Estonia
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Job offer

JOB ESTONIA EXPIRES SOON

AS TFTAK | Posted on: 11 December 2025

PhD Position in Development of Multi-Objective Optimization frameworks for Sustainable Bioprocesses design (FrameBio MSCA-DN Project)

Apply now (mailto:career@tftak.eu?subject=PhD Position in Development of Multi-Objective Optimization frameworks for Sustainable Bioprocesses design (FrameBio MSCA-DN Project))

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Marie Skłodowska-Curie Actions

11 Dec 2025

Job Information

Organisation/Company	AS TFTAK
Department	Bioprocesses
Research Field	Biological sciences » Biological engineering
Researcher Profile	First Stage Researcher (R1)
Positions	PhD Positions
Application Deadline	20 Jan 2026 - 12:59 (Europe/Helsinki)
Country	Estonia
Type of Contract	Temporary
Job Status	Full-time
Hours Per Week	40
Offer Starting Date	1 Sep 2026
Is the job funded through the EU Research Framework Programme?	Horizon Europe - MSCA
Marie Curie Grant Agreement Number	101227645
Is the Job related to staff position within a Research Infrastructure?	No

Offer Description

We invite applications for a fully funded **PhD position within FrameBio**, a prestigious **Marie Skłodowska-Curie Actions (MSCA) Doctoral Network** involving 16 academic, industrial, and technological partners across the EU, that will collaborate and train 13 PhDs in genomics, metabolomics, fermentation, process optimization, data science, and sustainability assessments. The qualified PhD student will be enrolled in Doctoral program of Tallinn University of Technology (TalTech), Department of Chemistry and Biotechnology, and will conduct their research at **TFTAK**.

Our profile

TFTAK (Center of Food and Fermentation Technologies) is a privately owned research organization based in Estonia whose mission is to accelerate food and biotech innovation, precision fermentation and novel food product development projects. We aim to lead the development of innovative, sustainable, and health-supporting food technologies by offering agile, end-to-end R&D solutions—from ideation to market-ready products. Our work bridges fundamental science and real-world implementation, enabling the creation of novel, scalable technologies that support global well-being.

About the FrameBio Project

FrameBio aims to close a major knowledge gap by quantifying the economic, environmental, and social sustainability of bio-based products that support future food security. The project focuses on developing high-resolution, waste-derived biotechnology feedstocks, and generating the necessary background data to enable robust sustainability assessments. Furthermore, FrameBio seeks to revolutionize biotechnologies by fostering the advancement of sustainable bioproducts production technologies for food applications, such as Single Cell Proteins.

The TFTAK-led doctoral project will pioneer computational and experimental frameworks that merge multi-objective optimization (MOO) and process modelling to drive the development of innovative and sustainable bioprocess technologies.

Tasks and Responsibilities

The selected Doctoral Candidate will work on a combination of computational modelling (FBA, SCM), data-driven process optimization, and integration with quantitatively reliable analytics and data handling.

Key tasks include:

1. Development of Flux Balance Analysis (FBA) and Single Cell Models (SCM), the later allows to carry out *ab initio* bacterial cell design projects
2. Collaborate with laboratory facilities to generate relevant bioprocess data.
3. Compare and benchmark of experimental data with modeling results
4. Use the developed modeling toolbox to support bioprocess design, scalability assessment, and scenario evaluation.
5. Enable tight coupling between computational tools and high-throughput experimentation.
6. Evaluate and optimize key process variables to reduce environmental impact while improving the products
7. Integration of multi-objective optimization (MOO) models with single cell models (SCM) to improve computational and sustainability criteria of bioprocesses.

The PhD student will collaborate closely with local and international FrameBio partners, gaining interdisciplinary training across biotechnology, modelling, optimization, and sustainability assessment.

HOW TO APPLY

Please submit the following documents to career@tftak.eu:
- **Cover letter describing your motivation and research interests**
- **Curriculum Vitae (max. 3 pages)**
- **Transcripts of Bachelor's and Master's studies**
- **Contact details of two referees**

Where to apply

E-mail	career@tftak.eu

Requirements

Research Field	Biological sciences » Biological engineering
Education Level	Master Degree or equivalent

Skills/Qualifications

We seek a highly motivated candidate with a strong interest in computational modelling, bioprocess systems optimization, and sustainable biotechnology.

Specific Requirements

Required Qualifications

- **A master's degree (or close to completion)** in biotechnology, chemical engineering, or a related field.
- Research experience in bioprocess development, analytical methods (e.g., HPLC, GC), and process modelling.
- Experience with experimental design, parameter optimization, and statistical data analysis.

Desirable Skills

- Background in computational systems biology and metabolic modelling.
- Experience in systems biology methods, flux balance analysis (FBA), or constraint-based modelling.
- Interests in sustainability evaluation methods and circular bioprocessing.

Languages	ENGLISH
Level	Excellent

Additional Information

Benefits

Salary information:

We offer a competitive salary in line with the MSCA-DN program regulations for doctoral candidates. The package includes a monthly living allowance of €3,717.27 and a mobility allowance of €710 minus all compulsory deductions (Estonian social security tax 33% and income tax 22 %) under national legislation (You may use online salary calculator: https://www.palgakalkulaator.ee/en/2026 to see what the net salary would be)

Other benefits:

- Depending on family circumstances, researchers may also be eligible for a family allowance
- Additional paid vacation days between Christmas and New Year
- Occupational healthcare, fitness and healthcare compensation 400 € per year
- Estonian public health insurance, which covers general practitioners, specialists, and hospital care, is guaranteed to everyone, including non-citizens who are registered as employees or students

- Public transport in Tallinn is free for everyone who have registered their living place in Tallinn

Eligibility criteria

At the time of hiring, **no more than 12 months** of residence in Estonia or main activity (work, study, etc.) in the last three years immediately prior to the date of hiring.

The applicant **must not have been awarded a doctoral degree**.

The scholarship for the PhD degree is subject to academic approval, and the candidate will be admitted to an Industrial Doctorate position and enrolled in a relevant degree programme at Tallinn University of Technology (TalTech). For information about the enrolment requirements and the general planning of the PhD study please see TalTech's rules for PhD education .

Additional comments

This is a full-time position is to be filled on September 1st, 2026, and funded for a fixed term of three years. The fourth year of doctoral studies will be financed directly by TalTech, subject to satisfactory progress and enrolment in the PhD program.

Website for additional job details	https://oigusaktid.taltech.ee/en/regulations-of-tallinn-university-of-technolog…

Work Location(s)

Number of offers available	1
Company/Institute	TFTAK
Country	Estonia
State/Province	Harjumaa
City	Tallinn
Postal Code	12618
Street	Mäealuse 2/4

Contact

State/Province	Harju
City	Tallinn
Website	http://www.tftak.eu
Street	Mäealuse 2/4
Postal Code	12618
E-Mail	career@tftak.eu

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