

POCEK BULLETIN

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Development of application potential in the field of polymeric materials in the context of fulfilling the principles of the circular economy (POCEK)

Since the publication of the first Bulletin in May this year, the POCEK project has made significant progress. The first report on the implementation of the project has been successfully submitted, which represents an important milestone confirming the correct direction and professional quality of the project's activities to date.

SCIENTIFIC OUTPUTS AND NEW FINDINGS

In the first half of 2025, six scientific papers were published as part of the POCEK project, reflecting the intensive research activities of the POCEK team. The publications focus on innovative approaches to the use of polymer materials in accordance with the principles of the circular economy – i.e., effective recycling technologies and minimization of environmental impact. In addition, eight project proposals were submitted to national and international calls for proposals on the implementation of circular economy principles in the polymer technology sector.

NEW EQUIPMENT

In order to take our research to the next level, we have purchased state-of-the-art equipment that significantly expands our analytical capabilities:

- Liquid chromatograph with multi-detection – enables detailed analysis of the composition of polymer mixtures, including the detection of trace substances and degradation products.
- Real-time quantitative polymerase chain reaction (RT-PCR) device – key for monitoring the biological aspects of polymer materials, especially in the area of biodegradation and interaction with microorganisms.



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Tomas Bata University in Zlín
Centre of Polymer Systems

Thanks to these technologies, we are able to conduct research with greater accuracy, speed, and complexity, which brings new insights not only to the academic sphere, but also for industrial partners.

MEMORANDUM OF COOPERATION

On June 12, Tomas Bata University in Zlín signed a memorandum of cooperation with GRUPO ANTOLIN OSTRAVA s.r.o. as part of the POCEK project. 2025 Memorandum of Cooperation with GRUPO ANTOLIN OSTRAVA s.r.o. The aim of the memorandum is to strengthen mutual cooperation, particularly in the field of research and development of new materials and technologies that support sustainable development and the principles of the circular economy. The cooperation will take the form of sharing practical experience, transferring knowledge between the academic and corporate spheres, and jointly preparing grant projects.

POCEK PROJECT INDUSTRIAL COUNCIL

Effective June 1, 2025, Directive UNI SŘ/01/2025 established the POCEK Project Industrial Council as an advisory body. The POCEK Project Industrial Council acts as an advisory and consultative body to the project manager in the area of research activities. The members of the Industrial Council are representatives of CPS expert teams, representatives of the Technology Transfer Center of Tomas Bata University in Zlín, and representatives of external partners from industry and other research organizations. Each member brings a unique perspective to the project, which enriches the discussion and helps shape the specific outputs of the project. The first official meeting of the Industry Council is scheduled for October 2025. Council members will be briefed on the progress of the project to date and the planned outputs, and will have the opportunity to actively participate in the discussion on priorities, methods, and forms of cooperation.

PRESENTATION OF THE POCEK PROJECT

- June 5, 2025, in Dobřany at the 36th meeting of directors of science and technology parks in the Czech Republic
- June 5-7, 2025, in Prague at the Science Fair 2025, the largest popular science event in the Czech Republic
- June 9-12, 2025, in Mongolia at the Mongolian University of Science and Technology
- August 22, 2025, in České Budějovice at ZEMĚ ŽIVITELKA 2025
- September 9, 2025, in Kroměříž at World of Machining 2025
- September 26, 2025, in Zlín at the Center for Polymer Systems during a presentation to representatives of LAB University of Applied Sciences and LUT University, which together form the LUT Universities educational alliance, Finland
- September 26, 2025, in Zlín at the Center for Polymer Systems during Researchers' Night 2025



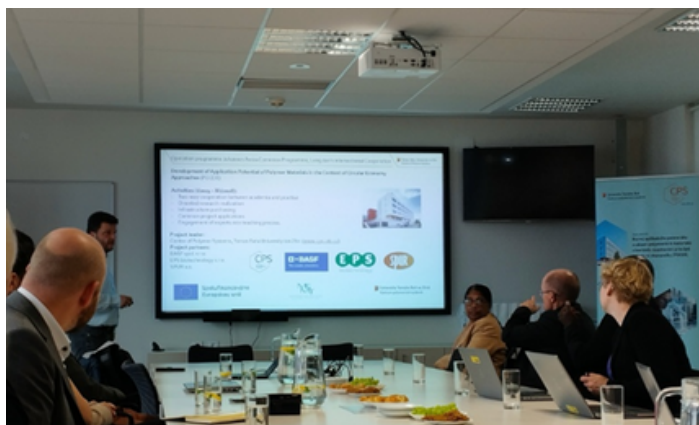
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PLASTKO 2026

The Centre of Polymer Systems, the Technology Transfer Center and the Plastics Cluster would like to invite you to the PLASTKO 2026 conference, which will take place from April 22 to 23, 2026 at Tomas Bata University in Zlín in the building of the U18 Educational Complex.

UPCOMING EVENTS

In the coming months, the project will focus on expanding cooperation with industrial partners, testing new materials in real-world conditions, and publishing further results. The aim is not only to advance scientific knowledge, but above all to apply the project's outputs in practice, leading to more sustainable use of materials in line with the principles of the circular economy.

Planned events include a presentation of the project at the International Engineering Fair, which will take place from October 7 to 10, 2025, at the Brno Exhibition Center. The project will also be presented at the EAI International Conference on Management of Manufacturing Systems from October 8 to 10, 2025, in Slovakia.

On November 13, a professional workshop will be held at the Technology Transfer Center at TBU in Zlín, which will focus on the practical application of the project results and the connection between academia and industry. The workshop will provide a space for discussion, sharing experiences, and establishing cooperation between researchers and company representatives.

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NEW TECHNOLOGY TRANSFORMS BIOMASS INTO A VALUABLE MATERIAL AND ENERGY SOURCE

A new pyrolysis unit, custom-designed to meet the needs of research teams, has recently been launched at the Center of Polymer Systems. This advanced technology enables the decomposition of organic materials without air access, primarily producing gases that can be used as alternative fuels and solid carbonized material, known as biochar. Biochar is valued for its high porosity, stability, and low density.

The uniqueness of the new unit lies in its design, which responds to practical requirements. Positive feedback on the introduction of this technology has already been received, including from researchers at the Finnish LUT University of Technology, with whom the center collaborates on biomass processing and the development of materials for pollutant removal from water as part of the CirkArena project.

“We are opening a new chapter in research development at the Centre of Polymer Systems. The study of biomass recycling and valorization is a highly relevant topic with implications for agriculture, environmental protection, water purification, as well as energy storage, semiconductor technologies, and chemical synthesis,” says Prof. Sedlařík, Director of the Centre of Polymer Systems.

This new technology will significantly expand the research potential at the Centre of Polymer Systems and facilitate its transfer into practical applications.



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