



Wrocław University
of Science and Technology



Blended Intensive Program



Blended Intensive Program 2024

CIRCULARITY OF POLYMERS

LEAFLET

Wrocław University of Science and Technology
Wrocław, Poland
18-22 march 2024





Blended Intensive Program



Wrocław
University of
Science
and Technology

CO-ORGANIZERS



Universiteit
Antwerpen



Instituto Superior de
Engenharia do Porto



Universitat
de Girona



HELHa

Haute École Louvain en Hainaut

KU LEUVEN



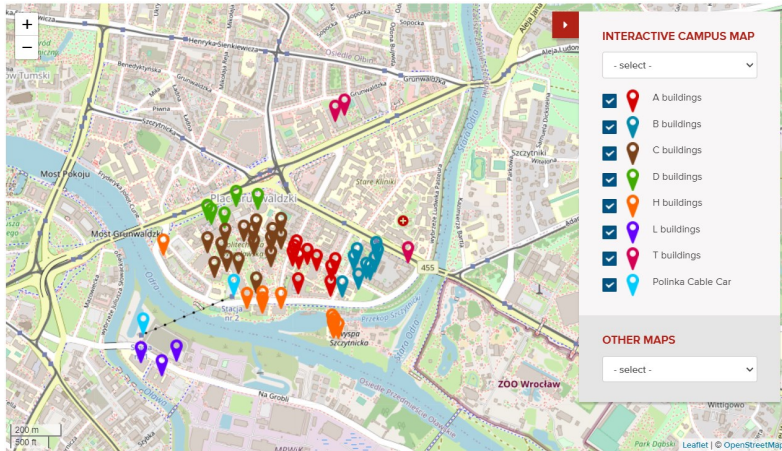
**HOCHSCHULE
MERSEBURG**



Locations

Wrocław Tech University Campus

Wybrzeże Wyspiańskiego 27, 50-370 Wrocław, Poland



Important dates

Start virtual component

End of February 2024

In-person classroom

18-22 March 2024

End virtual component

Middle of May 2024



Details and contact

Target group

Bachelor/Eng. (from 3rd year) and master (chemical, biochemical or materials) engineering students (minimum requirement: completed course on organic chemistry and polymers)

Credits and Administration fees

CREDITS

3 ECTS

Erasmus Plus students

No fee

Non-Erasmus Plus stu-

dents

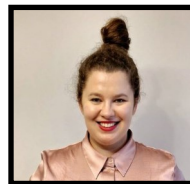
250€

Contact



Anna Jakubiak-Marcinkowska, PhD

anna.jakubiak.marcinkowska@pwr.edu.pl



Anna Siekierka, PhD

anna.siekierka@pwr.edu.pl



Details and contact

Short program description

At the beginning of the twentieth century, human civilisation stepped into the new Age of Plastics - materials that dominated all aspects of society. Nowadays, no progress has been made in new technologies, and simple life activities cannot be done without polymeric materials. This naturally led to the development of modern polymer chemistry and processing technologies, but at the same time, set engineers and societies facing severe challenges connected with the growing amount of plastic wastes, macro- and micropollutants in landscapes, oceans, air and human bodies, large energy consumption, limited resources for polymer production and lack of legal regulations dedicated to the complete life cycle of plastics. Those challenges led to the goal for upcoming years – to make plastic production and management of their life cycle more sustainable and effective – and to reach it, intensive cooperation between scientists, engineers, politicians and society is needed.



Details and contact

Aim of The Circularity of Polymers

The aim of „The Circularity of Polymers” program is to propose a state-of-the-art circular value chain for various polymer types, taking into account the material’s properties, complexity of common plastic materials, recent innovations in the given field (e.g. recycling types, new sorting technologies, bio-based materials and bioplastics etc.) and currently existing waste management schemes. During this Blended Intensive Program visions, methodologies and best practices will be shared and discussed between professors and students virtually as well as face to face in order to set the new horizon for circular polymers. Special session with industrial experts will be dedicated to the today’s challenges in plastics waste types.



Details and contact

Tentative program

Virtual part

- ◆ theoretical preparation to in-person week (introductory reading on polymer synthesis, properties and processing techniques)
- ◆ international team work on defined topics under supervision of BIP lecturers and doctoral students

In-person international week (Wrocław Tech)

Day 1 (evening): registration, general introduction to the BIP program

Day 2: polymer synthesis and plastics preparation, polymer additives

Day 3: recycling of plastics, sorting techniques and MFA

Day 4: heteropolymers, bio-based materials and biopolymers

Day 5: today's challenges

* presentations session

Day 6: sustainability assessments and policy

Virtual part and evaluation

- ◆ Hand-in of written report, presentations of the assignments



Details and contact

Assignments and evaluation

The students will make an assignment in international groups with three main targets:

(1) get familiar with real plastic waste objects or ideas/techniques used for the management of their life cycle and use this for reflection on the course,

(2) make an international comparison,

(3) integrate the learnings of the course lectures into practical examples.

In the assignments, the students collect their own waste or industrial samples and characterise them on a material level basis (e.g. which polymers are used), using statistics to compare their datasets or investigate some further processing technologies used to improve their life cycle. They put this into the perspective of national statistics on post-consumer plastic waste. Furthermore, they investigate how plastic waste is currently treated in their respective countries, and finally, they describe future evolutions.

All instructors of organising partners are expected to participate in the (1) supervision of the groups and (2) evaluation of the final papers and presentations in May 2024.



BIP 2024 Application Procedure*

**please make sure there is an inter-institutional agreement between our Universities*

Application Step	Procedure	Date
1st: recruitment at Home Universities	according to the individual requirements of each partner University	given by Partners
2nd: nomination to Wroclaw Tech	Information about nominated students should be sent to Wroclaw Tech International Office via e-mail (to anna.wojcik@pwr.edu.pl or barbara.jarosz@pwr.edu.pl) or directly via IRC system (for partners who used IRC before). <u>Nomination should include following information:</u> <ul style="list-style-type: none"> • student's name • student's e-mail address • type of mobility (BIP) and period 	30.10 — 30.11.2023
3rd: students application via IRC system	Students will receive email with information about application process in our online IRC system (we require scanned documents in on-line IRC system) Students will have to provide the following documents in the registration system as well as fill in their personal data in the IRC profile: Learning Agreement for BIP (general BIP study plan, duly signed and stamped by Home University Departmental Coordinator) Copy of health insurance (e.g. European Health Insurance Card)	Deadline: 10.12.2023
4th: approval by WroclawTech	List of accepted students will be announced by mail to Partner Universities.	22.12.2023
5th: announcements about team members	Students will be ascribed to particular project groups and informed directly by the organizers.	19.01.2024.