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FUTUREbio

Dear Reader,

The first transnational meeting of “Let’s use biodegradable plastic for the future (FutureBio)” has been realized on 26th-27th of May 2022 in Denizli, Turkey. FutureBio is a two-year KA220-HED-Cooperation Partnerships in Higher Education project supported by Turkish National Agency, on biopolymers between eleven partners from Turkey and EU.

Pamukkale University (PAU) is the project coordinator, and Kırklareli University (KLU) and Selçuk University (SU) from Turkey, Fondazione Bruno Kessler (FBK), Cosvitec Società Consortile Arl (COSV), Università Degli Studi Di Trento (UNITN) and Indivenire srl (IND) from Italy, and Universitatea Tehnica Cluj Napoca (CNU) from Romania, and CTRL Reality Oy (CTRL) from Finland, and Ostbayerische Technische Hochschule Regensburg (OTHR) from Germany, and University of Applied Sciences of Southern Switzerland (SUPSI) from Switzerland are the project partners.

What are the Plastics and Biodegradable plastics?

Plastics are a wide range of synthetic or semi-synthetic materials that use polymers as a main ingredient. Modern world has met with plastic/polymeric materials for the first time in the 1400s after Columbus encountered a natural rubber ball in Haiti. Today, polymers have found a wide range of applications thanks to their lightness, easy formability, and find a wide range of uses, from kitchenware to artificial heart valves. Many polymers are used in packaging of food, textile, and machinery, and they are important parts of solid waste disposed of in solid waste landfills.

According to the EU reports, PM packaging parts represent about 8% of the overall refuse in the landfills. Besides all, microplastics which are tiny fragments below 5 mm in size, are a big problem for leakage of rivers, lakes, seas and oceans. They can remain intact for many years. Reuse in manufacturing, incineration for energy generation, biodegradation in compost or in soil can be counted as disposal processes for plastic wastes. To reduce all negativities caused by polymers, "A EU Strategy for Plastics in a Circular Economy" and "Plastic Waste: a EU strategy to protect the planet, defend our citizens and empower our industries" has been developed. In the EU, around 25.8 million tons of plastic waste are produced every year. EU reports also states that only 6% of plastic products are demanded in the EU as recycled plastics. Polymeric waste is frightfully increased with ‘single-use’ plastics each year. Reusability and nature degradable polymer production are important parts of these strategies. According to the European Green Deal Communication, reducing wastes, compensating carbon footprint emissions, saving resources, and sustainability are



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key priorities for the EU now and in the future. For a more livable and GREENER world, biopolymers should be developed and used.

Biodegradable plastic: What is, What is not?

A degradable plastic in which the degradation results from the action of naturally occurring microorganisms such as bacteria, fungi, and algae.

Biodegradation of organic materials is the result of the activities of microorganisms such as fungi, yeasts, actinomycetes, and bacteria. Fungi and bacteria represent a wide range of possibilities. Biodegradable plastics, "Green plastics", typically can be produced in various forms such as film and fibers, and are compatible with extrusion and moulding which are easy-to-apply production forms. Except some application area like starch-based loose-fill packaging market, Green plastics comprise less than 1% of today's plastics.

For a more livable world, biodegradable plastics should be recognized and used. Although research on green plastics is increasing day by day, their use is not at the desired level. Most people and most manufacturers either have no knowledge of these plastics or know very little.

FUTUREBIO Project

Project aims to make the use of innovative practices among university students, academic staff, industry employees, and the community and to increase the competencies of academics and students with in-place training. This project has been prepared in accordance with the European Union's strategy of developing cooperation, increasing quality and encouraging innovation in the learning activities of individuals and groups in the field of education and training. It is our priority to develop a high-performance digital technology for university students and industrial workers within the scope of the project. In this way, we aim to develop high quality digital technologies for education of universities and industrial institutions providing information of polymer and biopolymer and their manufacturing technologies all over Europe. We aim to improve capacity and flexibility in education by making digital tools.

Project Objectives:

The target group of the FutureBio project is all project stakeholders including the project team members, university teachers and students, industrial institutions and their workers, high school students and teachers, public and private institutions, associations, individuals, general society. The objectives of the FutureBio are classified depend on target groups of the project as follows:



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For ACADEMICIANS and university STUDENTS

- To create an innovative curriculum, open education resources (OERs), virtual reality (VR) tools, laboratory videos, a lecture guidebook,
- To encourage the development of biodegradable polymers (BDPs) and products via courses and outputs
- To guide them to prioritize in their academic career planning
- To increase the scientific competencies with in-place trainings

For INDUSTRY

- To create an industrial needs report, a value chain extending from lab to industry, from industry to environment and economy

For SOCIETY

- To raise social awareness that plastic pollution is an issue that needs urgent action
- To obtain awareness about BDP products

For PROJECT PARTNER

- To increase digital skills
- Developing new projects

Project Results:

- An innovative curriculum
- Online interactive training tools with interactive videos and animations in game format
- A Lecture Guide Book
- Virtual Reality (VR) applications

FUTUREBIO ACTIVITIES

Transnational Meetings: 5 transnational meetings will be held respectively in Romania, Finland, Italy, Turkey (Konya), Italy and Germany.

Information meetings: People who work on polymer and its production from the public and private sector, and Municipality will be invited.

International workshop: FutureBio has a workshop which will be held by KLU in Kırklareli/ Turkey. This event will be organized to present all the outcomes of the project.

Webinars: During the project, 10 webinars will be held on biopolymers, their production, use, and technological training materials.





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Social awareness activities: 10 awareness activities will be carried out on special days related to the environment.

Contacts

You can follow and access the project outputs and news via our website:
<https://www.futurebioproject.eu/>

FutureBio Project Instagram page: [@futurebioproject](https://www.instagram.com/futurebioproject)

FutureBio Project YouTube channel: [Future Bio](https://www.youtube.com/channel/FutureBio)

For all kinds of questions and information: futurebio.pau.edu.tr

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