PRESS RELEASE

IBISBA 1.0

Industrial Biotechnology Innovation and Synthetic Biology Accelerator

Launch of a European network of research infrastructure facilities for Industrial Biotechnology

LAUNCH OF A HORIZON2020-INFRAIA STARTING COMMUNITY PROJECT TO SUPPORT INDUSTRIAL BIOTECHNOLOGY

A PAN-EUROPEAN COMMUNITY OF INFRASTRUCTURE TO SUPPORT INDUSTRIAL BIOTECHNOLOGY

On the 01/12/2017, the **IBISBA 1.0** project was launched. This project entitled **Industrial Biotechnology Innovation and Synthetic Biology Accelerator 1.0**, aims to create a coordinated network of research infrastructure facilities that support industrial biotechnology. The work of the network is to open access to first-rate research facilities and lay the foundations for a permanent research infrastructure that will address some of the **main challenges that are currently hampering the development of industrial biotechnology**, a key enabling technology (KET) of Europe's bioeconomy.

What is Industrial biotechnology? A hybrid technology that embraces biocatalyst design and bioprocess development. Increasingly, industrial biotechnology is associated with synthetic biology, a field that draws upon recent advances in life sciences to design and build new biocatalysts, such as designer enzymes and cell factories. Industrial biotechnology is quite versatile, since it addresses a wide range of market sectors, from bioenergy to high-value pharmaceutical ingredients. In the context of the bioeconomy, industrial biotechnology is considered as a key enabling technology to harness the potential of biobased resoruces for the advanced manufacture of biobased products. Presently, to unleash the potential of industrial biotechnology and insert it as a key technology in the different manufacturing sectors, it is necessary to gain in maturity, making bioprocess development faster and more reliable.

QUESTIONS FOR IBISBA 1.0 PROJECT PARTCIPANTS

WHAT IS THE KEY CHALLENGE ADDRESSED BY IBISBA 1.0?

Michael O'Donohue, Research Scientist at the Institut National de la Recherche Agronomique (INRA) – France. Project coordinator.

Europe is a leader in industrial biotechnology and is extremely well-placed in synthetic biology. However, to promote the bioeconomy transition, research in industrial biotechnology needs to produce innovative bioprocesses faster, and these need to be more reliable. To achieve this, industrial biotechnology requires support from by research infrastructure organized to provide translational research services. This is the key aim of IBISBA 1.0.

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n. 730976

IBISBA 1.0 WILL OPEN ACCESS TO RESEARCH INFRASTRUCTURE. WHO WILL BENEFIT?

Beatrice Cobucci-Ponzano, Research Scientist at the Institute of Biosciences and BioResources of the National Research Council (IBBR-CNR) – Italy. Leader of the workpackage 2: Communication, Outreach and Dissemination.

IBISBA 1.0 project aims to reach out to several target groups. Academia and industries, in particular SMEs, need greater access to research infrastructure offering both scientific excellence and the ability to promote innovation in bioprocess development. This is even more important in EU member states and third party countries that are underdeveloped in terms of R&D infrastructures for industrial biotechnology. IBISBA 1.0 will strive to enable researcher access to research infrastructure, especially for those who do not have easy access within their member state and for SMEs.

THROUGH ITS TRANSNATIONAL ACCESS PROGRAM, IBISBA 1.0, WILL OFFER ACCESS TO A WIDE RANGE OF PLATFORMS. WHAT ARE THE BENEFITS FOR USERS?

Fayza Daboussi, Senior Research Scientist at Institut National des Sciences Appliquées de Technologie (INSAT) – France. Leader of the workpackage 5: Opening access to infrastructure.

IBISBA 1.0 is aiming to offer top class services to potential users coming from both public and private sectors, irrespective of whether they are located in a European Union member state or not. Additionally, IBISBA 1.0 wants to supply users with an integrated service offer that will move user projects as far along the innovation continuum as possible. To achieve this, IBISBA 1.0 can mobilize a wide range of research tools and expertise.

Any researchers interested in using IBISBA 1.0 services, benefitting from European-funded access to do this, are very welcome. They just need to look out for the transnational access call that will be launched during the second semester 2018.

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RESEARCH INFRASTRUCTURE REQUIRES DIGITAL TECHNOLOGY SUPPORT. WHAT IS PLANNED FOR IBISBA 1.0?

Carole Goble, Data Scientist at the University of Manchester (UNIMAN) - UK. Leader of the workpackage 7: Meeting the e-needs of a distributed infrastructure for Industrial Biotechnology.

Jean-Loup Faulon, Senior Research Director at the Institut National de la Recherche Agronomique (INRA) – France. Leader of the workpackage 7: Meeting the e-needs of a distributed infrastructure for Industrial Biotechnology

We will develop an IBISBA HUB e-infrastructure to catalogue and host scientific workflows and experimental standard operating procedures that can be used together to run multi-partner and multi-site execution, monitor and report typical industrial biotechnology and synthetic biology processes. The workflows will cover pathway and strain design and optimization, standard operating procedures for pathway and strain engineering, and product identification and quantification from omics data. The workflows will be an important step to reproducible science and shared know-how for greater researcher productivity.

WHAT ARE THE RESEARCH GAPS ADDRESSED BY IBISBA 1.0?

Merja Penttilä, Research Professor in Industrial Biotechnology at the Technical Research Centre of Finland (VTT) – Finland. Leader of the workpackage 6: Overcoming R&D bottlenecks in Industrial Biotechnology platforms.

Jussi Jäntti, Team Leader at the Technical Research Centre of Finland (VTT) – Finland. Leader of the workpackage 6: Overcoming R&D bottlenecks in Industrial Biotechnology platforms.

We aim to demonstrate the seamless execution of the Design-Build-Test-Learn (DBTL) cycle of synthetic biology. DBTL cycle includes the design of production organisms based on mathematical models of cell metabolism, and high-throughput construction and testing of engineered cells using robotic platforms to find the best ones for production of a particular compound of interest. Tools and procedures will be developed to enable us to identify the desired clones amongst a large number of candidates. It is essential that the technoeconomic parameters of the actual production process are taken into consideration in strain design as early as possible. This way, we will have a fully integrated end-to-end bioprocess development that will be robust and fast, not only in terms of biocatalyst development, but also in up-scaling of production processes.

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HOW WILL INDUSTRY BE INVOLVED IN IBISBA 1.0?

Juan Fran Sangüesa, Innovation Manager at the Universitat Autònoma de Barcelona (UAB) – Parc de Recerca UAB (PRUAB) – Spain. Leader of the workpackage 4: Innovating for and with industry.

Lara Valentin, Business Developer at the Universitat Autònoma de Barcelona (UAB) – Parc de Recerca UAB (PRUAB) – Spain. . Leader of the workpackage 4: Innovating for and with industry.

IBISBA 1.0 aims to enhance and facilitate industry access to state-of-the-art biotechnology facilities. This offer will be easily accessible through a "one-stop-shop", where any small or large company will get the support from a dedicated team that will help them to find the best solution for their needs. Multiple access modes tailored to industry will be available, considering critical confidentiality and IPR aspects. In this regard, IBISBA will be a great opportunity for SMEs, who will be eligible for special advantages, such as straightforward access to EU funded access without the need to comply with EU open data rules.

WHAT RESEARCH INFRASTRUCTURES ARE INVOLVED IN IBISBA 1.0?

Heleen De Wever, Project Manager at Flemish Institute for Technological Research (VITO) – Belgium. Leader of the workpackage 1: Training of infrastructure operators and users.

The current IBISBA 1.0 partnership represents infrastructure addressing discovery and engineering of enzymes and microbial strains, high throughput robotics for strain engineering and screening, characterization and performance assessment, genomic - proteomic – metabolomic – fluxomic platforms, as well as bioprocess design, development, integration and intensification, process modelling and upscaling. The infrastructure operators of the various platforms will exchange best practices and agree on a common harmonization and standardization framework. Furthermore, e-tools will be developed to enable operation in a distributed infrastructure. These outputs will also be shared with potential future users of the platforms and with other infrastructure operators that may join IBISBA 1.0 at a later stage.

WHO ARE THE PARTNERS COMPOSING THE NETWORK OF IBISBA 1.0 AND HOW WILL THEY INTERACT?

Vitor Martins dos Santos, Professor and Director of the Wageningen Centre for Systems and Synthetic Biology at the Wageningen University & Research (WUR) – The Netherlands. Leader of the workpackage 3: Building the community and the wider network.

The IBISBA 1.0 consortium is composed of 16 organisations from 9 different European member states, working together to promote industrial biotechnology. Consortium members will be working closely together, not only to enhance the performance of their individual research infrastructures, but also to build an effective network capable of offering new integrated services. Regarding the internal workings of the consortium, members will strive to maximize interoperability, something that is quite a challenge in a highly multidisciplinary area such as industrial biotechnology. Beyond the consortium, IBISBA 1.0 members will reach out to the

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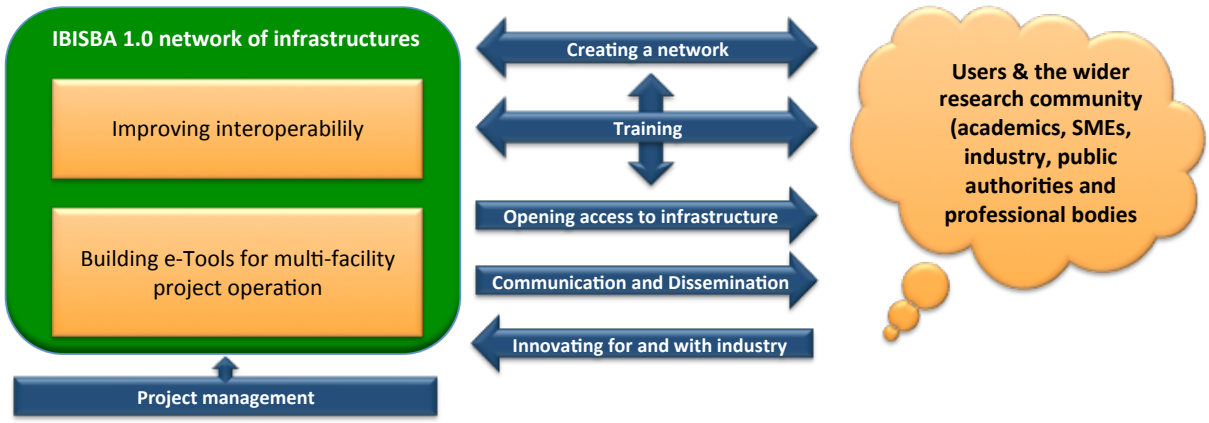
international industrial biotechnology community and its stakeholders in order to better capture expectations and build a strategic roadmap that will deliver a European research infrastructure.

AN OVERVIEW OF IBISBA 1.0



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