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INNOVATIVE CHEMISTRY AND BIOTECHNOLOGY
FOR A SUSTAINABLE FUTURE

INNOCHEMBIO
Information Webinar 30.07.2025

TAL TECH

NICPB
KBFI

Co-funded by
the European Union

Estonian
Research Council

AGENDA

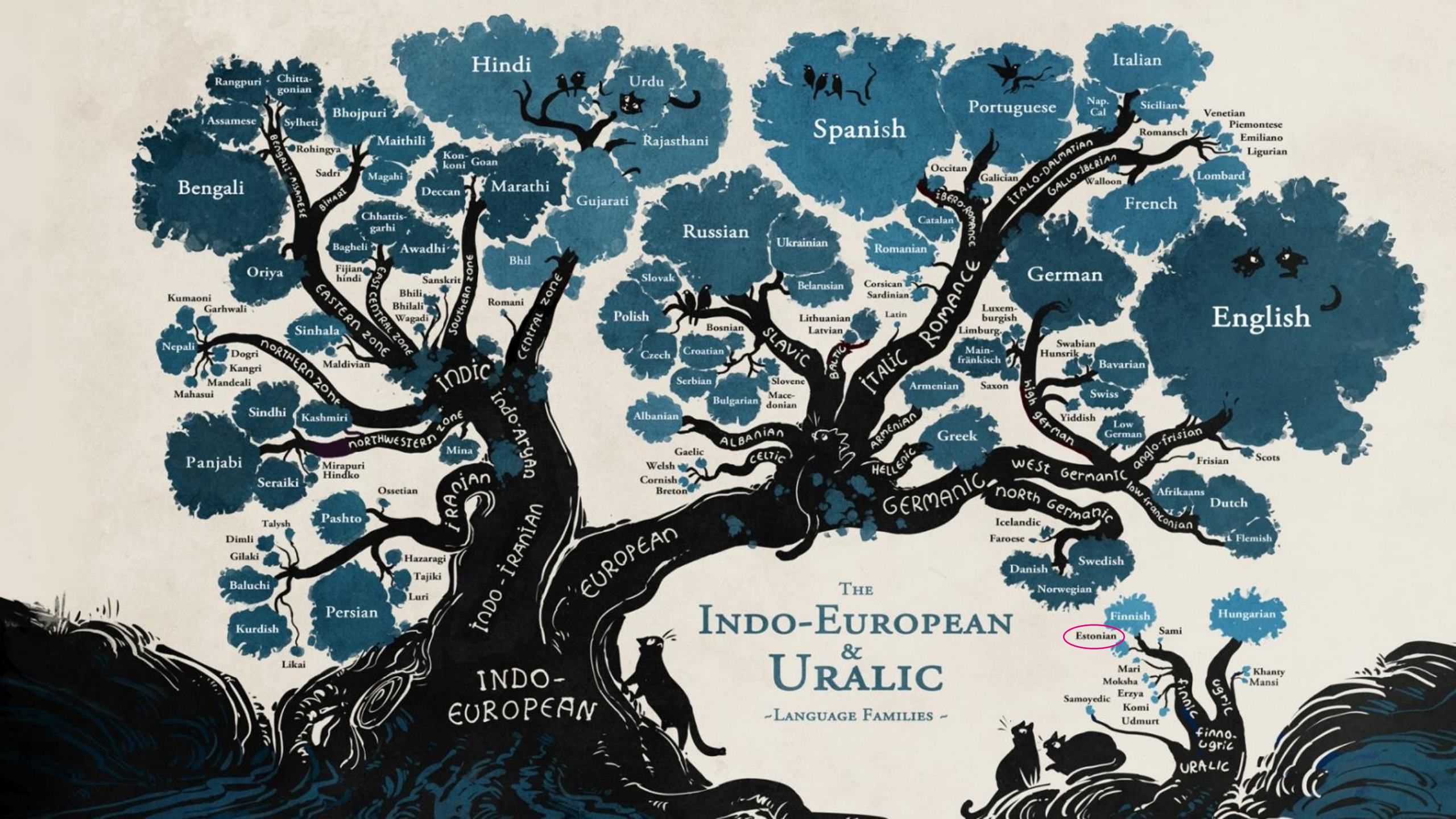
- General knowledge about Estonia
- Introduction of Tallinn University of Technology
- INNOCHEMBIO general information
- INNOCHEMBIO partners
- 15 PhD thesis projects
- Application process

ESTONIA

ESTONIA

+ population: 1.3 million
+ capital: Tallinn (460,600 people), situated in north Estonia, on the shore of the Gulf of Finland of the Baltic Sea
+ average day (night) temperatures in Tallinn: July +21 °C (+14 °C), January: -2 °C (-5 °C)
+ area: 45 339 km^2
+ currency: Euro
+ member of EU, NATO from 2004
+ 99% of public services online

+ Q1 2025 average monthly gross wage: 2011 € -> ~1520 € net
+ 3 min to fill taxes online
+ 51% of Estonia is covered by forests
+ population density is 30.3 people/km^2 - 4 times less than EU's average


Hindi
Urdu
Rajasthani
Spanish
Portuguese
Italian
Nap-Cal
Sicilian
Venetian
Piemontese
Emiliano
Ligurian
Romansch
Rangpuri
Chitta-gonian
Assamese
Sylheti
Bengali
Bengali-Assamese
Bhojpuri
Maithili
Rohingya
Sadri
Magahi
Bihari
Kon-koni
Goan
Deccan
Marathi
Gujarati
Occitan
Galician
Catalan
Ibero-Romance
Italo-Dalmatian
Gallo-Iberian
Walloon
Lombard
French
Chhattis-garhi
Bagheli
Awadhi
Fijian hindi
Eastern zone
East central zone
Southern zone
Central zone
Bhil
Sanskrit
Bhili
Bhilali
Wagadi
Romani
Oriya
Russian
Ukrainian
Belarusian
Slovak
Polish
Romanian
Corsican
Sardinian
Latin
Lithuanian
Latvian
Baltic
Slavic
Italic
Romance
German
English
Luxem-burgish
Limburg.
Main-fränkisch
Saxon
Swabian
Hunsrik
Bavarian
Swiss
Yiddish
High German
Low German
Kumaoni
Garhwali
Nepali
Dogri
Kangri
Mandeali
Mahasui
Northern zone
Sinhala
Maldivian
Indic
Indo-Aryan
Bosnian
Croatian
Serbian
Slovene
Macedonian
Bulgarian
Czech
Albanian
Armenian
Greek
Hellenic
Armenian
Albanian
Celtic
Gaelic
Welsh
Cornish
Breton
Sindhi
Kashmiri
Northwestern zone
Mina
Panjabi
Seraiki
Mirapuri
Hindko
Ossetian
Pashto
Talysh
Dimli
Gilaki
Baluchi
Kurdish
Likai
Hazaragi
Tajiki
Luri
Persian
Iranian
Indo-Iranian
Indo-European
European
Germanic
West Germanic
Anglo-frisian
Frisian
Scots
Afrikaans
Dutch
Low Franconian
Flemish
North Germanic
Icelandic
Faroese
Danish
Swedish
Norwegian
The
Indo-European
&
Uralic
-Language Families-
Finnish
Estonian
Sami
Hungarian
Mari
Moksha
Erzya
Komi
Udmurt
Samoyedic
Khanty
Mansi
Finnic
Ugric
Finno-Ugric
Uralic

TALLINN UNIVERSITY OF TECHNOLOGY

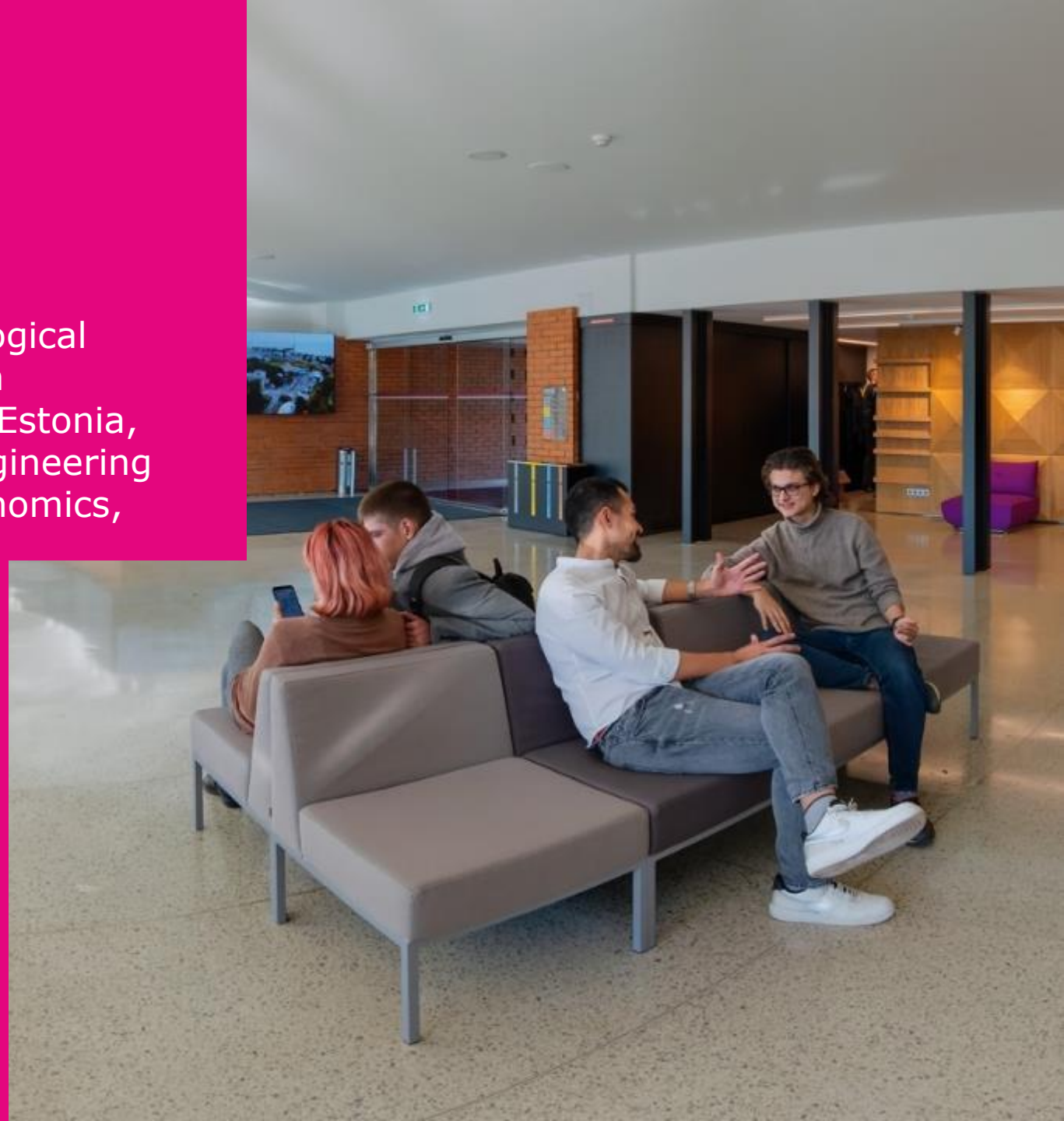
TALLINN UNIVERSITY OF TECHNOLOGY

-> To lead Estonia and the world into a sustainable digital future

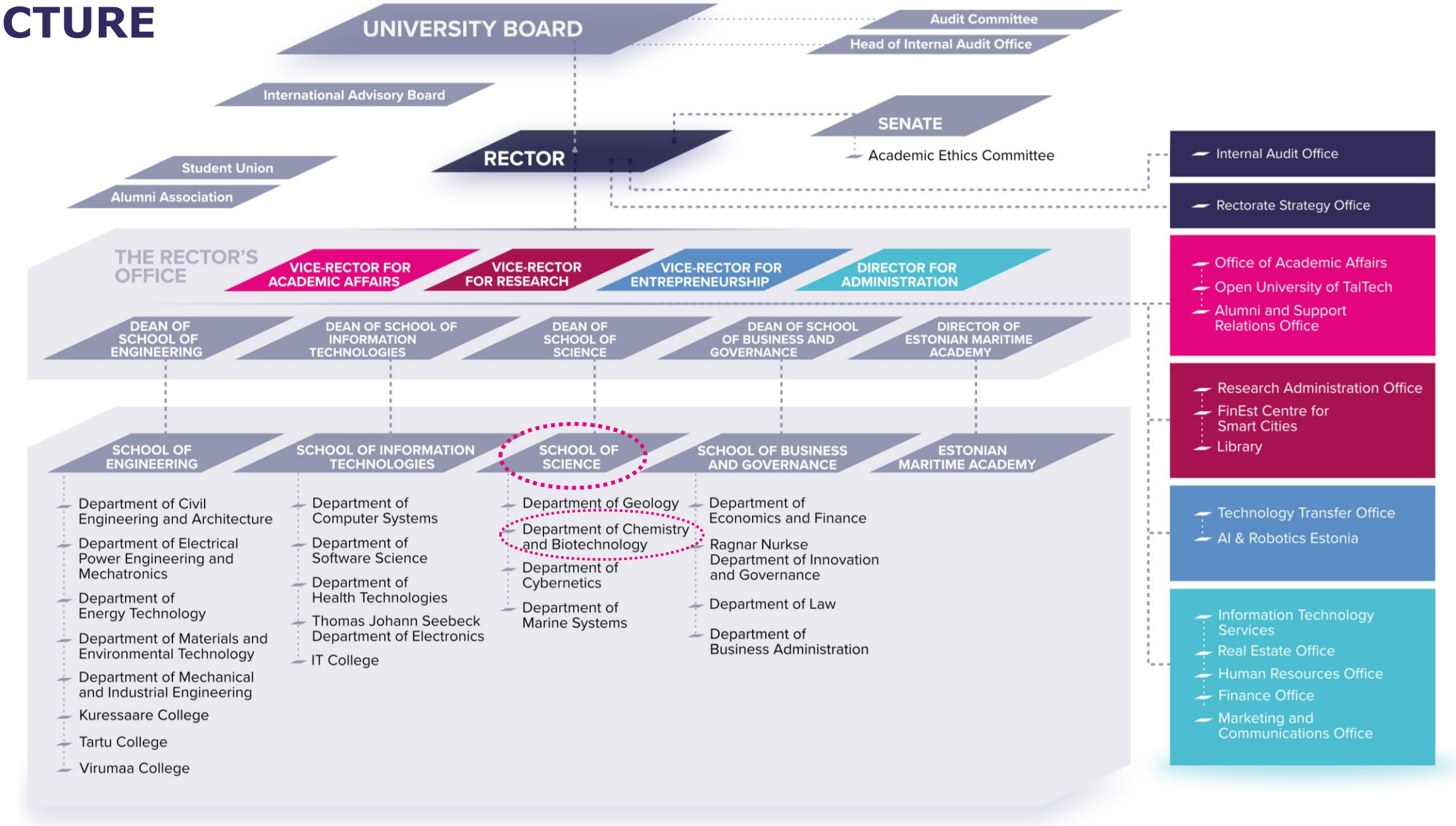
- Founded in 1918, TalTech is the sole technological university in Estonia. It is the only flagship in engineering and IT science and education in Estonia, providing higher education at all levels in engineering and technology, information technology, economics, science, and maritime.

- TalTech is a research-based university offering Bachelor's, Master's and Doctorate degrees in **technology, applied science, IT, business and maritime studies**.

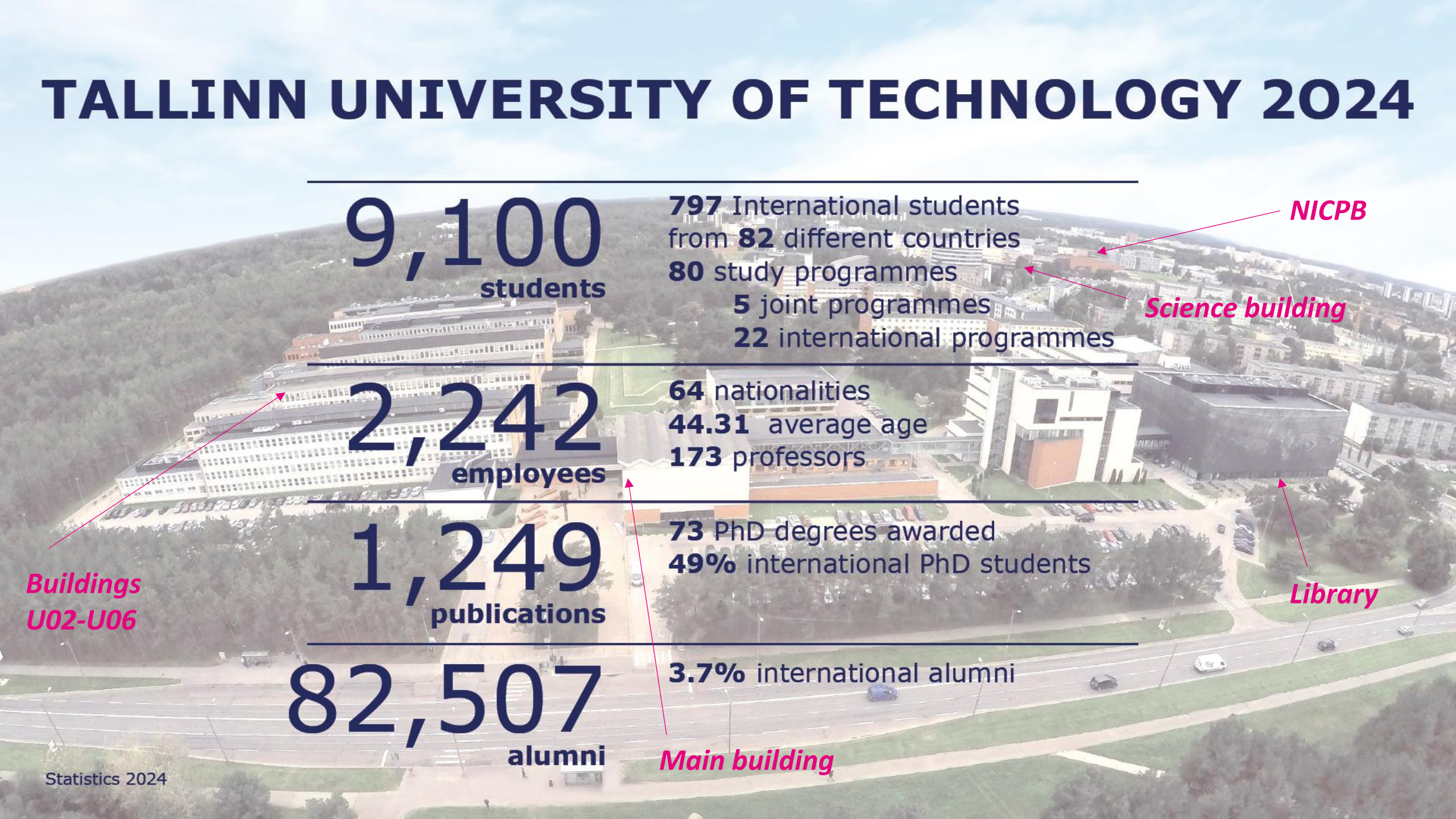
- As a leader in science, technology, and innovation, the school maintains constant interaction with universities around the world, bringing together scientists, students, and entrepreneurs.



STRUCTURE 2024



TALLINN UNIVERSITY OF TECHNOLOGY 2024



9,100 students

797 International students
from **82** different countries
80 study programmes
5 joint programmes
22 international programmes

2,242 employees

64 nationalities
44.31 average age
173 professors

1,249 publications

73 PhD degrees awarded
49% international PhD students

82,507 alumni

3.7% international alumni

NICPB

Science building

Buildings U02-U06

Library

Main building

Statistics 2024

INNOCHEMBIO
GENERAL INFORMATION

INNOCHEMBIO GENERAL INFORMATION

- **INNOCHEMBIO** (Innovative Chemistry and Biotechnology for a Sustainable Future) is an **MSCA COFUND Doctoral Programme** dedicated to advancing research in the field of **chemistry and biotechnology**.
- Each research project will be **supervised by two or three academic staff members**, including one from an associate partner. All doctoral candidates (DCs) will have a direct experience at a private company: at least 2-3 weeks internship at AS TFTAK, AIÖ Tech OÜ, Cambrex Tallinn AS or Icosagen AS if their project does not include a co-supervisor from the industry.
- **The *short-term mobility*** (secondments, conferences, etc.) is intended to enhance the efficiency and quality of doctoral studies, to create international and interdisciplinary networks and to develop different skills. The programme covers the daily allowance, accommodation, travel costs, and participation fee.
- ***Long-term mobility*** is designed to enable the DC to spend 6-16 months **at the lab of an associate partner supervisor**. The length of the long-term mobility will be decided together with the supervisors and the DC.
- Each doctoral candidate will have someone local helping them, to help integrate into the university environment and system as well as to the daily life.
- Recruited candidates will be **enrolled** as PhD students and **employed** as Early-Stage Researchers with a 4-year full-time contract in TalTech or National Institute of Chemical Physics and Biophysics (NICPB).
- **Gross salary** prior to employee tax deduction: €2,500 (-> net ~1880 €). All taxes will be automatically deducted from the income before payment.
- Duration: 48 months

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EXTRA CURRICULUM ACTIVITIES FOR INNOCHEMBIO PHD STUDENTS

- **Diversity and inclusion principles workshop**: online training offered by the Estonian Human Rights Centre followed by a 3 h interactive workshop onsite.
- **"ABC of equal treatment"** and **"A colleague with special needs and his/her support"**: One day seminars offered by TalTech's Well-Being centre focusing on equality in the workplace, supporting colleagues with diverse needs, and promoting mental health awareness.
- **Introductory ethics course**: offered by the Academic Ethics Committee of TalTech. Consists of three modules, each of 3 or 6 h. Topics: academic honesty, ethics in research, ethical organizations.
- **Business strategies**: Seminars with invited lecturers from companies (e.g. SafePAS OÜ, ÄIO tech OÜ, Raw Edge OÜ) to share entrepreneurial experience on how to transfer knowledge to the industry, on the principles of startups and on IPR.
- **Seminars on IPR**: given by the Estonian Patent Office.
- **Seminar on IPR-related knowledge, commercialization of innovations and leadership**: Three-day seminar given by TalTech TTO.
- **Seminars on startups and on the use of AI**: given by Technopol and by TalTech.
- **Seminars on society engagements**: invited lectures from the Republic of Estonia Health Board and the Ministry of Climate.
- **sTARTUp Day**: All DCs will attend once during their studies the sTARTUp Day festival in Tartu and will have the opportunity to join the biotech-oriented side event of the festival.It is a three-day startup-minded business festival, bringing together startups, traditional entrepreneurs, investors, innovators, and students. It comprises around 150 world-class speakers and a pitching stage with more than 300 young talents.

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EXTRA CURRICULUM ACTIVITIES FOR INNOCHEMBIO PHD STUDENTS

Activities organized by the Doctoral School:

- Summer school on career planning
- Workshop on science DEC
- Workshop on time and stress managements
- Career conference

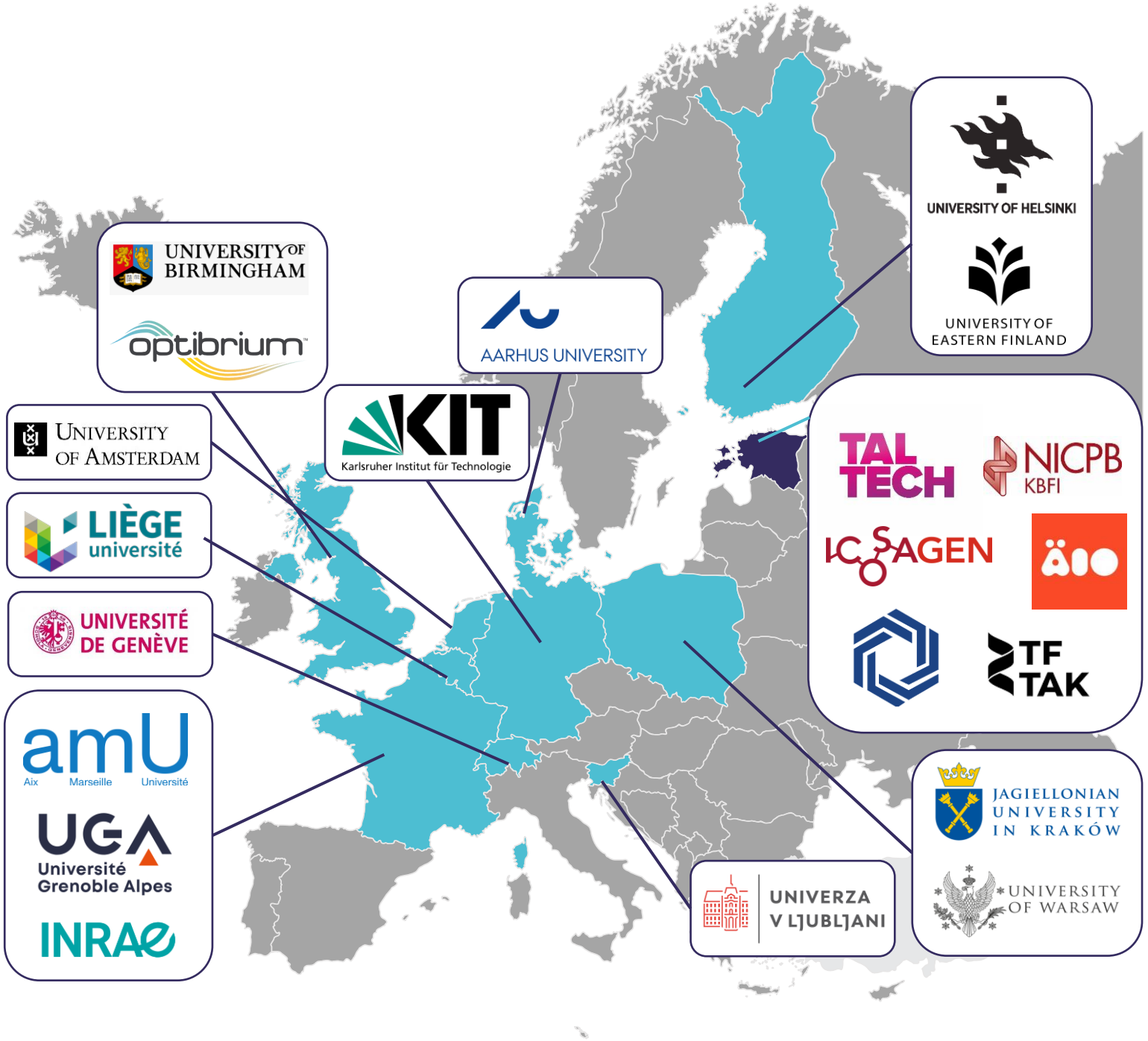
Activities organized by Department of Chemistry and Biotechnology (DCB):

- DC annual workshop
- Scientific seminar on sustainability
- Seminars by invited top experts

INNOCHEMBIO PARTNERS

INNOCHEMBIO IMPLEMENTING AND ASSOCIATED PARTNERS

- INNOCHEMBIO has **1 implementing partner** - National Institute of Chemical Physics and Biophysics (NICPB). For INNOCHEMBIO, NICPB houses the Laboratory of Environmental Toxicology, and several laboratories focused on fundamental research in NMR technologies with expertise dating back decades. Importantly, the PhD training activities conducted by NICPB are funded through TalTech. Three of the INNOCHEMBIO PhD candidates will be employed by NICPB.
- INNOCHEMBIO has **19 associate partners from 11 European countries**, involving both academia and industry. The partners are the following: Optibrium Inc., Karlsruhe Institute of Technology, The University of Warsaw, Institut national de recherche pour l'agriculture, l'alimentation et l'environnement, University of Helsinki, The University of Amsterdam, Université Grenoble Alpes, SafePAS, Jagiellonian University in Krakow, University of Geneva, University of Ljubljana, Aix-Marseille Université, Aarhus University, Universite de Liege, The University of Eastern Finland, University of Birmingham, AS TFTAK, AIÖ Tech OÜ, Icosagen AS.



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INNOCHEMBIO
15 PHD THESIS PROJECTS

15 DOCTORAL RESEARCH TOPICS

- **Machine Learning Interatomic Potentials for Chemical Reactions**
  Supervisory team: Dr. Mario Öeren (TalTech), Dr. Matthew D. Segall (OPTIBRIUM LIMITED, UK), Prof. Toomas Tamm (TalTech)
  More info: https://taltech.ee/en/innochembio/oeren
- **Affordable but High-Sensitivity NMR Spectroscopy**
  Supervisory team: Dr. Indrek Reile (NICPB), Dr. Sören Lehmkuhl (Karlsruhe Institute of Technology, DE), Dr. Kerti Ausmees (NICPB)
  More info: https://taltech.ee/en/innochembio/reile
- **Droplet Microfluidic Tools for Sustainable Biotechnology**
  Supervisory team: Prof. Ott Scheler (TalTech), Prof. Tomasz Kaminski (University of Warsaw, PL), Dr. Simona Bartkova (TalTech)
  More info: https://taltech.ee/en/innochembio/scheler
- **Gene Editing in Solanaceous Crops for Resistance Against Potyviruses**
  Supervisory team: Dr. Cecilia Sarmiento (TalTech), Dr. Jean-Luc Gallois (INRAE, FR), Dr. Triin Vahisalu (TalTech)
  More info: https://taltech.ee/en/innochembio/sarmiento
- **Molecular Regulation of Plant Abiotic and Biotic Stress Tolerance in Protein Crop Faba Bean**
  Supervisory team: Dr. Triin Vahisalu (TalTech), Prof. Alan Schulman (University of Helsinki, FI), Dr. Cecilia Sarmiento (TalTech)
  More info: https://taltech.ee/en/innochembio/vahisalu

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15 DOCTORAL RESEARCH TOPICS

- **Asymmetric Electrochemistry in Flow**
  Supervisory team: Prof. Maksim Ošeka (TalTech), Prof. Timothy Noël (The University of Amsterdam, NL), Prof. Tõnis Kanger (TalTech)
  More info: https://taltech.ee/en/innochembio/oseka
- **AMP and ADP Heterogeneity in Cellular Microdomains**
  Supervisory team: Prof. Marko Vendelin (TalTech), Prof. Uwe Schlattner (Université Grenoble Alpes, FR), Dr. Rikke Birkedal (TalTech)
  More info: https://taltech.ee/en/innochembio/vendelin
- **Green Novel Technologies for Forensic Research on Drugs (NOVTECH-DRUGS)**
  Supervisory team: Prof. Jekaterina Mazina-Šinkar (TalTech), Prof. Michał Woźniakiewicz (Jagiellonian University, PL)
  More info: https://taltech.ee/en/innochembio/mazina-sinkar
- **Safe-And-Sustainable-By-Design Approaches for Nanocomposites in Environmental Remediation**
  Supervisory team: Dr. Monika Mortimer (NICPB), Prof. Vera I. Slaveykova (University of Geneva, CH)
  More info: https://taltech.ee/en/innochembio/mortimer
- **Ecotoxicological Profiling of Prioritized Plastics Additives in Freshwater and Soil**
  Supervisory team: Dr. Margit Heinlaan (NICPB), Prof. Anita Jemec-Kokalj (University of Ljubljana, SI), Dr. Irina Blinova (NICPB)
  More info: https://taltech.ee/en/innochembio/heinlaan

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15 DOCTORAL RESEARCH TOPICS

- **Lignin-Integrated Conductive Polymers for Advanced Applications**
  Supervisory team: Dr. Yevgen Karpichev (TalTech), Prof. Jean-Manuel Raimundo (Aix-Marseille Université, FR)
  More info: https://taltech.ee/en/innochembio/karpichev
- **Asymmetric Co-Catalytic Cycloadditions**
  Supervisory team: Dr. Mikk Kaasik (TalTech), Prof. Karl Anker Jørgensen (Aarhus University, DK), Dr. Mario Öeren (TalTech)
  More info: https://taltech.ee/en/innochembio/kaasik
- **Microbiome in Plant Virus Infections**
  Supervisory team: Dr. Merike Sõmera (TalTech), Prof. Sébastien Massart (University of Liège, BE), Dr. Inga Sarand (TalTech)
  More info: https://taltech.ee/en/innochembio/somera
- **Sustainable Valorization of Industrial Mineral Residues: Comprehensive Characterization and Advanced Material Applications**
  Supervisory team: Dr. Birgit Mets (TalTech), Prof. Vesa-Pekka Lehto (The University of Eastern Finland, FI), Dr. Kristiina Kaldas (TalTech)
  More info: https://taltech.ee/en/innochembio/mets
- **Organic reactions under mechanochemical activation**
  Supervisory team: Prof. Riina Aav (TalTech), Prof. Tomislav Friščić (University of Birmingham, UK), Dr. Dzmitry Kananovich (TalTech)
  More info: https://taltech.ee/en/innochembio/aav

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APPLICATION PROCESS

APPLICATION PROCESS DESCRIPTION

- INNOCHEMBIO application process in the first call is open from the **1st of July to 31st of August 2025**.
- Applications are accepted only through the official application platform Glowbase.
- All the information and guidelines about the application process can be found on our website: https://taltech.ee/en/innochembio/application-process

- It should be kept in mind that the candidates are not allowed to contact the supervisors directly!

APPLICATION PROCESS IS OPEN UNTIL 31st OF AUGUST 2025

- The applicants can **select up to two research topics** connected to specific supervisory teams with a preference order that shall be marked in the application documents (eligibility statement).
- The INNOCHEMBIO programme has additional requirements compared to the standard TalTech application process.

- If any of the required documents (**CV, motivation letter, copies of study records and diplomas, copy of ID, reference letters, eligibility statement**) are missing, **the candidate will not be eligible to proceed to the selection stage.**
- NB! The candidate must upload all the necessary documents themselves!

MANDATORY FORMS & SUPPORTING DOCUMENTS

- **Eligibility Statement**

This document is mandatory and must be submitted with your application. Please review it carefully to ensure you meet all the required criteria.

- **Application Checklist**

Use this checklist to track your progress and verify that your application is complete and accurate. It is designed to help you avoid common mistakes and ensure all necessary information is included.

- **Appeals Form**

If you wish to contest a decision regarding your application, this form allows you to formally submit an appeal. Be sure to follow the instructions provided in the 'Appeals' section on the website of the programme.

ELIGIBILITY STATEMENT FORM

	Yes	No
1. I have not resided or carried out my main activity (work, studies, etc.) in Estonia for more than 12 months during 31.08.2022-31.08.2025. (Compulsory national service or a procedure for obtaining refugee status under the Geneva Convention are not counted.) If you have resided or carried out your main activity in Estonia during this time, indicate the number of days:		
! 2. I am eligible and ready to apply for an Estonian visa (for candidates from countries with visa requirements). If, from a country without visa restrictions, only indicate your nationality		
3. I hold an MSc degree and can be a doctoral candidate (i.e. I am not already in possession of a doctoral degree).		
4. I understand that any document with AI generated text will not be evaluated and considered in either stage of the evaluation process.		
5. I understand and accept that in order to finalize the admission process certified true copies (and certified translations, if the original document has not been issued in English) of academic qualification documents, (unless graduated from an Estonian university) must be provided to TalTech.		

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FIELDS IN GLOWBASE

- Personal data
- Application category
- Research field priorities
- Position priorities
- Questionnaire
- Degrees
- Additional documents
- Notes attached to this application

Motivation letter (max 1 page), CV, reference letters, certificate of language proficiency and eligibility statement!

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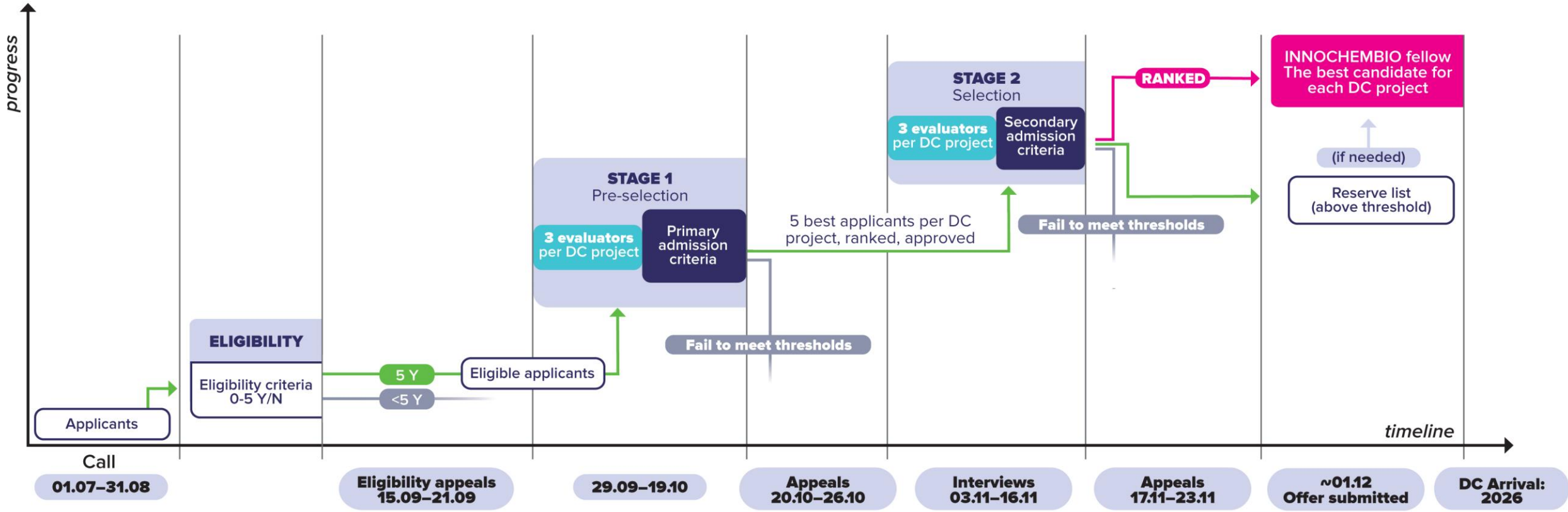
TIMELINE OF THE APPLICATION PROCESS
(Y=YES, N=NO)



EVALUATION CRITERIA

	Criterion	Subcategories (and points awarded) and explanations	Subscore	Multiplier	Total points
1	Study record	0-5: the average grade of MSc or equivalent studies (*threshold: 3*) 0-5: the grade of MSc thesis, final exam or equivalent (*threshold: 3*)	0 – 10	3	30
2	Relevant professional experience	0-5: Relevant practical experience in the field related to the chosen topic 0-5: Participation in scientific projects, teaching/supervision experience 0-5: Scientific publication record (as author or co-author), evaluated by quality, quantity, and contribution; number of pending or awarded patents and similar IPR; oral presentations and posters in scientific conferences, seminars, etc.	0 – 15	2	30
3	Motivation	Motivation letter's relevancy with the selected research topic (*threshold: 3*)	0 – 5	4	20
4	Further education	Participation in advanced courses, seminars, summer schools, and experience abroad (additional points)	0 – 5	1	5
5	References	Evaluations from one supervisor and one professor/lecturer	0 – 5	2	10
6	Activism	Involvement in non-academic science activities (e.g., science popularization)	0 – 5	1	5
		TOTAL			*100*

- Be mindful of the criteria which have specific thresholds – if these are not met, the application will not be evaluated!

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INNOCHEMBIO grant agreement ID: 101217295

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Estonian Research Council

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