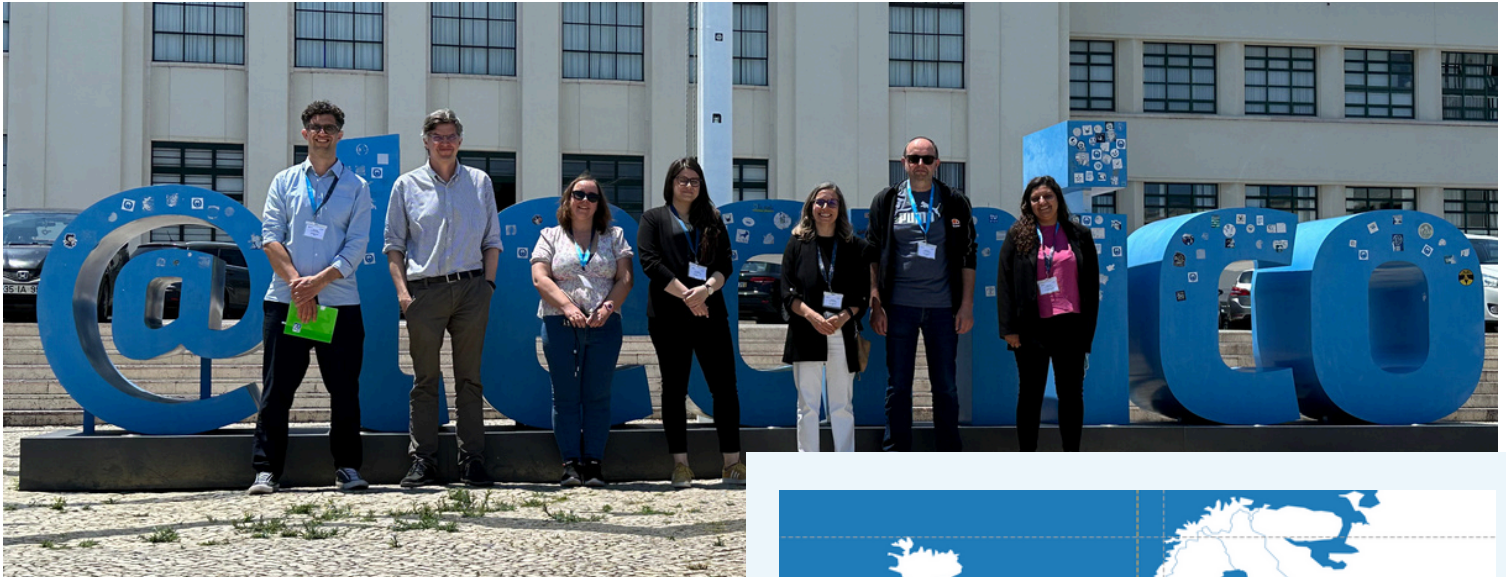


# NEWSLETTER

## DIG4BIO EU Twinning Project



Kickoff meeting held at IST, 1 July, 2024

### WHAT IS DIG4BIO?

DIG4BIO is a EU-funded Twinning action that aims to advance the research capacity and profile of **Instituto Superior Técnico** (IST, Portugal) in the rapidly evolving field of digitalization of biomanufacturing, and to strengthen the research management and administrative skills of IST/IST-ID.




### HOW WILL WE ACHIEVE THIS?

Dig4Bio will foster a strategic partnership between IST and leading European institutions at the forefront of digital biotechnology and lab automation, e.g., **PROSYS** (DTU, Denmark) and **KIWI-biolab** (TU Berlin, Germany). Through this alliance, Dig4Bio will facilitate knowledge exchange, joint research activities, and skill development, driving innovation and advancing biomanufacturing capabilities at IST/IST-ID.



Dig4Bio spans 36 months and is structured around 6 Work Packages (WPs) that encompass various aspects of research, training, collaboration, and dissemination.

 <h3>WP1</h3> <p>Aims to enhance the capacity and research profile of IST/IST-ID by scientific training and knowledge exchange activities.</p>	 <h3>WP2</h3> <p>Aims to strengthen the research management capacities and administrative skills of IST and IST-ID staff.</p>	 <h3>WP3</h3> <p>Addresses the research question “How to digitalize the biomanufacturing processes of plasmid DNA”?</p>
 <h3>WP4</h3> <p>Aims to promote synergies between the consortium and key stakeholders, to enhance project outcomes.</p>	 <h3>WP5</h3> <p>Aims to disseminate findings, engage with the scientific community, and promote awareness of key advancements.</p>	 <h3>WP6</h3> <p>Aims to ensure the successful execution of all project components and that the project activities run smoothly.</p>




## Digitalization of Biomanufacturing

Driving Efficiency,  
Cutting Costs,  
Ensuring Quality



Funded by the European Union

### WHAT IS INDUSTRY 4.0?

**Industry 4.0** marks the fourth industrial revolution, integrating technologies like artificial intelligence - AI, big data, Internet of Things - IoT, into manufacturing. It focuses on automation, smart systems, and real-time data to create efficient, interconnected production environments. Key innovations include smart factories, digital twins and predictive maintenance, driving productivity, cost savings and sustainability.

### WHAT IS A DIGITAL TWIN?

**Digital twins** are virtual replicas of physical assets, systems, or processes, created using real-time data and simulations. They enable monitoring, analysis, and optimization by mirroring their real-world counterparts. Widely used in different industries, digital twins improve efficiency, predict failures, and support innovation by providing valuable insights into performance and behavior.

## KICKOFF MEETING

On July 1st, 2024, DIG4BIO was officially launched with a Kickoff Meeting and 1st General Assembly at Instituto Superior Técnico (IST), Lisbon. This milestone marked the beginning of our journey to drive digitalization in biomanufacturing – enhancing efficiency, reducing costs, and ensuring precision in producing biopharmaceuticals and advanced therapies. A special thanks to Anca-Adriana Cucu, DIG4BIO project officer (REA, EU) and Rui Munhá (Portuguese National Contact Point, FCT), for their invaluable contributions.

### Key participants

IST	Ana Azevedo (Project Coordinator), Rogério Colaço, Mario Nuno Berberan, Miguel Prazeres, Miguel Correia
IST-ID	Sofia Duarte, Sofia Aires Martins, Marta Candeias
DTU	Krist Gernaey, Carina L. Gargalo
TUB	Nicolas Cruz B.



## FIRST WORKSHOP

The DIG4BIO project kicked off its training initiatives with a highly successful "Introduction to Python" workshop which marked the beginning of a series of capacity-building activities aimed at advancing digital skills for bioengineers and fostering innovation in biomanufacturing.

# Introduction to Python Workshop

Carina L. Gargalo, DTU  
Fiammetta Caccavale, DTU

Practical course designed for (bio)chemical engineers that want to learn how to program in Python, with examples of upstream and downstream processes modeling.

10 -12 September 2024

Hotel Holiday Inn Lisboa

EU Project DIG4BIO

Register here:



30 participants



Day 1: Python essentials and reactor design  
Day 2: E. coli models and diafiltration  
Day 3: Project work for real-world practice



Carina L. Gargalo (DTU)  
Fiammetta Caccavale (DTU)  
Johan Le Nepvou De Carfort (DTU)  
Rosa Haßfurter (TUB)  
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