



BioICEP  解塑再用  
Bio Innovation of a Circular Economy for Plastics

December 2022



## Federation of European Microbiological Societies Conference on Microbiology 2022

Federation of European Microbiological Societies in association with Serbian Society for Microbiology organised FEMS Conference on Microbiology, which took a place from 30 June to 2 July 2022 in Belgrade, Serbia. Main goal of this event was to support microbiologists with their work, promote the best in microbiology research to the world, and bring microbiologists together.

BioICEP PhD students presented their research with posters (Eduardo Lanzagorta Garcia: "*Preparation and antimicrobial evaluation of bacterial cellulose/poly(3-hydroxybutyrate) blends activated with curcumin for biomedical and food packaging purposes*"; Diana Garza Herrera: "*Exploring biodegradability of bacterial cellulose/polyhydroxybutyrate blends*"; Everton Henrique Pereira: "*Mechanical evaluation of bacterial cellulose-based blends for biodegradable food packaging applications*"; Milena Stevanovic: "*Biocatalytic properties of two Streptomyces spp. co-isolated from rhizosphere soil of Papaver rhoeas*").



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## Dr. Olivia Adly presents the project at ACS Fall 2022 meeting

Dr. Olivia Adly from TUS Midlands presented joint work of BiolCEP partners on ACS Fall 2022 meeting on August 21 – 25 held in Chicago, USA. Ten thousands of chemistry professionals met to share ideas and advance scientific and technical knowledge. Dr. Adly presented her work in two sessions: ***“Rendering 100% Bioinert PE amenable for biodegradation”*** and ***“Enhanced bio-amenability of LDPE via high throughput reactive extrusion-assisted oxidation”***.

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## Our partners took a part in the 18th Symposium on Biopolymers in Sion

Our partners Dr. Jasmina Nikodinovic-Runic and Dr. Marija Reis presented their research at 18th Symposium on Biopolymers in Sion, Switzerland from the 13 – 16th of September. Dr. Nikodinovic-Runic will give a lecture titled: ***“Polyhydroxyoctanoate (PHO) blends for biomedical applications”***. Dr. Reis was presenting joint work of IBET and TUS titled ***“Valorisation of plastic wastes into microbial biopolymers”***. IBET PhD student Catia Gil has presented her research with the poster: ***“Characterization of the thermostable biosurfactant produced by Burkholderia thailandensis”***. ISBP is a successful series of symposia that is taking place usually every two years since the very first meeting in Toronto in 1988. This 18th edition was held on September 13 – 16<sup>th</sup> in presence mode in the oldest city of Switzerland, Sion, and organized by the University of Applied Sciences and Arts Western Switzerland (HES-SO) and the University of Stuttgart. ISBP2022 event was focused on (bio)polymers like polyhydroxyalkanoates (PHA), cellulose, pullulan, cyanophycin, polylactic acid (PLA), polyisoprenes (rubbers), but is also open for bio-based polymers like PEF and inorganic biopolymers such as

polyphosphate (polyP). More information on this event can be found at <https://www.isbp2022.com/>



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## European Researchers' Night 2022

Our Serbian partners from IMGGE took a part in the European Researchers' Night 2022. Dr. Jasmina Nikodinovic-Runic and her team presented BioICEP and BioECOLOGics recent findings through two interactive lectures titled: "**From plastic bottle to bioplastic**" and "**How can we get medicine from bacteria**" at the Serbian Academy of Sciences and Arts in Belgrade, Serbia. Dr. Filomena Freitas and her team from IBET presented their 3 ongoing European Research projects: BioICEP, USABLE PACKAGING and PROMICON in Lisbon, Portugal.

The European Researchers' Night is a Europe-wide public event that displays science's diversity and its impact on citizens' daily lives in a fun, inspiring way. This year, the event took a place in 26 countries on Friday 30 September 2022. The European Researchers' Night aims to bring research and researchers closer to the public, promote excellent research projects across Europe and beyond, increase the interest of young people in science and research careers and showcase the impact of researchers' work on people's daily lives.



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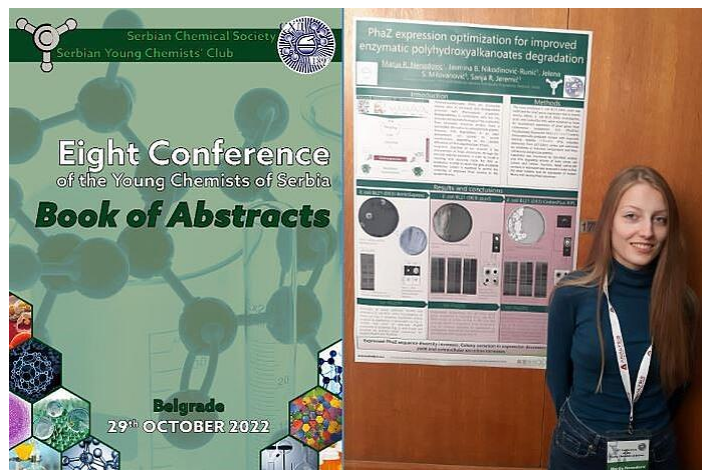
## 24<sup>th</sup> Annual Congress of the European Society of Veterinary Clinical Pathology

Dr. Jasmina Nikodinovic-Runic presented the BioICEP project at this year's 24<sup>th</sup> Annual Congress of the European Society of Veterinary Clinical Pathology in Belgrade, Serbia October 5-8th 2022. As an invited speaker she held a presentation titled: "***Microbial approaches in the treatment of plastic waste***". The aim of this conference was to bring together clinical pathologists and scientists to discuss and share views on innovations in clinical pathology and how to apply those in our everyday practice towards the goal of improving animals' welfare and as well as our community. More information on: <https://esvcp-belgrade.rs/>

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## Serbian Young Chemists' Club conference

8<sup>th</sup> Conference of young Serbian chemists was held in Belgrade on 29<sup>th</sup> of the October in Belgrade, Serbia. Miss Marija Nenadovic, IMGGE PhD student, presented her research titled "***PhaZ expression optimisation for improved enzymatic polyhydroxyalkanoates degradation***". There were 113 participants (103 posters and 10 oral announcements at the Conference).



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## K 2022 - the course of the trade fair meets the highest expectations

Our partners from TUS and AIMPLAS, led by our coordinator Dr. Margaret Brennan Fournet, took a part in K2022 fair in Dusseldorf this October. K is the world's largest trade fair for the plastics and rubber industry. It gathers the most important supplier of plastics and rubber machinery, raw and auxiliary materials and semi-finished products, technical parts and reinforced plastic products under one roof. It is an ideal platform to showcase products and innovations and to make business contacts. K was followed by a special exhibition under the theme "Visions in Polymers", that presents the trends and innovations of the industry. Special consideration is given to the subjects of energy efficiency and resource conservation. Organisers welcomed around 3330 exhibitors and 224000 visitors on the 8 days of the fair K in Düsseldorf this year.



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## Advanced Recycling Conference

Last 14-15 November, Alberto Barranca and Alicia Barbas, from AIMPLAS, attended the first edition of Advanced Recycling Conference, an event hosted by Nova-Institut in Köln (Germany), where they exhibited our project leaflets and answered the questions raised by the visitors in its stand. The event aims to provide an overview and in-depth insight into all available recycling technologies for various streams of different

plastics wastes as well as into political topics and environmental impacts. The ARC provides a new home for technology providers, related industries, waste management companies, brands and investors as well as policy makers and scientists active in the versatile and interdisciplinary field of recycling. By bringing together all relevant topics and experts, the event provides a framework for new partnerships, ideas, approaches, and value chains.



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## AMI Multilayer Flexible Packaging

The 14<sup>th</sup> edition of Multilayer Flexible Packaging, hosted by AMI, took place on 15-17 November at the Hilton Vienna Park Hotel, in Vienna, Austria. The three-day agenda covered the latest technical developments and market trends in this dynamic sector and provided a unique opportunity to hear from a panel of international experts on the latest trends, technologies and innovations in raw materials to end-use applications, bringing together companies from across the flexible packaging value chain. Our colleagues from AIMPLAS, in particular Luis Moreno and Lola Gómez, exhibited some project leaflets in their stand.



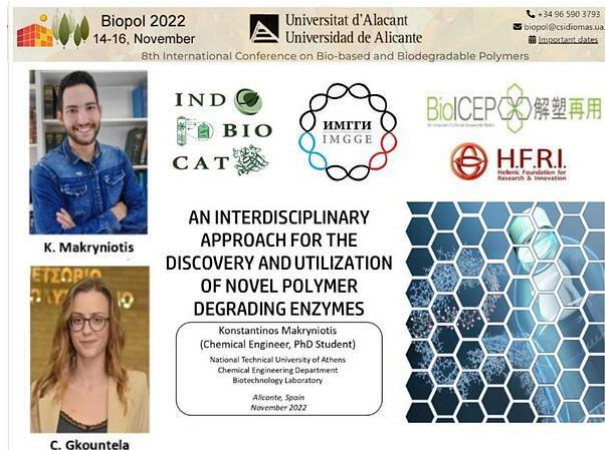
## Aquarama Trade Fair

BiolCEP partner from Avecom, Lutgart Stragier, has presented her research at the Aquarama Trade Fair. This trade fair and congress on water technology, is an unmissable annual event for all those active in the water sector. This event is aimed at all industry stakeholders. The congress offered interesting conferences provided by watercircle.be - essenscia - VMx, AquaFlanders, Vlario and CEBEDEAU on current topics in the water sector. The trade show offered an extensive display of products and services. During the Aquarama Trade Fair, trade show visitors and convention attendees had an ample time to network with exhibitors. Over 100 exhibitors took a part in this year's event in Leuven, Belgium on 20th of October.



## Biopol

8<sup>th</sup> International Conference on Bio-based and Biodegradable Polymers (BIOPOL) was held from 14 - 16<sup>th</sup> of November in Alicante, Spain and our partners from NTUA presented their research on this event. Konstatinos Makryniotis and Christina Gkoutela, PhD students from NTUA, held a lecture titled: "**An interdisciplinary approach for the discovery and utilisation of novel polymer degrading enzymes**". The goal of this conference was to offer an attractive scientific program while promoting contacts between participants in a relaxed and pleasant environment offered by the warm atmosphere in Alicante.



## CONAMA

Our colleagues from AIMPLAS attended the 16<sup>th</sup> edition of the Spanish Environmental Congress (CONAMA) from 21-24 November in Madrid, where they presented BioICEP as one of the projects they are involved in. This conference has been marked by a motto: "Lead the transformation. The moment is now!", as an inspiring message to continue working towards a more sustainable model of society. The event hosted over 5,000 attendees and one hundred activities marked by the need for an essential and urgent transformation.

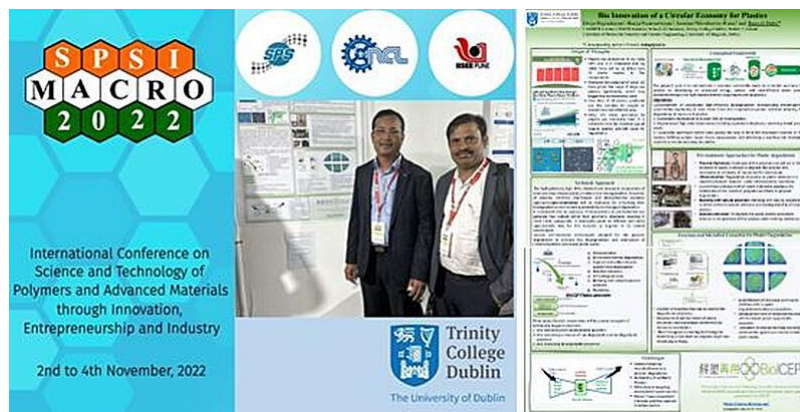


## SPSI-MACRO-2022 conference

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## World PET Biorecycling Summit

World PET Biorecycling Summit is the first congress dedicated to scientific advances in the field of enzymatic recycling organised by CARBIOS. Event took place in Paris, France, from 6 – 8<sup>th</sup> of December 2022, hosting over 70 people with scientific and/or industrial background. Carbios is a French company, a pioneer in the development and industrialization of biological technologies to rethink the life cycle of plastics and textiles. They have developed a unique enzymatic process that makes it possible to biologically recycle the second most widely used plastic in the world: PET. Unlike current recycling methods, their innovative process goes back to the basic constituents of PET and makes it possible to recycle all types of waste, whether clear, coloured, opaque, complex, or even polyester textiles. Dr. Marija Mojicevic from TUS and Brana Pantelic from IMGGE took a part in this event presenting poster titled: “Bio innovation of a circular economy for plastics”. For more details, visit the link: <https://www.carbios.com/en/>



## IMGGE Team presenting BioICEP on Serbian National Television

Dr Jasmina Nikodinovic-Runic and her Team talked about single-use plastics and the challenges that go with them on multiple occasions on Serbian National Television. They have presented the BioICEP project as a part of the solution on this subject.



## Our latest technical papers



Valorization of polyethylene terephthalate to muconic acid by engineering *Pseudomonas putida*

[Read it](#)

Enhanced antimicrobial activity of biocompatible bacterial cellulose films via dual synergistic action of curcumin and triangular silver nanoplates

[Read it](#)

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Assessing the time dependence of AOPs on the surface properties of polylactic acid

[Read it](#)

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Bacterial nanocellulose as green support of platinum nanoparticles for effective methanol oxidation

[Read it](#)

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Investigation of *Abortiporus biennis* lignocellulolytic toolbox; the role of laccases in polystyrene degradation

[Read it](#)

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Follow our activity!



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