMICAL SCIENCES

Knowledge Area Deputy Manager

Technological Development and Innovation Management

National Institute of Industrial Technology

IVEMA

Argentine innovation in biotechnology equipment

Biotechnology, innovation and precision are essential for advancement in genetic research. DNA amplification, a vital process for the analysis and manipulation of genetic material, has experienced notable development thanks to the creation of highly complex equipment. These devices, crucial in molecular biology laboratories, allow scientists to replicate DNA fragments with unprecedented speed and accuracy.

With the sanction in 2019 of the "Knowledge Economy" Law, the sector will be able to create 215,000 quality jobs and reach USD 15,000 million in exports in 2030, according to estimates by the consulting firm PwC Argentina.

With more than 40 years of experience, Ivema has established itself as a benchmark in the production and engineering of laboratory equipment in Argentina. Started as a technical service, the company has evolved to become a leader in the development of highly complex biotechnological instruments, standing out in the manufacture of thermocyclers and PCR cabinets.

Ivema products, such as thermocyclers, PCR cabinets, dry bath thermoblocks and ELISA plates, are intended for various institutions, including molecular biology research centers, veterinary diagnostic laboratories, hospitals, forensic laboratories and diagnostic centers in general.

The company seeks to strengthen its international presence in Latin America, especially with its PCR cabinets, which provide a contamination-free environment, essential for the detection of highly sensitive DNA and RNA segments. In addition, ELISA plates, which are widely used by health laboratories, are essential for diagnosing diseases such as cancer, hepatitis B and HIV, among other viral diseases.

"Ivema is the only company in Latin America that manufactures ELISA plates and PCR cabinets at significant costs. It competes on equal terms with the premium brands in the market, which drives us to strengthen our presence at the regional level", says Javier Balian, managing partner of the company.

In collaborative work, INTI and Ivema developed the BK24 Thermo Block, a device designed for the isothermal amplification of biological samples and the detection of viral diseases in both humans and animals. This innovative device was created in a record time of two months during the COVID-19 pandemic, explains Mijal Mass, head of the Microelectronic Prototyping and Printed Electronics Department of the institute's Micro and Nanoelectronics center.

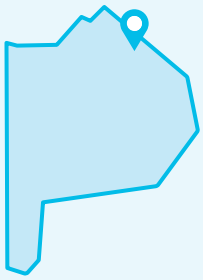
Although thermoblocks or dry baths have been marketed for years for the incubation of various samples, their use in molecular biology represents a significant contribution. Precision temperature control is essential in molecular techniques, and the BK24 Thermo Block was designed to regulate temperature with an accuracy of +/-0.1 degrees. Regarding the benefits of this new equipment, INTI specialist Mijal Mass highlighted: "Many imported equipment does not achieve this precision and lacks a heated lid, which is crucial to ensure thermal uniformity throughout the block. This Argentine development not only represents a significant technological contribution, but also strengthens the concept of technological sovereignty".

Also, the company received technical assistance from INTI in management technologies in order to comply with one of the requirements to be recognized as a knowledge economy company, within the framework of Argentine Law 27570. This legislation allows SMEs access special benefits, such as a 70% discount on tax charges, explains María Eugenia Lagier, technical director of Management Technologies at the Institute.

To be recognized as knowledge economy companies, they must comply, among other aspects, with the certification of a standard or the implementation of an improvement cycle. Along this path, work was done on the standardization of its production system and technical service processes through training, the application of the 5S tool and the generation of documentation of work procedures. In addition, Ivema was assisted in identifying the causes of failures in the final product and systematized improvement actions were implemented.

"The speed and innovation capacity of INTI was very satisfactory to us. It allowed us to approach research and development from a new perspective. Thanks to this, we were able to launch a product on the molecular medicine market that not only stands out for its affordable cost, but also for its excellent quality and performance, surpassing in many aspects more expensive equipment", says Javier Balian who adds: "With the help of INTI, we managed to reduce the costs associated with failures in the final product, achieving a stable production process and reliable, and significantly improving customer satisfaction levels.

With a solid research base and a commitment to excellence, Ivema continues to promote scientific and technological progress from Argentina and Latin America, positioning itself as a reference in the field of biotechnology.



IVEMA DESARROLLOS S.R.L.

Valentín Alsina, Buenos Aires

Manufacturing of highly complex equipment.

-Production plant: 120m²

-Annual productive capacity: 100 devices and 700,000 ELISA STRIPS

- **HS Code (NCM):**

-8543.70.99.990Z / Cabin C9

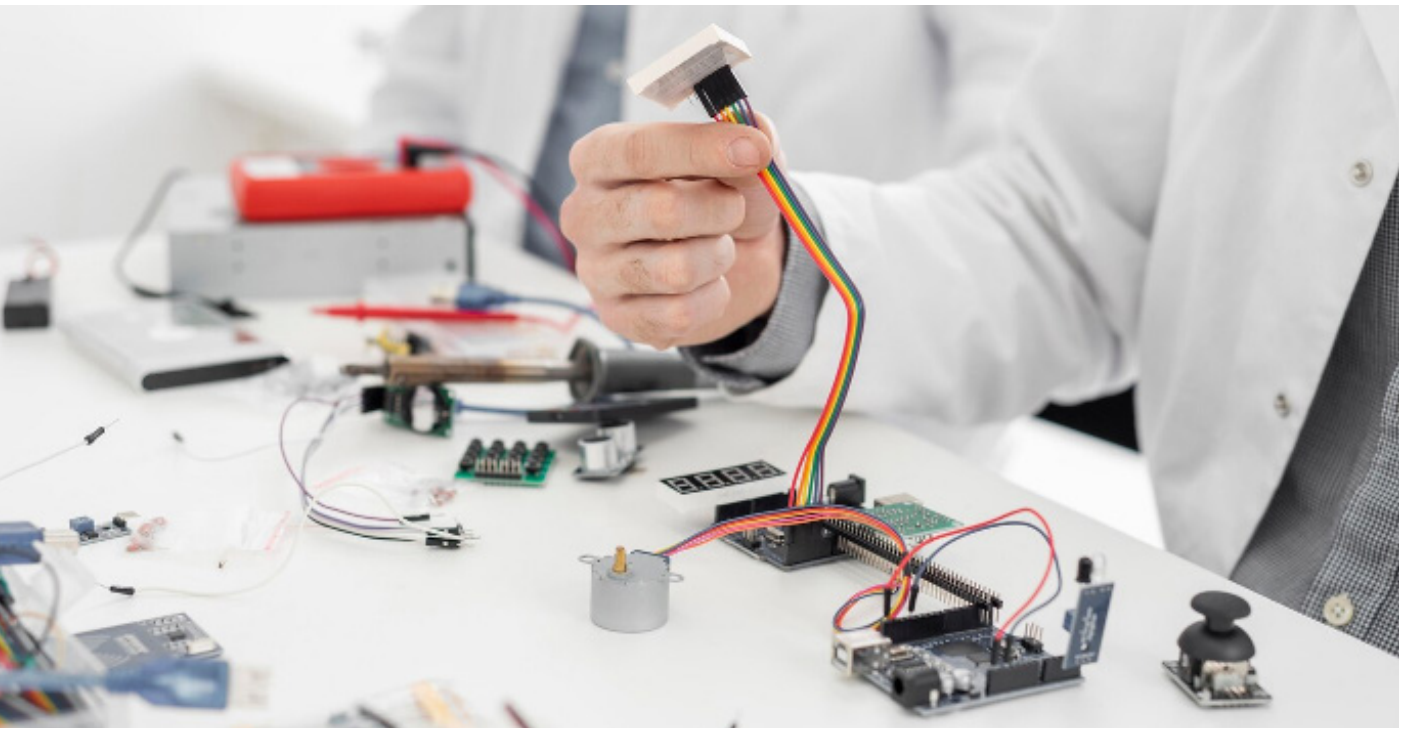
-8419.89.99.900J / Thermocyclers T18 & T21

-8419.89.99.900J / Thermoblock BK24

-3926.90.40.900C / Elisa Plates

COMPUTROL

Technology 4.0, electronics and automation for the agricultural and livestock sector



In a context where the manufacturing of electronic components and the assembly of printed circuit boards (PCB) are essential for the evolution of the industry, the Argentine company Computrol S.R.L. stands out for its capacity for innovation and its vision of the future as a key supplier of products and services for manufacturers of agricultural, livestock and road machinery at a national and international level.

From radio frequency remote controls for hydro-cranes and industrial overhead cranes, to electronic developments applied to dairy and agricultural machinery, Computrol serves markets that demand advanced and specific solutions in diverse and specialized niches.

Currently, the firm aspires to penetrate the markets of Mercosur, the United States and Europe as a designer and manufacturer of electrical and electronic controls. Its ability to respond quickly to customer needs is supported by state-of-the-art equipment, the application of automated and flexible processes, as well as a highly qualified interdisciplinary work group.

Among its most notable innovations is the **development of a fuel meter that operates without direct contact with the liquid,** essential for regions where fuels contain alcohols, such as in Argentina and Brazil. Likewise, its joystick for drag graders allows efficient control of the critical functions of road machinery, in order to improve its performance.

According to what was published by Argencon, more than 437 thousand Argentines work in knowledge economy industries.

The support of the National Institute of Industrial Technology (INTI), through its sectors specialized in industry 4.0 and electronics and computing, was crucial in the growth of this company.

Ernesto Galiano, partner of the firm, highlighted the importance of this collaboration: "The work carried out by INTI allowed us to raise the level of knowledge and think of the company as an industry 4.0 in all its areas. It represented progress in terms of innovation in developments with effective methodologies".

The Institute's assistance began with an exhaustive diagnosis aimed at evaluating the technological maturity of the company. In this sense, Alejandrina Vigna technical director of Digital Transformation of the Department of Industry 4.0 of INTI, explained that the initial diagnosis in the plant was made with the objective of evaluating the future adoption of 4.0 technology. The result of the work showed that Computrol was not only in a position to address internal projects related to this new paradigm, but also showed high potential to become a local provider of this type of technologies.

On this basis, an action plan was designed to accompany them in the incorporation of a new business unit that would add value from the 4.0 service offering. In this sense, Javier A. Jorge, from the Department of Electronics and Informatics of INTI-Córdoba, pointed out: "we accompanied the company in the implementation of improvements in the systems development processes, practical theoretical workshops were held on new technologies and tools of ABI code software, which allowed us to reduce time to market with new products".

For his part, specialist Gastón Sáez de Arregui from the INTI in Rosario, added that work was being done on the development of an electronic control unit with internet connection via GPRS and WI-FI, and Bluetooth, which allow the machinery agricultural monitor operating variables, such as relative position, average speed, fuel level, engine temperature and even provide the possibility of activating functions remotely. This system also allows the visualization of information on monitoring and control boards accessible from anywhere in the world with a high level of security and reliability.

The company obtained the Argentine Good Design Seal and the Cordoban Good Design Seal, underlining its commitment to quality and innovation in its products.

Today, Computrol is the only company nationwide that specializes in the production of instrument panels, magnetostrictive sensors and electronic control units (ECU) for the Internet of Things (IoT). Each of its components reflects the talent of Argentine engineering.

COMPUTROL S.R.L.

San Francisco Industrial Park, Córdoba

Company specialized in the design and manufacture of electronic equipment for the fields of: dairy farms, electricity, agricultural machinery and transportation.

-San Francisco Industrial Park, Córdoba

-Production plant: 1213 m^2

-Annual productive capacity: 2000 units

- **HS Code (NCM):**

-8517.62/ ECU IOT

-8708.99 / Instrument panels

-9026.10 / Fuel level sensors

ECCOSUR

Leader in innovation and medical diagnosis

From the precision of a diagnosis to the effectiveness of a treatment, the selection of medical equipment becomes an expertise for which the skill and knowledge of the professional play a crucial role. In Argentina, the company Ekosur S.A., with more than two decades of experience, is a pioneer in the manufacture and distribution of products for medical diagnosis at a national and international level.

Recognized for its constant innovation and commitment to quality, Ekosur S.A., under the trade name Eccosur, has become a benchmark in the sector, offering comprehensive solutions that include cutting-edge equipment, specialized software and exceptional services for cardiological and medical diagnosis.

Its focus is disease prevention and control, providing expert advice, training programs and a wide range of pre- and post-sales services, tailored to the specific needs of its clients.

Juan Pablo Tripodi, technical director and founding partner of the firm, highlights: “We revolutionized cardiology with an accessible holter for offices in cities far from large capitals, allowing cardiologists the possibility of providing personalized services, without the need to refer to their patients to health centers far from their surroundings”.

Currently, Argentina makes 0.4% of world exports in the sector. In turn, this increases the productivity of other industries such as: construction, textiles, manufacturing, food, automotive, commerce, agribusiness, among others.

Source: PwC Consulting.

The company, certified by the National Administration of Medicines, Food and Medical Technology (ANMAT) and TÜV Nord, and distinguished with the Country Brand, has a solid presence in Bolivia, Chile, Colombia, Costa Rica, Ecuador, Mexico, Paraguay, Peru and Uruguay. Its strategy is based on comprehensive positioning in Latin America, based on taking advantage of the homogeneity of the region's markets for sustainable growth.

With the collaboration and technical assistance of the National Institute of Industrial Technology (NTI), the company managed to develop a new model of its Holter device (HT-103P) for cardiac monitoring of patients, in which an update of the electronic technology and new functionalities were incorporated to make it more competitive in the market. Alex Lozano, director of the Micro and Nanotechnologies area of the Institute, explains that the coordination work with the company consisted of the complete redesign and development of a new device, from the hardware (electronic circuit board) and the firmware (base software to control the board), to the case, power and connectors. Thus, a new version of the holter was achieved, adapted to current needs, which was transferred to the company along with all the necessary technical documentation so that it could complete the development of the final product and validate it, according to the requirements demanded by ANMAT for its release to the market.

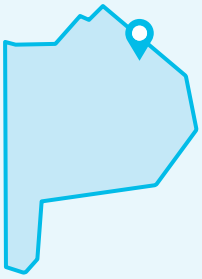
"They asked us as a requirement that the new product have lower energy consumption to be able to carry out studies longer than 48 hours, capacity to detect pacemaker pulses, standard electrode connectors, higher sampling frequency and better resolution in amplitude, Bluetooth communication and support for higher capacity SD memories", details Diego Brengi from INTI Micro and Nanotechnologies, who was part of the work team.

The new holter model received the Argentine Good Design Seal, an official distinction given to products from the national industry that stand out for their innovation, participation in sustainable local production, market positioning and design quality.

"Collaboration with INTI has meant a crucial technological and innovation leap for our company, allowing us to make substantial improvements to our products and obtain a notable competitive advantage in the national and international markets. All holters sold by Ekosur S.A. are from this new version developed together with INTI", emphasizes Tripodi, underlining the positive and transformative impact of this alliance.

Currently, Ekosur S.A. works on incorporating IoT (Internet of Things) connectivity into its devices, allowing studios to be shared in the cloud and managing the use of equipment remotely. This advance represents a significant technological leap and, consequently, a competitive improvement in local and international markets. "In addition, this will allow sharing patient studies in the cloud and managing the use of medical equipment remotely", added Lozano.

The firm's representative adds that cardiology training in the region is similar to that of Argentina and this ensures that our medical teams meet all your expectations and specific needs. In this sense, Tripodi concludes: "Unlike devices of Chinese, American or European origin, our products are perfectly aligned with the cardiological culture of Latin America. When specialists try our equipment, they immediately recognize its advantages for medical practice".



EKOSUR S.A.

Buenos Aires

Company that manufactures and distributes products for medical diagnosis.

-Production plant: 67m^2

Among its most notable products are:

Holter – HT-103 P: used in more than 60% of cardiological studies in the country, with more than ten thousand units sold in Latin America (3,000 units annually).

ECG View Resting: latest generation electrocardiograph (1000 units per year).

ECG View Stress: advanced ergometry equipment (1000 units per year).

Ambulatory Blood Pressure Meter - MP 260: automatic blood pressure monitor (1800 units annually).

- **HS Code (NCM):**

-9018.11.00 / Holter - HTR 103 P

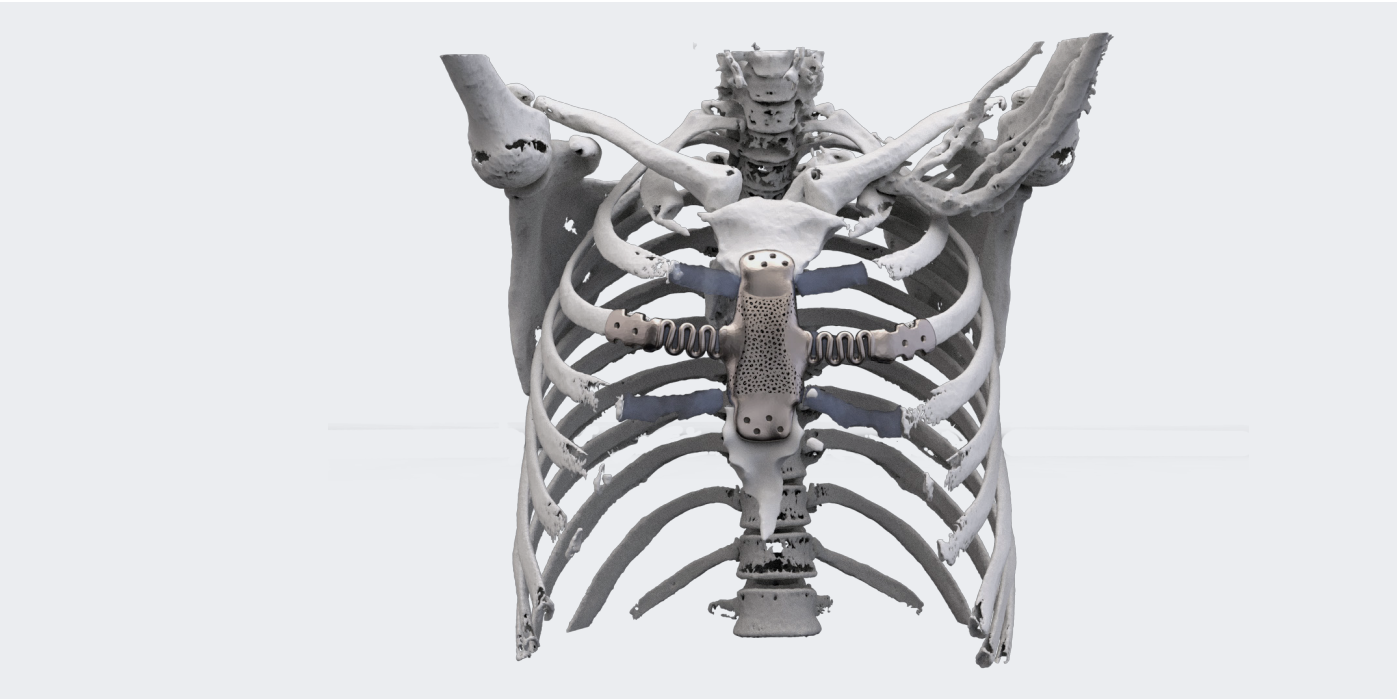
-9018.11.00 / ECG View Resting - Electrocardiograph

-9018.11.00 / ECG View Stress - Ergometry

-9018.90.92 / Ambulatory Blood Pressure Meter - MPR 260

RAOMED

Pioneers in the manufacture of custom implants



Accelerated advances in medicine have made personalization the key to offering more effective and humanized treatments. In this direction, innovation in custom implants and surgical guides through advanced 3D printing technologies not only transforms lives, but also redefines the standards of modern medicine. In Argentina, Raomed, a company based in the province of Córdoba, is an inspiring example of how technology can humanize and improve medical care.

A pioneer in 3D technologies applied to health, today the company is positioned as a leader in the design and manufacture of custom implants and surgical guides, being the first company in the country certified by the regulatory body National Administration of Medicines, Foods and Technology Medical (ANMAT), for the exclusive development of this type of products.

Raomed specializes in the manufacture of implants for neurosurgery, maxillofacial surgery, thorax, traumatology and orthopedics, while developing solutions that restore the functionality and aesthetics of patients. Its production reaches between 1000 and 1500 implants per year through 3D printing in titanium or biocompatible polymers, materials that ensure the acceptance and durability necessary for each patient.

Titanium, in addition to its excellent strength-to-weight ratio, allows for perfect integration with the patient's body, while 3D printing makes it easier for the bone to grow inside the implant, improving its integration and functionality.

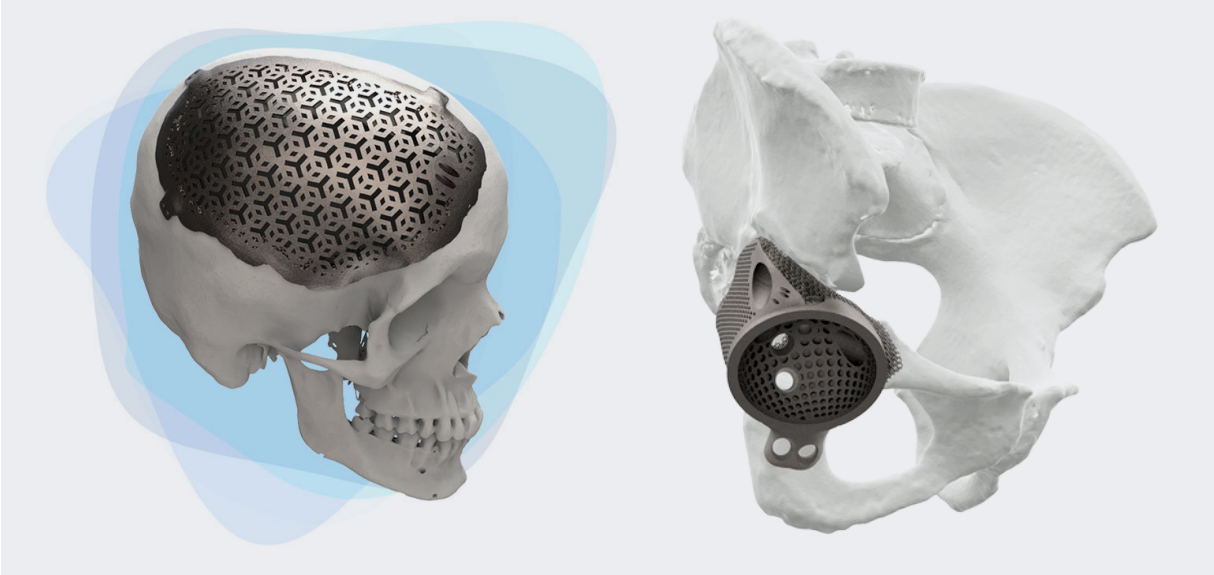
The assistance of the National Institute of Industrial Technology (INTI) in industrial tomography has been essential for Raomed. In this regard, Matias Peralta, member of the INTI equipment and component validation department, explains that the company needed to tomography its implants, but since they were small pieces, the study had to be carried out in a high-resolution micro tomograph, a very scarce in the country that the institute has. The high-resolution industrial tomography offered by the institute ensures that each piece meets the highest international standards.

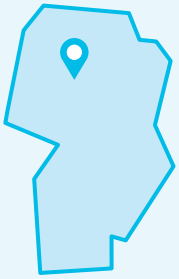
As part of the work, in addition to the study report, INTI provided the company with the files of the digitized images of the tomography and a viewer so that the client can manipulate and analyze them according to their needs. Andrés Monsalvo, engineering and production manager at Raomed, summarizes the impact of the work carried out: "The support of INTI allowed us to quantify the performance of the production processes and respond to the international quality control requirements of these unique pieces, enhancing our presence in the markets of the world".

The company already exports to Latin America, India and Europe and is currently developing alliances in new markets, such as Brazil, Mexico and Europe.

The company's goal has been to return personalization to medicine, bringing technology closer to surgeons and through offering solutions when standard methods are not enough. Santiago Olmedo, director of the company, adds: "We combine cutting-edge technology with a human and personalized approach. The real prize is the testimonies of patients who managed to change their lives thanks to Raomed's personalized implants".

Raomed's story is an inspiring example of how technology and innovation can transform people's quality of life. Its commitment to quality, precision and personalized design makes it a unique bioengineering company tailored to each person.





RAOMED

City of Córdoba, Córdoba

Company dedicated to personalized medicine and applied 3D technologies.

-Production capacity: 150 cases per month

-Production Plant: 500m^2

• HS Code (NCM):

9021.39.80 / Orthopedic articles and appliances, including medical surgical girdles and bandages and crutches; splints, splints or other fracture articles and appliances; articles and appliances for prostheses; hearing aids and other devices worn by the person themselves or implanted to compensate for a defect or disability. Others.

International Cooperation

INTI will host the 13th Ibero-American Sensors Congress, IBERSENSOR 2024, an event of great relevance in the Spanish and Portuguese-speaking scientific community. This congress will take place from October 21 to 24, 2024 at the facilities of the National Institute of Industrial Technology (INTI), in Buenos Aires - Argentina.

IBERSENSOR has established itself as an essential forum for the exchange of knowledge and the development of collaborations in the field of sensors and their applications. Since its first edition, this biennial event has demonstrated the potential and significant growth of the participating countries in this technological area. The congress will be held in person, offering attendees the opportunity to participate in oral presentations and poster sessions by national and international specialists.

In addition, participants will have the possibility of taking guided tours of the INTI laboratories and other national R&D&I institutions. The conference program covers a wide range of current topics in the field of sensors, including: electrochemical sensors, biosensors, acoustic wave sensors, optochemical sensors, physical sensors, chemical sensors, sensor design and technology, among others.

For more information about the congress and the registration process, visit the official IBERSENSOR 2024 website

https://www.argentina.gob.ar/inti/ibersensor-2024

INTI

Instituto
Nacional
de Tecnología
Industrial

INTI

Secretaría de Industria y Comercio
Ministerio de Economía

E-mail: boletin_pymesexportan@inti.gob.ar

INSTITUTIONAL RELATIONS AND COMUNICATIONS OPERATIONAL MANAGEMENT

Institutional Relations Deputy Management

www.inti.gob.ar