

# 創 孵 世 代

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I<sup>3</sup> GENERATION = INCUBATION + INNOVATION + INVENTION



INNOVATION AND ENTREPRENEURSHIP COMPETITION

MACAO

for Technology Enterprises from Brazil and Portugal

2021

SET SAIL FOR THE  
GREATER BAY AREA:

THE *TOP 5* AWARDS  
WERE REVEALED





# A Portuguese enterprise engaging in green technology for marine development wins the first prize: A new sustainability-themed game starts



Global human health is being threatened by two interrelated factors: diseases and the deteriorating environment caused by pollution. In the early summer of this year, the European Union adopted its first climate change law that obliges its member states to cut carbon emissions, minimize waste, and reduce pollution. The new rules of the game have made many corporate giants withdraw investment in highly polluting projects and turn to innovative green energy technology.



The “Innovation and Entrepreneurship Competition (Macao) for Technology Enterprises from Brazil and Portugal” was recently organized by the Economic and Technological Development Bureau and implemented by Parafuturo de Macau Investment and Development Limited and the Macao Young Entrepreneur Incubation Centre. The competition aims to leverage Macao’s role as a platform between China and Portuguese-speaking countries and introduce promising innovative high-tech enterprises from Portuguese-speaking countries to the Guangdong-Hong Kong-Macao Greater Bay Area. After selection by the organizer,

a total of 20 teams, nominated by eight business incubators and higher education institutions in Portugal and Brazil, entered the final. Some are medical technology enterprises that have been very popular in Portugal, and the others are almost all green technology enterprises. This has much to do with the 2050 climate neutrality objective being one of the priorities for the Portuguese Presidency of the Council of the European Union<sup>①</sup>. In the end, an innovative high-tech enterprise specializing in waste recycling and pollution reduction won the Champion, proving that sustainable development ensures international competitiveness.



① To meet the global carbon reduction target, the report “Net Zero by 2050: A Roadmap for the Global Energy Sector”, released by the International Energy Agency (IEA) in May, set forth the goal of reaching net-zero greenhouse gas emissions by 2050.



## Great potential with cutting-edge technology targeting water pollution market is demonstrated

At present, China has invested more than RMB2 trillion in the prevention and treatment of water pollution. Biosolvit, an innovative high-tech company in Portugal, has a sharp eye for this gap in the market and has seized the opportunity.

Bioblue Natural Absorber, Biosolvit's core product, is produced by transforming natural waste materials into a type of intermediate substance that can efficiently absorb and recover crude oil through technology. According to the founder Guilherme Queiroz, the raw material of the Bioblue Natural Absorber comes from palm trees. Only 3% of the tree can be used to produce the heart of palm, which is a food ingredient of high nutritional value, while the other 97% will be inevitably discarded. The team from Biosolvit has made use of the materials from the remaining 97% and developed the product. Compared to polyurethane, the commonly used material nowadays, their product is made from natural materials and can reach 200% efficiency:

"According to the test, one kilogram of polyurethane can absorb 12 kilograms of oil in 30 minutes, while one kilogram of the Bioblue Natural Absorber can absorb up to 22 kilograms of oil in just 15 minutes."

Meanwhile, the product also satisfies the demand for oil recovery and reuse. 95% of the oil recovered through the Bioblue Natural Absorber can be refined. Guilherme said that Biosolvit had now entered the Series A round and had raised a total of about MOP40



million at the moment. In the future, it is expected that the product can tackle other types of water pollution. Statistics show that in the past five decades, up to six million tons of oil were accidentally spilled into the sea globally, which brought about severe ocean pollution. With the capability of solving such a thorny ecological problem in the world, the product has undoubtedly won the admiration of judges and the Champion in the competition.

## Medical technology shows a promising prospect and evident competitive edge in the market



Leveraging the advantages of the medical industry in Portugal, NURISE and RYAPURTECH, the two Portuguese start-ups, were the First Runner-up and Second Runner-up in the competition respectively. At present, the radiation therapy system developed by NURISE is the one and only system that provides automated radiation therapy with real-time dose tracking. It aims to reduce the occurrence of side effects on patients from radiation therapy for cancer and improve the effectiveness of the treatment. The company has, so far, raised about MOP30 million in the Series A round.

RYAPURTECH has used its patented technology to extract from egg yolk the Immunoglobulin Y (IgY) with a purity of over 98% and a yield of over 80%. The company is now developing a specific medicine for methicillin-resistant Staphylococcus aureus (MRSA) in a bid to provide a solution to tackle antimicrobial resistance (AMR) at a competitive price. The project



has received an investment of around MOP15 million in total by now.

In Brazil, the smart medical industry has entered a rapid development phase. The participating projects, BIOO and Pocket Clinic, have won the Largest Potential for Development in the Greater Bay Area Award and the Largest Potential for Transfer of Technological Value Award respectively. Facilitating machine learning through "AI+ cloud computing", BIOO allows users to rapidly detect and diagnose diabetic foot complications at a low cost. A seed round for the project is underway. Turning to Pocket Clinic, its injector, which is small in size and features an ultra-fine painless needle with artificial intelligence and micro-electro-mechanical systems, can help adjust the dose intelligently to perform different forms of administration. The project is now in a seed round and has raised about MOP1.6 million so far.

## The judges' view: Understanding the Chinese market is the key

Aglaia Kong, Founder of Guangdong LeapFive Technology Co., Ltd., was the Chairman of the panel of judges of the competition. Based on her years of work experience in Silicon Valley and entrepreneurial experience after returning to China, she pointed out that the biggest difference between domestic and overseas innovative high-tech industries was the industry philosophy. "Overseas innovative high-tech enterprises focus on technological innovation, while their counterparts in mainland China focus on making profits," she said. Such difference is reflected in the development process of innovative high-tech enterprises. As Kong put it, "Overseas enterprises will first ensure that the technology is applicable and then consider how to implement the technology and put it into production, whether the price is competitive enough for the public or not, etc. On the contrary, their

counterparts in mainland China will first think about how to make a profit."

It is hard to tell which philosophy is better for Kong. When effectively combined, the two will present highly effective opportunities and impetus for innovation. Kong suggested that Macao should assume the role of a precise connector. It should provide services for both sides in areas such as branding and language, promote bilateral business cooperation, make related technologies more acceptable to mainland consumers, and assist science and technology innovation projects from mainland China in entering the international market through the Macao platform.

Wen Feng, another competition judge and General Manager of Zhuhai Technology Venture Capital, noticed a distinct "European or global angle" in the projects from Portugal and Brazil. He remarked, "Their business ideas are closely related to the region where they are located. For example, Portugal's great attention to carbon neutrality, ecological conservation, and biomedicine is associated with European economic trends."

When it comes to the possibility of settling in the Greater Bay Area, Wen said that the advantages of these projects lay in their breakthroughs in basic technology. Their understanding of application scenarios resembles China's projects, which is the basis for them to settle in China. Moreover, he believed that China had provided much greater support for original technologies than Portuguese-speaking countries in terms of capital and policies. He encouraged these projects to seize opportunities in the future and take part in exchanges in China to obtain more information, in an effort to deploy marketing strategies, research and development planning, and more for future settlement and development in China.







巴葡科技企業(澳門)創新創業大賽

INNOVATION AND ENTREPRENEURSHIP COMPETITION (MACAO)  
for Technology Enterprises from Brazil and Portugal

2021 10.29

科技創新

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SPRINGBOARD TO  
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承辦單位  
Implementer

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The opening ceremony for the competition was held at 10am on 29 October in the Banyan Rooms of the Banyan Tree Macau. The ceremony was attended by Tai Kin Ip, Director of the Economic and Technological Development Bureau; Lau Wai Meng, President of the Macao Trade and Investment Promotion Institute; Tai O, Deputy Director of the Zhuhai Science and Technology Innovation Bureau; Teresa Mok, Coordinator of the Support Office of the Permanent Secretariat of Forum for Economic and Trade Co-operation between China and Portuguese-speaking Countries (Macao); Chao Weng Hou, Member of the Executive Council of the Macao Special Administrative Region; Xu Jian, Vice Rector of the University of Macau; Lam Chi Seng, Senior Vice President of Public Relations of Galaxy Entertainment Group; So Yuk Chow, Vice President of the Macau University of Science and Technology; and Ieong Chi Kuong, Managing Director of Bank of China Macau Branch.



# Tai Kin Ip:

The competition assists Portuguese-speaking countries in seeking technological innovation cooperation with mainland China



The first Innovation and Entrepreneurship Competition (Macao) for Technology Enterprises from Brazil and Portugal was held by the Economic and Technological Development Bureau (DSED, from the Portuguese acronym). Tai Kin Ip, DSED Director, said that the authority aimed to promote Macao as a platform for scientific and technological innovation projects from Portuguese-speaking countries to enter the market of the Greater Bay Area and mainland China, to deepen scientific and technological cooperation between China and Portuguese-speaking

countries, and to give full play to Macao's role as an intersection in China's "dual circulation" pattern.

Tai Kin Ip, DSED Director, remarked that the Ministry of Science and Technology of the People's Republic of China had always been supportive of Macao's endeavors in the industry-university-research cooperation in science and technology. At the meeting held by the Mainland and Macao Science and Technology Cooperation Committee in the middle of this year, the Ministry of Science and

Technology of the PRC suggested establishing a center for scientific and technological exchanges and achievement transformation between China and Portuguese-speaking countries. In active response to the suggestion, the Macao SAR government carried out research and explored how to strengthen scientific and technological exchanges and achievement transformation between China and Portuguese-speaking countries. In view of this, the authority attempted for the first time to organize a scientific and technological innovation competition oriented towards Portuguese-speaking countries.

As an exchange platform between China and Portuguese-speaking countries, Macao has a solid foundation for cooperation and has played a positive role as a bridge over the years. Macao hopes to deepen exchanges and cooperation in science and technology, and enhance the feasibility of establishing a center for scientific and technological exchanges and achievement transformation between China and Portuguese-speaking countries through the event. Moreover, the competition aims to provide a platform for innovative high-tech enterprises from Portuguese-speaking countries to gain access to the Greater Bay Area with their technologies via Macao



and hence conduct business matching in the Greater Bay Area market.

## Competition follow-up

A total of 20 innovative high-tech enterprises from Brazil and Portugal participated in the competition, bringing projects in the area of artificial intelligence, big health, big data, new materials, and so on. Some of the projects have already received funding, which indicates that the technologies have been recognized by the market. The competition is expected to further deepen the cooperation in science and technology between China and Portuguese-speaking countries, in order to lay a sounder foundation for future cooperation. After the competition, award-winning teams will receive better support for the matching with higher education institutions, financial institutions, and business incubators in the Greater Bay Area. It is also hoped that the innovative high-tech enterprises from Portuguese-speaking countries will continuously make good use of Macao's role as a platform between China and Portuguese-speaking countries to explore and expand the huge market of mainland China.

Affected by the pandemic, the competition was held online. Provided that the pandemic subsides in the future, we may invite the winning teams to Macao to learn more about Macao as a platform between China and Portuguese-speaking countries and to connect with China's internal circulation, thus giving full play to Macao's role as an intersection in the country's dual circulation pattern.



# Award winning projects

## Champion

Biosolvit



Sector: New Materials, Environmental Protection

Biosolvit is a Portuguese biotechnology company that developed the Bioblue Natural Absorber. The company uses discarded biomass as raw material to absorb petroleum derivatives on land or at sea, reducing the risk of contamination. The organic solution allows the reuse of waste.

## First Runner-up

NURISE



Sector: Big Health, Medical application

NURISE is a Portuguese start-up aiming to drive the next-generation of radiotherapy, bringing real-time dose monitoring and truly adaptive radiotherapy. The NU-RISE system is the first and only system for automated therapy control and adjustment, translating into more effective therapy and minimizing the side effects caused by therapy.

## Second Runner-up

RYAPURTECH



Sector: Big Health, Medical application

RYAPURTECH is a Portuguese start-up. It develops and produces a patented technique to highly purify (>98% purity and >80% yield) IgY antibodies from egg yolk, which can become a cost-effective solution to tackle antimicrobial resistance (AMR). Ryapurtech is now developing the resistant bacteria methicillin-resistant Staphylococcus aureus (MRSA) as a more cost-efficient solution for AMR.

## Largest Potential for Development in the Greater Bay Area Award

BIOO



Sector: Big Health, Medical application

More than 100 million people in China suffer from diabetes, and related diabetic foot ulcers can be prevented through early diagnosis. The Brazilian company BIOO, focusing on reducing the occurrence of diabetic foot complications, uses "AI + cloud computing" technology for machine learning to help users find and judge diabetic foot problems cheaply and quickly.

## Largest Potential for Transfer of Technological Value Award

Clinic



Sector: Big Health, Medical Devices

Pocket Clinic is a Med-Tech start-up developing a painless and smart injector controlled by a smartphone. The injector using Microelectromechanical System technology is small in size, and high in dosage accuracy. The needle of the injector is extremely thin and painless, and can be connected to different containers to meet a variety of drug delivery methods. Based on cloud computing and artificial intelligence solutions, the injection dose can be adjusted to optimize the treatment plan.

# Projects introduction

Casa em Movimento



Sector: Energy, Environmental Protection

Casa em Movimento is a Portuguese firm. It aims to provide access to a new concept of living architecture: innovative, dynamic and sustainable. Its technology allows the main volume of houses to rotate and their roofs to tilt, maximizing the amount of solar energy that can be harvested for indoor lighting, energy and car charging.

NILG.AI



Sector: AI, Data Analysis

NILG.AI aims to unlock business capabilities by Data Intelligence - using AI to help companies to make informed decisions and to promote efficient opportunities handling. NILG.AI combines the knowledge from a team with experience in a wide range of industries including Machine Learning, Computer Vision, Natural Language Processing, among others.

Live Electric Tours



Sector: Tourism, Electric Cars

Live Electric Tours gives novel sustainable way of city visiting. This project provides 100% electric free-park cars equipped with GPS guide, free WIFI and live camera that allows you to share your experiences in social media at Live. In response to the COVID-19, it launches another app LetzGo, which gives you the best travel experiences. You can avoid the long queue for tickets, navigate the Best Road Trips and so on.



## SCUBIC



Sector : Energy, Environmental Protection

SCUBIC is a Portuguese company that develops smart water technology. It produces an intelligent platform for the real-time management of water supply networks. It optimizes pumping operations, amounting to more than 40% of operating costs, and guarantees reductions of up to 20% in energy bills.

## M-Health



Sector : Big Health, Medical Devices

M-Health is a Portuguese start-up developing a complete digital product that monitors life signs and analyses data collected through a real-time wearable sensing solutions (bracelets). It is able to gather individual vital signs and geo-positioning , and to monitor physiological data through an analyzer system to improve emergency response and safety of users.

## Corium Biotech



Sector: New Materials, Medical

Corium Biotech is a Portuguese R&D company dedicated to the bioproduction of exotic leather that can meet current leather market needs for performant materials that respects both the environment and the animal wellbeing. The innovative material developed can bring an effective solution to the modernization of leather industry and the ecological transition.

## Asel Tech



Sector: Energy, Environmental Protection

Asel-Tech is a Brazilian R&D company specializing in providing products and services in the area of leak detection, with focus on the petrochemical, transportation, and automation of pipelines. Its patented technology using industry 4.0 features (AI, IoT, ML) can provide a real-time leak detection and location system for O&G pipelines.

## Bandora



Sector : Environmental Protection, Energy Saving, Smart Building Management

Bandora provides a solution for buildings O&M by using Machine Learning algorithms, in order to predict energy consumption, indoor temperature, level of comfort, occupancy, malfunctions, etc. The solution can be used to simplify building management, reduce the number of required FTEs, perform predictive maintenance and reduce energy consumption.

## OrientaMED



Sector : Big Health, Medical Devices

OrientaMED is a Brazilian start-up that has developed a novel and patented medical technology for the identifying and monitoring diseases through exhaled breath analysis. The device is similar to a breathalyzer. Through analysing the gas molecules in the exhaled breath, such as acetone, the device can measure the level of glucose in the blood. The OrientaMED device has potential to support different diseases, such as diabetes and asthma .

## GermSure Biosafe e Consultoria



Sector : Big Health, Medical Devices

GermSure is a Brazilian healthcare start-up focusing in the areas of biosafety and scientific consultancy. It provides qualified professional consulting service in two pillars: taking quick testing inside companies and thus mitigate the chance of COVID outbreaks among employees, and supporting diagnostic kit manufacturers in the final phase of final product development and in the positioning of the product in the Brazilian market.

## HiLab



Sector : Big Health, Medical Devices

HiLab is a Brazilian company provides remote lab service, with the platform and services based on AI and the IoT. HiLab can perform remote exams, together with digital report signed by healthcare professionals within an hour.

## Shaped



Sector : Big Health, Medical Devices

Shaped is a Brazilian start-up developing digital solution for body composition analysis. Through body images, the system can provide precise assessment results by using the powerful AI technology.

## Go Live Tech



Sector : Data Analysis

Go Live Tech is a Brazilian start-up specializing in data analysis and offering solutions for business process & tech consulting and training. The company develops and provides highly specialized technology consultancy in process optimization through automation, RPA-robotization, artificial intelligence and business intelligence.

## Selfpix



Sector : AI, Wholesaling/Retailing/Supply Chain Management

Selfpix is a Brazilian start-up in smart retail sector. The company develops a platform based on survey methodology and AI, computer vision, neural network and robotic expertise technology. Combined with statistical figures, the system can provide the best executable solution for market analysis and remote management.

## Jovens Genios



Sector : Education Application

The Brazilian company Jovens Gênios is an online education platform. It uses artificial intelligence to develop personalized learning plans for students and game-based learning models to increase students' interest. At the same time, it helps teachers to save time in creating teaching activities, and to obtain complete learning data to evaluate students' learning effectiveness.



Eight incubators and institutions of higher education from Portugal and Brazil were invited by the organizer to promote the competition locally.

After selection, 20 outstanding projects were recommended to take part in the final.

In addition to receiving certificates of merit and prizes, winners will also have the opportunities offered by the SAR Government to visit the Greater Bay Area and launch their projects there when the COVID-19 pandemic subsides.

01

Recommended by  
the local entities

02

Reviewed  
in Macao

03

Implemented in the  
Greater Bay Area



The highlights of  
the competition

On the day of the final, the selected teams presented their projects online, and replied to the questions from the judges which are composed of investors, financial institutions, scholars in scientific research, tech entrepreneurs, etc. Eventually, winners of the five awards were selected.



Prizes and Awards

• **Champion**  
MOP100,000 and a  
certificate of merit

• **Second Runner-up**  
MOP50,000 and a  
certificate of merit

• **First Runner-up**  
MOP80,000 and a  
certificate of merit

• **Largest Potential for Development in  
the Greater Bay Area Award**  
MOP30,000 and a certificate of merit

• **Largest Potential for Transfer of  
Technological Value Award**  
MOP30,000 and a certificate of merit



Full support from eight incubators and institutions of  
higher education from Portugal and Brazil



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A distinguished  
panel of judges



Tai Kin Ip

Director of The Economic and  
Technological Development  
Bureau (DSED)



Aglaia Kong

Founder of LeapFive  
Technology Co. Ltd



Wen Feng

General Manager of Zhuhai  
Technology Venture Capital



Dr. Kuan Wong

Vice Chairman of  
WI Harper Group



Prof. Zhu Yi  
Zhun

Dean of School of Pharmacy  
of The Macau University of  
Science and Technology



Prof Simon  
Lee Ming

Distinguished Professor of  
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Ultramarino S.A.



Carlos Wong

Venture Partner of MindWorks

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Direcção dos Serviços de Economia e  
Desenvolvimento Tecnológico

Implementer

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Centro de Incubação de Negócios para os Jovens de Macau  
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## 澳門青年創業孵化中心

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### Services of the MYEIC

- Consultancy services such as legal, tax, and accounting
- Co-working Space
- Roadshow promotion/investment matchmaking
- Experience sharing seminars
- Interaction and cooperation between young entrepreneurs in China and Portuguese-speaking countries
- Referring one-stop services for establishing a company
- Guidance by experts and consultants
- Training courses on innovation and entrepreneurship
- Professional Consultancy Services Exchange Program