



CENTRO DE INOVAÇÃO BRASIL - EUROPA

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# ENRICH MONTHLY



**MONTHLY BUSINESS & INNOVATION  
NEWS COMPILED BY ENRICH IN BRAZIL**



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## ENRICH in Brazil is Hiring



- Executive Manager /  
Managing Director
- Administrative &  
Financial Officer

## ENRICH Launches its New Website



## Study on the Competitiveness of Brazilian States



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# ENRICH

EUROPEAN NETWORK OF  
RESEARCH AND INNOVATION  
CENTRES AND HUBS, **BRAZIL**

CENTRO DE INOVAÇÃO BRASIL - EUROPA

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# EDITORIAL

## CHRISTMAS EDITION

Dear Reader,

a warm welcome and thank you for your time and interest in our twelfth edition of ENRICH Monthly in 2020.

**We wish you a Merry Christmas and a Happy New Year! Let all your wishes come true and stay healthy in the coming year.**

In 2021, ENRICH in Brazil's scope of work will be expanding into the LAC. Many new members will enrich our network.

Recently, we have **launched our [new website](#)**. **Make sure to update your bookmarks** on your search engines and stay tuned. We post about various EU and Brazilian news, funding opportunities and very useful workshops & training programmes for those who are interested in international partnerships, funding opportunities, and matchmaking in the areas of STI and entrepreneurship.

For the coming year, our ENRICH Centre is looking for two people to hire for the following positions:

- Executive Manager / Managing Director (for more information [click here](#))
- Administrative & Financial Officer (for more information [click here](#))

The application deadline is 18 December 2020!

**The year 2020 has been a very tough year for all nations around the globe.** Nevertheless, the year is expected to draw to a close on a good note. Numerous scientists and research and development institutes have been able to develop in the shortest time various tools and methods that contributed in the fight against the COVID-

19. Several multinational firms have developed vaccines within a record time. ENRICH in Brazil's network members also launched dozens of initiatives from the beginning of the pandemic. You can read about these initiatives [here](#) and more up-to-date actions on our members respective websites .

Those who are interested in **finding solutions and answers to the global pandemic of COVID-19 should listen to the 10<sup>th</sup> episode of the ENRICH Innovation Station podcast**. The episode 11 discusses about the Ocean Science Diplomacy, supporting International Cooperation in Research and Innovation, also highlighting the **All-Atlantic Research Alliance**. This podcast is a collaboration between ENRICH in Brazil and CONFAP. The ENRICH Innovation Station is available to users on the [Spotify](#) platform and on the YouTube channels of [CONFAP](#) and [ENRICH in Brazil](#).

For our Success Story column, we have interviewed Nina Fernández, who is an **International Project Officer responsible for the best management of the EU grants** that the Foundation for Scientific and Technological Development in Health (Fiotec) of the Oswaldo Cruz Foundation (Fiocruz) holds. Ms Fernández shared insights of her daily work routine and provided valuable suggestions on how to enforce the STI and R&D relationship between the EU and Brazil.

Pleasant reading!

ENRICH in Brazil Team

# LATEST NEWS

## BRAZIL AND

## EUROPEAN UNION

### European Commission's Horizon Results Platform

Have you already visited the Horizon Results Platform? It is the central pillar of the EC-funded (FP7-H2020) research results “exploitation ecosystem”. Horizon 2020 or FP7 grant recipients can publish their results and anyone, a policy-maker, an investor, an entrepreneur, a researcher, or a citizen, who is interested in learning the results can view and get in contact with the owners! → [EC Horizon Results Platform](#)

### One of the largest Latin American R&D centers in Telecommunications and IT joins the ENRICH Network

The Research and Development Center in Telecommunications (CPQD) and one of the largest Latin American R&D centers in Telecommunications and IT, located in Campinas, São Paulo, Brazil, joined the ENRICH in Brazil. This was an important step for its international cooperation strategy to accelerate innovation. CPQD has operated as a contractor for institutions and enterprises in a wide range of fields: telecommunications, finance, energy, industrial, corporate and public administration.

For Paulo Curado, director of Innovation at CPQD, networking is essential to foster cooperation that results in technological advances. “Our joining the network of institutions that make up ENRICH is another step towards leveraging strategic projects that bring progress and well-being to our society”, commented Curado. → [CPQD](#)

### Pix goes live: updated numbers on the new instant payment method in Brazil

After much anticipation, Pix – Brazil’s instant payments platform developed by the Central Bank of Brazil – has gone live for the entire Brazilian population. The new payment method allows immediate money transfer, 24 hours a day, 7 days a week, including weekends and holidays. By the 3<sup>rd</sup> of December, the Central Bank of Brazil had registered over 100 million Pix keys. Now, 60% of Brazilians already prefer Pix over TED (Express Wire Transfer) and DOCs (Credit Transfer Document), according to a research carried out by C6 Bank and IBOPEdtm. Further, 91% already know about Pix and find the new payment method safe. → [The Paypers](#)

### Hydro signs MoUs for renewable power projects in Brazil

Hydro, a Norwegian aluminum and renewable energy company, headquartered in Oslo, has signed two Memorandums of Understanding (MoUs) with the aim to develop two renewable power projects in Brazil. Renewable energy is an important step towards a more sustainable future, and it is a key element in Hydro’s strategic agenda. These agreements are an important step for Hydro’s newly established Renewable Growth unit, which targets to offer competitive renewable power to Hydro’s industrial assets by taking equity and operator positions in wind, solar and hydropower projects in Brazil and the Nordics. → [Aluminum Today](#)

### Industrial waste is reused to produce alternatives to plastic

In Brazil, researchers at São Paulo State University (UNESP) in Ilha Solteira have developed a film that can replace plastic in food packaging. The film is made from hydroxypropyl methylcellulose (HPMC) and bacterial cellulose scraps left over from industrial processing. Both raw materials are sustainable. They are combined to produce a biodegradable film of bacterial cellulose nanocrystals and HPMC. → [FAPESP](#)

## LATEST NEWS

### BRAZIL AND

### EUROPEAN UNION

### Submarine Cable Linking Brazil to Europe is Anchored in Fortaleza

Brazil will have another high-speed internet connection point to Europe. An underwater fiber optic cable will connect the cities of Fortaleza, in Ceará state, to Sines, in Portugal, and will allow for 72 terabits per second data traffic and 60 milliseconds latency.

The anchoring of the cable occurred on Monday, December 14th, at Futuro Beach, and the project is expected to be completed by mid-2021. According to the Ministry of Communications, the cable will still extend to points in Rio de Janeiro and São Paulo, in addition to connections in Africa and others. → [Rio Times Online](#)

### The Brazilian Chamber of Deputies approves project establishing 'Legal Framework for Startups'

On December 14<sup>th</sup>, the Brazilian Chamber of Deputies approved the bill to encourage startups, technology-based companies, with an innovative profile and in an initial stage of operation. The text goes to the Senate. Named the “Legal Framework for Startups”, the project defines the set of rules for the operation of the sector. Among other points, the text sets rules for capital contributions by individuals and companies and allows the participation of these companies in public tenders. → [G1](#)

### EU-Mercosur statement on Sustainable Development at EU27-LAC Informal Ministerial Meeting

On the occasion of the EU27-LAC Informal Ministerial Meeting in Berlin on December 14<sup>th</sup>, the Executive Vice-President (EVP) of the Commission and Commissioner for Trade, Mr Dombrovskis, the High Representative /Vice President (HRVP) of the Commission, Mr Borrell, and the Ministers of Argentina, Brazil, Paraguay and Uruguay, discussed a way forward for the ratification and entry into force of the EU-Mercosur Agreement. They expressed their conviction that the Agreement should be implemented in such a way so as to provide benefits to both sides in the economic, social and environmental dimensions of sustainable development. → [EC](#)





# SCHOLARSHIPS

## FUNDING

### ANNOUNCEMENTS

## PUBLIC CALLS

### Call for Joint German-Brazilian Bioeconomy Projects

Funding of research, development and innovation projects to expand the bioeconomy in alliances of German and Brazilian partners. Project-related expenses by universities, research and scientific institutions and comparable institutions can be funded up to 100%.

Research area: Industrial use of renewable raw materials with a focus on the development of optimized products and processes based on crops, residues or existing bio-based value chains

Duration of the projects to be funded: up to 3 years

The national bioeconomy strategy of the federal government was published in January 2020 with the aim of changing from an economy based predominantly on fossil raw materials to an economy based on natural material cycle area based on fossil raw materials towards a natural material cycle area based on fossil fuels

The funding is part of a joint funding initiative of the Federal Ministry of Education and Research (BMBF) and the Federal Ministry of Food and Agriculture (BMEL). On the Brazilian side, the project is supported in parallel by FINEP (Funding Authority for Studies and Projects). → [Bioeconomy International](#)

**Deadline: 19.03.2021**

### 31. CORNET Call for Proposals

The 29th and the 30th Call for Proposals in this year have been very remarkable. In total 59 proposals were received. In comparison to the last years, the number of proposals is above average. This reflects CORNET's ongoing growth of the network and the high international interest in CORNET – in total eleven different countries/regions participated. In addition to that, also eleven proposals from the 29th call are already supported by CORNET – more proposals are following in near future!

If you are interested in submitting proposals, 2021 offers many possibilities for this as well. → [CORNET](#)

### Save the following dates:

- **31. Call:** 10.01.2021 – 31.03.2021
- **32. Call:** Mid of 2021 – 29.09.2021



# UNICAMP STUDY TARGET: IDENTIFYING MORE PROMISING RENEWABLE CHEMICAL PRODUCTS FOR THE BRAZILIAN ECONOMY

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“Biochemicals in Brazil: a market assessment of five strategic product categories” is the study funded by ENRICH in Brazil and developed by the Department of Scientific and Technological Policy (DPCT) of UNICAMP (State University of Campinas).

The research identified and analyzed in depth the most promising renewable chemicals for the Brazilian economy in the coming years, identifying that Brazil has great potential for the development of five categories of renewable chemicals: cosmetics and personal care products; sweeteners; nanocellulose; bioplastics and biochemical platforms.

Conducted by researchers Sérgio Queiroz, Guilherme de Oliveira Marques and Nicholas Vonortas, from UNICAMP - the initiative collected, systematized and analyzed information on consumption and production of biochemicals in public databases, such as the Annual Industrial Survey (PIA) of the Brazilian Institute of Geography and Statistics (IBGE), in addition to technical reports, scientific articles and patents. The study also featured interviews with representatives of the renewable chemicals sector in Brazil and was inspired

by previous studies by the JRC - Joint Research Center, the European Union's science and technology institute.

The survey appears in the context of the high capacity of Brazilian production, the high demand in the world and the main competences of the country in terms of innovation, for each of the categories of biochemists. The growth of the biochemical industry, based on environmentally sustainable technologies for the creation of new products, was one of the main motivators of the research, also motivated by the opportunities for international collaboration in the sector. “Our goal, as funders and supporters of research, is to collaborate to foster opportunities for collaboration between Brazil and Europe, in the development of activities related to science, technology and innovation, and in the strengthening of Bioeconomics, and renewable biochemists, fundamental for a responsible and sustainable future”, says Filipe Cassapo, Manager of the SENAI Innovation Institute in Electrochemistry, the President of ENRICH in Brazil Association and the Director at the National Association of Research and Development of Innovative Companies (ANPEI) in Brazil. →

## Opportunities and challenges

In addition to the growing worldwide interest in products developed from renewable sources, biotechnology in general and chemicals in particular represent one of the areas with the greatest potential for collaboration between Brazil and the European Union. This finding is also corroborated by the European Project INCOBRA, which aimed to foster research and innovation projects (completed in 2018).

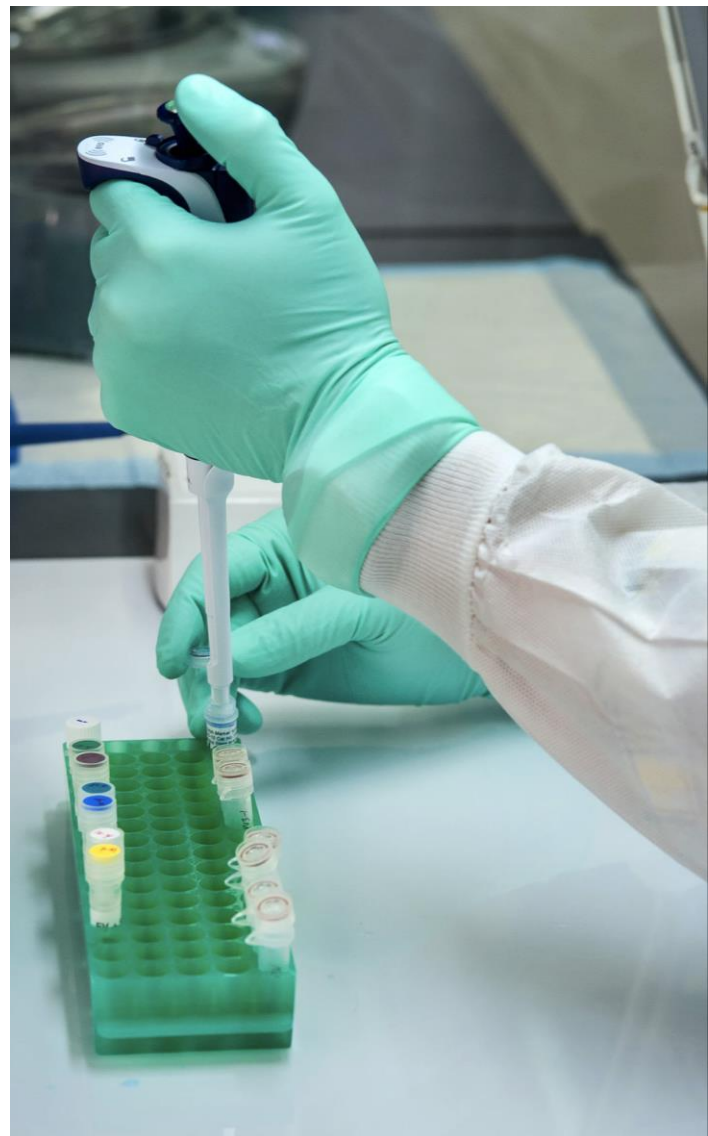
“The current environmental crisis has been accelerating the search to replace petrochemicals and fossil fuels with renewable technologies worldwide, and Brazil is well positioned to respond to this challenge: in addition to having an impressively clean energy matrix, compared to other countries industrialized, has a rich biodiversity, a strong agroindustrial complex and adaptable resources, with countless potentialities”, observes Sérgio Queiroz, coordinator of the study.

Another strong point pointed out by the study is the fact that Brazil has important research institutes, which act as bridges between the scientific production that supports the development of new technologies - usually located in universities - and the industrial community. The survey also points out challenges for the Brazilian industry in the area of biochemicals, such as production costs, industrial infrastructure, public policies to encourage the manufacture of more sustainable products and regulatory issues, including those related to the certification and final destination of bioplastics. “One of the ways to accelerate the overcoming of these challenges is precisely the realization of partnerships”, says Queiroz.

“When it comes to Science, Technology and Innovation, the European Union and Brazil are complementary, because where one has strengths the other can pose challenges, whether in terms of research, technology, market access, or capacity industrial. In this

context, Brazil has high impact initiatives in research, development and innovation, in addition to one of the highest agro-industrial productivity in the world, for large-scale production, and one of the largest biodiversities in the world. The two regions complement each other, which is the premise for a good partnership”, concludes Filipe Cassapo. [GestAgro 360 °](#)

Download the study → [ENRICH in Brazil](#)





# RESPONSIBLE RESEARCH AND INNOVATION:

## APPLICATIONS TO THE BRAZILIAN CONTEXT

## AND ITS RELEVANCE TO INDUSTRY

ENRICH in Brazil has published a study "Responsible Research and Innovation: Application to the Brazilian Context and its Relevance to Industry".

This study comprises a series of actions that seek to explore how responsibility can be introduced into public policy and in organizational contexts that involve scientific research and technological innovation. Responsible research and innovation (RRI) seeks to establish a new paradigm between our society and research and innovation with an aim to align processes and its outcomes with the values, needs and expectations of society.

Concretely, promoting responsibility is understood as the advancement of:

- engaged publics and responsible actors in the science and innovation field, and
- ethically acceptable, sustainable and socially desirable research and innovation outcomes that are aligned with societal needs and challenges.

Given the complexity of both these enterprises, there is no unique approach to RRI, but rather a series of related practice-frameworks that focus on how to achieve these two goals in organizations devoted to research and innovation. Within said frameworks, the components that make up RRI can be grouped into three layers of action:

- Academically-oriented studies
- Policy studies
- Practitioner-oriented frameworks

In the ENRICH RRI study you can find out about the European governance approach when it comes to a responsible research and also how the RRI developed over the years.

According to the study, there are five RRI keys, through which organizations can assess specific instantiations of responsibility, i.e. key topics through which organizations exhibit responsibility. These keys are: Ethics, Gender Equality and Diversity, Open Access and Open Science, Science Education and Societal/Public Engagement.

A salient aspect of RRI frameworks is their strong foundation on organizational studies that propose effective strategies for promoting organizational change. Whether organizations have the capacity to respond to challenges posed by RRI can be propped by the following components: Anticipation and reflexivity, Diversity and inclusion, Openness and transparency, Responsiveness and Adaptation.

RRI has clear normative aspirations. Nevertheless, RRI recognizes that probing responsibility in research and innovation across many types of organization also requires a large degree of flexibility and adaptability to all of the many kinds or organizational contexts where science, research and innovation come into play.

In this study, you can also read about the drivers and barriers of responsible research and innovation. Moreover, an extensive study was conducted on the Brazilian research and innovation environment. For this, we briefly compare the Brazilian experience to that of one of the paragon sites of European RRI: the Netherlands.

[Click here](#) to read the full study (English). We are working on to deliver the study in Portuguese very soon. Stay tuned!

## Internationalisation Enablers | P2P Scheme: The new service of ENRICH in Brazil

After the successful organization of the online Infoday “Innovation Support Ecosystems in Europe and the Americas: Insights on Incubation and Internationalisation Programmes in Europe, Brazil, USA and Costa Rica”, which was aimed at providing incubation and internationalisation professionals with latest trends and insights from the innovation support ecosystems in Europe and Americas, ENRICH in Brazil had its first peer-to-peer exchanges. These exchanges build the framework for its new service “Internationalisation Enablers | P2P Scheme”. The service is aimed at matching ENRICH in Brazil Soft Landing Hubs (accredited Brazilian

Business Support Organisations) with peers in Europe: incubators, tech parks and accelerators from Brazil and Europe will be matched to exchange about their internationalisation support programmes and scout relevant collaboration opportunities. Organizations who took part in the peer-to-peer (P2P) matchmaking sessions have received factsheets, to disseminate internationalisation good practices in Europe and Brazil. For the first matchmaking round, 10 organizations were chosen and divided into 5 matchmaking groups. The names and mission of these organizations are listed in the table below. Details can be found [here](#).

Internationalisation Enablers Matchmaking	
Brazilian Enabler	EU Enabler
<p><b>Sistema Fiep</b> The National Service of Industrial Apprenticeship, a part of the Fiep System. → <a href="#">Website</a></p>	<p><b>Bioindustry Park Silvano Fumero (Italy)</b> A science and technology park and a cluster managing company located in the Piedmont region, near Torino. → <a href="#">Website</a></p>
<p><b>Porto Digital</b> The Núcleo de Gestão do Porto is an entrepreneurial cluster / technology park of innovative companies in the ICT and Creative Industries, located in Recife, Brazil. → <a href="#">Website</a></p>	<p><b>Tecnopolis Parco Scientifico (Italy)</b> Tecnopolis PST is a single-member limited liability consortium company, non-profit, based in Valenzano in the province of Bari, created by the University of for the management of the Technological Park. → <a href="#">Website</a></p>
<p><b>technoPARQ</b> Technology Park of Viçosa is a campus research park of Federal University of Viçosa (UFV), one of the most important universities in Brazil. → <a href="#">Website</a></p>	<p><b>Technoscope (Turkey)</b> Mersin Technology Development Zone (Technoscope) aims at using the research-development studies carried out by the university, industry and other institutions to develop new technologies and transfer them into the industrial production. → <a href="#">Website</a></p>
<p><b>PqTec</b> The São José dos Campos Technology promotes science, technology, innovation and entrepreneurship, aiming at competitive and sustainable development The park ecosystem concentrates startups SMEs, R&amp;D centres, large companies, universities, and government institutions. → <a href="#">Website</a></p>	<p><b>Krakow Technology Park (Poland)</b> A Business Innovation Centre that supports directly over 150 innovative hi-tech startups and SMEs (incubator, accelerator, tenants) and other 170 manufacturing companies in special economic zone and Polish Investment Zone. → <a href="#">Website</a></p>
<p><b>TECHNOVATES</b> The Valedo Taquari Science and Technology Park is an innovation environment, an initiative of Univates, linked to the Directorate of Innovation and Sustainability-Dins. It offers national and international people and companies a structure for research, development and innovation (RD&amp;I). → <a href="#">Website</a></p>	<p><b>TAGUSVALLEY (Portugal)</b> Associação para a promoção e desenvolvimento do Tecnopolo do Vale do Tejo fosters entrepreneurship and innovation on the NUTIII Médio Tejo across ICT, energy, bioeconomy and engineering sectors, identifying opportunities and synergies among regional stakeholders, to create an enhance the regional innovation and entrepreneurship system. → <a href="#">Website</a></p>

# ENRICH DIGITAL TRANSFORMATION TRAINING SERIES

Digital Transformation Training Series were organized by ENRICH in Brazil and Executive Education Unit of Sabanci University, Turkey, in October and November 2020. More than 20 hours of online training on various topics in digital technologies, innovation and management of digital transformation were provided to more than 100 participants. Twenty-one participation certificates were prepared and delivered.

Digital technologies and innovations are the most powerful forces currently shaping the business today. They bring new challenges and opportunities to organizations. In these training series, topics were carefully selected for the ENRICH in Brazil community in order to provide business experts, professionals and managers with knowledge and understanding of the key aspects of digital transformation. It started with “Digitalization and New Technology Trends” training on October 27<sup>th</sup> in which the basic concepts of digitalization and digital technologies (e.g. IoT, AI, big data, cloud computing), the assessment of digitalization and the reflections on Industry

4.0 were reviewed. The series continued with “Creativity, Innovation and Digitalization” training on November 3<sup>rd</sup>.

The following two-day trainings in November focused on more specific topics of digital transformation, namely “Creating Value with Big Data” and “Digital Communication and Media Management”. In “Creating Value with Big Data” training, the focus was on the opportunities and new business models offered by big data and the value creation for businesses using data analytics. “Digital Communication and Media Management” training introduced and delivered the basic concepts of digital content management, digital projects and public relations, social media communication, customer relationship management and new frontiers of digital marketing. The training series ended with a webinar on “New Economic Views” where the transformation in the new economic perspectives was reviewed and articulated.

More information about the trainings are available on our [website here](#).



# SMART CITIES, SMART ENERGY: KEYS TO A SUSTAINABLE FUTURE



It is widely acknowledged that sustainability must be prioritized in any innovation project. Initiatives are emerging around the world in order to rescue the purpose of technology – to improve the lives of those who use it, creating alternatives for development which preserves the environment with intelligent use of resources and respect for people, expanding access to conditions that guarantee well-being.

It is not by chance that many of the strategies aimed at building a sustainable future are designed for urban environments. At the beginning of the 20th century the world population was around 1 billion people. Today we add up to 8 billion and more than 50% live in metropolitan areas. It is estimated that in 2050, with the world's population reaching 10 billion people, 6.3 billion will live in cities whose activities are among the largest sources of greenhouse gas emissions.

As megacities become an undeniable aspect of our reality, there is a growing challenge and need for solutions in sustainability, renewable energy and poverty reduction. In the context of the convergence between social innovation and technological advances, Smart Cities project gain momentum, promoting creative and sustainable environments that use technology in their planning process.

One of the premises of Smart Cities is to put people, and not technology, at the heart of smart solutions. If implemented properly, that is, involving citizens in the elaboration of public policies and democratizing access to infrastructure, Smart Cities projects can enable new forms of solidarity and collective action.

One of the current biggest challenges for cities is the generation and sustainable consumption of energy, and that's a urgent issue: with the exponential increase of the world population, demand for energy will reach unprecedented peak levels. The European Union has set ambitious targets to build sustainable sources of energy. One of the most important of those targets was the launch of the European Green Deal, a "Green Agreement" to reduce dependency on fossil fuels, and in which it undertakes to achieve the so-called climate neutrality, that is, to have the balance of CO<sub>2</sub> emissions versus capture at zero level until 2050.

Horizon 2020, a European program to support research, innovation and international cooperation has made 80 billion euros available for innovation projects, among which energy efficiency. It brought to life initiative like Lighthouse, which focuses on calls for the construction of Smart Cities through Smart Energy. It is all about the sustainable use of energy, bringing together cities, industries and citizens to demonstrate solutions and sustainable business models in terms of energy efficiency. The program has also set out to reach 100 climate neutral cities by 2030, showing how such mission can be achieved by and for citizens. →

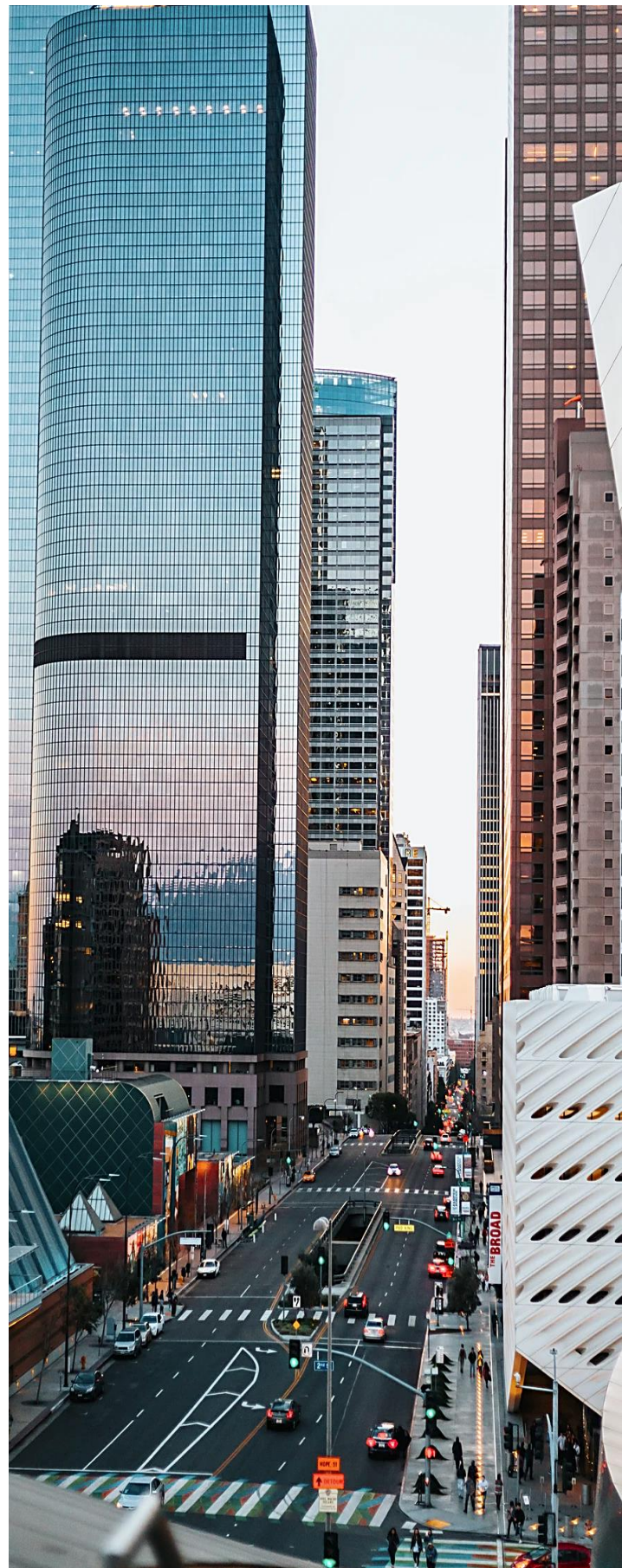


The Positive Energy Districts and Neighbourhoods program was launched in 2018 by JPI Urban Europe research and innovation hub as part of the EU's Strategic Energy Technology (SET Plan) action plan, which aims at transforming energy production and consumption in the region. The program currently involves 20 European countries and several agents who seek to develop broad approaches to the use of technologies and the establishment of regulatory environments, encompassing environmental, social and economic perspectives to articulate and improve the skills of cities, industries and scientific communities.

Created in 2013, the Brazilian Network of Intelligent and Human Cities (RBCIH) brings together the 420 largest Brazilian cities. This network is based on the concept of a Human, Intelligent, Creative and Sustainable City. By bringing together researchers from the main Brazilian universities as well as civil society entities, the Brazilian Institute of Smart, Human and Sustainable Cities (IBCIHS) was created in 2017, which currently houses the RBCIH.

The Brazilian energy matrix is ?? is a global reference, for being clean and renewable, with most of the electricity being produced by hydroelectric plants. There has been a strong growth in recent years in the use of biomass and biogas energy, in addition to wind and solar. Despite the fact that energy transition is a relatively recent process, and the countless social and economic challenges that the country faces, there is a good starting point for systemic approaches and for the implementation of projects related to Smart Cities and energy efficiency.

The cooperation between Brazil and Europe on Smart Cities and Smart Energy can be quite rich, since both regions have diverse and important contexts and experiences. The European Union has well-structured public policies and programs, such as the Green Deal, Horizon 2020 and PED. Brazil has initiatives that demonstrate high level of excellence in these areas. The starting points may be different in each region, but the objectives are the same!



# HOLISTIC VIEW OF INDUSTRY 4.0

*By Rodrigo Pastl, Fraunhofer Liaison Officer in Brazil*

The phenomenon that has been called the 4th Industrial Revolution began a few decades ago, with the creation of the first production cells to combine information and manufacturing technologies in real time. Soon the first production lines and smart plants appeared. But transforming a cell, production line or even an entire factory, using IT and communication between machines and people in order to increase efficiency in production, is different from making a whole enterprise smart, from end to end. Today, with global companies and increasingly complex production and distribution chains, the idea of intelligent manufacturing has evolved into that of intelligent business, which points to new paradigms in productivity, efficiency, rapid response and product customization.

Industry 4.0 promotes a link between all levels of the industry itself - be it an industrial plant or corporation - and the outside world - the customer or consumer. It is not only a question of obtaining feedback from the consumer, often through the analysis of data from social networks, but of effectively considering this feedback and inserting it into the production chain quickly, in order to meet the needs of customers in the most efficient way, as agile as possible. This real-time optimization has a positive impact not only on the company's credibility, but on the quality of the product or service. This is the essence of Industry 4.0.

This focus on people seems to contrast with ideas generally associated with digital technologies. But it is so decisive that it is not even limited to customers and consumers. Take automation, for example, a crucial process in Industry 4.0. Without

human knowledge, there is no automation, since machine learning takes place primarily from people. When we talk about digital transformation, considering the volume of data processing required for sensing, for example, automation of data capture also frees up considerable time for people to focus on activities other than mechanics, in addition to allow faster analysis of information.

All of this avoids waste and, therefore, increases gains, but not just financial ones. Robots and sensors also help to increase safety and ergonomics for workers, taking them off the front lines in services and activities with high safety risks. In the concept of lean manufacturing, or lean manufacturing, you only invest in something if there is a real purpose. If the purpose of automation is to improve the worker's life, the investment will certainly be worthwhile.

## **Decisions that consider the whole process**

One of the most important issues for Industry 4.0 is the decentralization of decision making. It is important and necessary to have autonomy in each process, but when the entire chain is connected, decisions take different criteria. For example: in a manufacturing process, a specific machine detects a moment of idleness when it could manufacture another product. With a complete view of the chain, she realizes that this would only generate stock; the extra product would not be sold and would only bring additional costs. So, even though it seems efficient, the decision to use idle time to produce more would not be the best decision. Real-time optimization means decentralization in decision making, but as the production process "talks" permanently, these decisions are always based on the vision of the whole. →



This integration benefits all sectors of the industry, but its implementation, of course, faces some challenges. The training of people, including non-technical areas, is one of them. The nine pillars of Industry 4.0 - data analysis, robotics, simulation, systems integration, Internet of Things (IoT), cybersecurity, cloud computing, additive manufacturing and augmented reality - can create confusion as to which technology to adopt for each process, and this decision is often made by managers who are not necessarily familiar with them. It is essential that people of all levels, positions and functions are trained, and that managers also know how to listen to the technical team. It is not by chance that the concept of lean manufacturing borrows from the martial arts the figure of Sensei to speak of leadership. Someone who at the same time inspires and gives autonomy, leading to decisions that ensure that there is no waste, but that there is real purpose.

During the Covid-19 pandemic, virtually all companies started offering digital and remote services, in addition to selling products online, which accelerated the

digital transformation. The big question has been to be able to deliver in the online sale the same value as the face-to-face sale to the consumer. One of the critical points in Brazil is logistics, mainly on land. However high the production speed is, there are bottlenecks in distribution logistics. And yet, there were also sales records in that period.

There are also other specific local challenges to success in Industry 4.0. One of the ways to overcome these challenges may be in partnerships such as those promoted by Enrich - Brazil-Europe Innovation Center, which with a focus on the complementarities of the two regions seeks to stimulate scenarios in which both benefit.

We are in the midst of a significant transformation of the industry, thanks to the digitization of its processes. This transition can only be effectively a successful revolution if it is guided by people - in the management of processes and at the cutting edge, as the customers and consumers for whom we generate value.

[Click here](#) to read this article in Portuguese.



# THE COMPETITIVENESS RANKING OF BRAZILIAN

## STATES FOR 2020

The annual Competitiveness Ranking of the Brazilian States for 2020 has been recently published.

The study analyzes the competitive capacity of all Brazilian states and the Federal District in 69 indicators, grouped into 10 pillars. It seeks to encourage states and public leaders to seek innovations and improvements in the pillars and indicators evaluated, in addition to functioning as an evaluation system for public administration, in which the population can assess the management of their state.

As in the 2018 and 2019 edition, São Paulo remained in the first position in the Competitiveness Ranking of the States. Likewise, Santa Catarina remained in the second position, Distrito Federal, in the third and Paraná, in the fourth. The Southeast, South and Midwest states are concentrated in the upper half of the ranking, with the North and Northeast states occupying the last positions. In this edition, Maranhão left the last positions, going from 26th place to 23rd.

In the infrastructure pillar, besides the usual winners (São Paulo, Santa Catarina, Federal District), Rio de Janeiro and Alagoas improved their positions from 16<sup>th</sup> to 9<sup>th</sup> and from 14<sup>th</sup> to 8<sup>th</sup>, respectively.

In the innovation pillar, São Paulo, Rio Grande do Sul and Santa Catarina were ranked as the most innovative states. Espírito Santo advanced 11 positions thanks to the good position in the new indicator of Scientific Research (5<sup>th</sup> position) and the relative advance in the indicators of Public Investments in R&D and Masters and Doctorate Scholarships. The state of Bahia climbed 10 positions up also thanks to the relative improvement in the Master and Doctorate Scholarship indicator. It is however to note that there has been a change the methodology in the analysis of this pillar. → [Ranking de Competitividade](#)

For more information [click](#) here (Portuguese).



### Infrastructure

1. São Paulo
2. Santa Catarina
3. Federal District
4. Paraná

### Innovation

1. São Paulo
2. Rio Grande do Sul
3. Santa Catarina
4. Paraná

### Education

1. São Paulo
2. Santa Catarina
3. Minas Gerais
4. Paraná

### Market Potential

1. Paraná
2. São Paulo
3. Mato Grosso
4. Amazonas



## SUCCESS STORY

# BUILDING BRIDGES BETWEEN EU AND BRAZILIAN INSTITUTIONS, RESEARCHERS AND FUNDING AGENCIES

by Thais Soares, SPI  
Porto. Based on an interview with Nina Fernández for  
ENRICH in Brazil

This month, the ENRICH Monthly interview series spoke with Nina Fernández, who is an International Project Officer responsible for the best management of the EU grants that the Foundation for Scientific and Technological Development in Health (Fiotec) of the Oswaldo Cruz Foundation (Fiocruz) holds.

Fiocruz is attached to the Brazilian Ministry of Health and is one of the most prominent science and technology health institutions in Latin America. It is also considered as one of the world's main public health research institutions. Fiocruz promotes health and social development, generate and disseminate scientific and technological knowledge, and is an agent of citizenship.

### Career

Being responsible for the management of the EU grants at the Fiotec, the scope of work of Ms Fernández includes fostering of communication and provision of the best management conditions for the European grants, including monitoring of deliverables and other activities. She is a

skilled professional in international relations, political science and government scenarios. Corporate relations and strategies, stakeholder mapping, supplier and client relationship, as well as institutional communication are areas of her expertise. Marketing strategies aimed at enhancing brand awareness, customer loyalty and customer relationship management are also part of Ms Fernández's job responsibilities.

Nina Fernández is also in charge of different research scopes of various study projects. For instance, in the Zika and Chikungunya studies she is responsible for the different stages starting from from the disease itself, its vectors, side effects, and sequelae in pregnant women and children.

### Internationalization

As a member of the Fiotec's international projects' team, Ms Fernández previously worked in the Brazilian oil and gas industry, collaborating with different institutions, think tanks and private sectors. The international environment is the core value that she appreciates since the beginning of her career.

Bringing innovation and best practices to Brazil in reference to the state-of-the-art of consulting management in Europe. On a daily basis, Ms Fernández has a direct contact with institutions from France, Italy, Spain, England, and with the European Commission in Brussels. Such highly diverse international workspaces allows her to fully comprehend how to best manage international projects when it comes to sharing knowledge and innovation as well as solve problems and negotiate with international institutions.

Last year, Ms Fernández had the opportunity to visit Spain to enroll in an European Funding Management Programme, where she received a specialized training in her role as an International Project Officer. The training was an enriching experience for her. It covered all steps that a project can have: proposal elaboration and development, legal aspects, project approval and implementation, financial management and final audits.

For Ms Fernández, working for one of the world's most prestigious health institution makes her feel like being part of a greater change. She highlights through that this feeling is of course increased due to the current pandemic situation that the whole world is facing. Fiocruz is the leading public health research institute in Brazil in terms of vaccines, and in this sense, Ms Fernández feels she is a part of this battle against COVID-19.

### Challenges and opportunities

Implementing European funded projects in Brazil has its peculiarities due to cultural and legal issues. The parties' modus operandi is very different, and this can sometimes compromise a good flow of communication. Shortly after joining the Fiotec, Ms Fernández developed a clear understanding of how the funding institutions, e.g. European Commission (EC), want to execute the projects and how they interpret the grant agreements. This helped her in creating a common space with the funding coordinators, where she could provide valuable insights



Nina Fernández © Nina Fernández

about the work ethics and cultural differences of Brazilian institutions that commonly have an immense impact on multilateral and multicultural projects. For instance, although bureaucracy exists in every country, the approaches how to handle it efficiently differ country to country depending on their cultural background. Ms Fernández believes that for international projects, legal and intellectual property rights of the grant agreements need to be clearly defined and set.



The international environment is the core value that I appreciate since the beginning of my career.



Another example that impedes more the daily routine as well as the financial reports is the Person Month (PM) concept commonly used by the European funding agencies. This is a metric designed to



calculate the "human-effort" needed in accomplishing specific project-related tasks and it is measured in time per project personnel. The PM concept does not apply to Brazil due to different labour legislations, hence leading to miscalculations and delays in report submission. Sometimes, scientists and researchers encounter difficulties when dealing with project administrative work, if they are not assisted by experienced professionals like Ms Fernández.

### **Enforcing the STI and R&D partnership**

In terms of research and innovation, the relationship between Brazil and the European Union could improve, if Brazil would become eligible to receive European Commission grants without the requirement of being a partner in a consortium coordinated only by EU members. For Ms Fernández, this type of adjustment in the grant rules and

requirements that would also provide more autonomy for the Brazilian partners and more room for negotiations, would actually enforce the bilateral STI and R&D relationship.

Clearer and more objective communication, with the direct participation of all those involved from beginning to end, can also be grown, thus seeking harmony in the partnership relationship and greater trust between the parties.

*We thank Nina Fernández very much for sharing her valuable experience in internationalization and bilateral projects and being an "Ambassador" for increasing scientific and technological cooperation between Europe-Brazil.*



The Moorish Pavilion on which the central building of Fiocruz sits. © Fiocruz