2024 INNOVATION FORUM 4 PLASTICS

Boosting Plastic Recycling and Circularity

19 April, Brussels

CIRCULAR PLASTICS

cimpa

Funded by the European Union

Innovation Forum 4 Plastics

Bringing together innovative solutions for the circular economy

Innovation Forum 4 Plastics aims to showcase the innovative solutions of EU-funded projects to boost plastic recycling and circularity, reduce plastic pollution and thus, contributing to the EU Plastics Strategy, the EU Circular Economy Action Plan (CEAP) and related regulatory frameworks.

The 2024 edition of this event is organised as a side event to the **World Circular Economy Forum (WCEF)** in Brussels.

The event will feature presentations by different EU research and innovation projects of their solutions, panel discussions on the plastic waste challenges as well as clustering opportunities to maximize the sustainable and circular management and use of natural resources.

This briefting paper includes a summary of each EU-funded project that will be presented during the event.
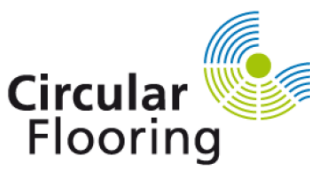
CIRCULAR PLASTICS CLUSTER

CIMPA - A CIrcular Multilayer Plastic Approach for value retention of end-of-life multilayer films

Project website: cimpa-h2020.eu	CIMPA seeks to develop the first multilayer plastic films recycling value chain. Sorting techniques like NIR and digital watermarking achieve high detection rates. The films, sorted by families were decontaminated and reprocessed with high efficiency. Mechanical recycling and physical recycling were then applied, depending on the waste family. The demonstrators were made by industrial partners for mechanical recycling and are ongoing for physical recycling route.

CIRCULAR FoodPack - Circular Packaging for Direct Food Contact Applications

Project website: circular-foodpack.eu	CIRCULAR FoodPack aims to facilitate the circular use of plastic food packaging. This sector contains 87% of European flexible plastic multi-layers. Multi-material laminates cannot be recycled by state of the art processes. The project produces high-quality recycled polyethylene using Tracer-Based-Sorting, deinking, solvent-based or mechanical recycling and deodorization. Innovative recyclable mono-material laminates enable the re-use in flexible food packaging and high value applications. Life Cycle and Cost Assessments, business modelling guide the developments.

SOL-REC2 - Innovative digital watermarks and green solvents for the recovery and recycling of multi-layer materials

Project website: solrec2.eu	This 36-month Sol-Rec2 project targets the development and implementation of ground-breaking strategies for improving the sorting, separation and recycling of pharma blister packs and laminate consumer packaging waste consisting of multiple layers of polymers and aluminium. Innovative digital watermark technologies will be further developed and progressed to TRL6 through successful demonstration of rapid and efficient sorting of multi-layer packaging.

MERLIN - Increasing the quality and rate of MultilayER packaging recycLINg waste

Project website: merlinproject.eu	Today, high-performance demands by the industry and the consumers result in 17% of total plastic packaging being made in multilayer material. Joining a partnership between sorting technology providers, recyclers, research centres, social innovation experts and end-users, the MERLIN project aims at designing innovative solutions for all the processes required to increase the quality and rate of recycled plastic materials coming from multi-layer packaging waste.

INNOVATIVE SOLUTIONS TO DESIGN & MANAGE SUSTAINABLE FOOD PLASTIC PACKAGING

STOPP - Strategies to prevent and reduce plastic packaging pollution from the food system	
Project website: stopp-project.eu	At STOPP, we're pioneering a transformative initiative to revolutionize the way we approach food packaging by working with all the stakeholders in the value chain to promote the "5 Rs": Refuse, Reduce, Redesign, Reuse, and Recycle. We're set on creating circular strategies that not only appeal to plastic production and processing but also drive awareness through a multi-actor network. Our strategic actions include analysing plastic waste impact, monitoring current usage, designing sustainable business models, boosting recycling efforts, and understanding consumer attitudes through an in-depth study.
MAGNO – Conquering new strategies to prevent and reduce packaging pollution	
Project website: magno-project.eu	MAGNO aims to improve the sustainability and efficiency of food packaging, promote directions for new policies, and increase social innovation. The project will examine plastic packaging value chains and create an Ecosystem Digital Twin to provide innovative and circular business strategies drawing a map of scenarios ahead. Furthermore, our approach considers the involvement of actors across the value chain to prevent and reduce plastic packaging pollution in Europe and the Mediterranean Sea.
VISS - Viable, safe and sustainable PHBV value chain for food packaging applications	
Project website: viss-project.eu	ViSS project will create a new value chain around PHBV (copolymer of the PHAs family) as a safe, sustainable, and cost-effective alternative to conventional plastics. ViSS PHBV will be produced from organic residues, safety formulated and transformed into high-performance food packaging, being mechanically recyclable and biodegradable. The ViSS circular value chain will be constructed under safe and sustainable criteria, accomplishing EU regulations and ensuring policy alignment.
REBIOLUTION – Novel biodegradable, REcyclable, BIO-based and safe plastic polymers with enhanced circuLar properties for food packaging and agricUltural applicaTIONs	
Project website: rebiolution-project.eu	REBIOLUTION aims to design and synthetize novel fully bio-based and biodegradable polyester blends based on 2,5-Furandicarboxylic acid (FDCA) and other bio-based monomers fit for specific product-market applications.

INNOVATIVE SOLUTIONS FOR CIRCULAR TECHNICAL PLASTICS

PRIMUS - Reforming secondary plastics to become the primary raw material choice for added-value products	
Project website: primus.project.eu	PRIMUS aims to strengthen the EU's plastic value chains by ensuring the supply and increased availability of waste plastics for reuse. It aims to connect value chain participants, develop quality control, samples, analysis methods, and improve the know-how for upgrading plastics for higher-value uses. PRIMUS seeks to establish legislative-compliant, privacy-safe, cost-effective, and practical solutions for utilizing recycled plastic wastes. Validating four business cases in automation and appliances, PRIMUS reduces investment risks and tackles the EU Circular Economy Plan's challenge of safely removing hazardous substances from plastics.
Green3D -Transforming plastic waste into High End Bespoke Furniture	
Project website: www.green3d.eu	GREEN3D pioneers sustainable manufacturing with 100% recycled ABS and PET filament, transforming waste into innovative 3D printed components. Revolutionizing automotive and furniture sectors, it champions a circular economy, delivering customizable, high-quality solutions for diverse industries.
Circular Flooring - New products from waste PVC flooring and safe end-of-life treatment of plasticisers	
Project website: www.circular-flooring.eu	CIRCULAR FLOORING project aims at establishing a circular economy for flexible PVC flooring with a TRL 6-7 dissolution based plastic recycling process that purifies critical substances, e.g. restricted plasticizers (phthalates), from waste PVC to achieve a high-quality, virgin-like recycled PVC. The removed phthalates will be transformed chemically into non-hazardous plasticizers. The recycled PVC will be used in the production cycle of new floor covering, pointing towards a circular economy.
PLAST2BCLEANED - PLASTtics to be CLEANED by sorting and separation of plastics and subsequent recycling of polymers, bromine flame retardants and antimony trioxide	
	The EU-funded PLAST2bCLEANED project focuses on the recycling of the most common WEEE polymers, bromine flame retardants and antimony trioxide using innovative technologies, and separates hazardous additives from plastics. Main results are: an innovative presorting prototype, realization of a TRL5 recycling pilot plant based on dissolution under superheated conditions, production of 9 kg of recycled ABS with mechanical properties comparable to virgin ABS and used to manufacture a

	new product. The process is more environmentally friendly compared to incineration

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AGENDA

Moderated by **Maria Vera** (EuRIC)

08.30-9.00	**Registration & Welcome Coffee**

09.00-09.20 **Opening and welcome to participants**
- **Sophie Sicard,** President of EuRIC's European Plastic Recycling Branch (EPRB)
- **Evdokia Achilleos,** Head of the Sector "Circular and bio-based economy and zero pollution", REA, European Commission

09.20-10.30 **Circular Plastics Cluster initiative: boosting plastics recycling and circularity.**
Showcase of the project results and discussion on synergies
- **CIMPA** - A CIrcular Multilayer Plastic Approach for value retention of end-of-life multilayer films | **Céline Chevallier** (IPC)
- **SOL-REC2** - Innovative digital watermarks and green solvents for the recovery and recycling of multi-layer materials | **Pascal Negré** (iPM2) & **George Theodosopoulos** (TWI)
- **CIRCULAR FoodPack** - Circular Packaging for Direct Food Contact Applications | **Esra Kucukpinar** (Fraunhofer IVV)
- **MERLIN** - Increasing the quality and rate of MultilayER packaging recycLINg waste | **Marianne Gravendeel** (Ioniqa)

10.30-11.00	**Coffee break**

11.00-11.45 **Innovative solutions to design and manage sustainable food plastic packaging**
Overview of new projects
- **STOPP** - Strategies to prevent and reduce plastic packaging pollution from the food system | **Sarianna Palola** (VTT)
- **MAGNO** – Conquering new strategies to prevent and reduce packaging pollution | **Ignacio Fernández-Pacheco Ruiz** (IDENER)
- **VISS** - Viable, safe and sustainable PHBV value chain for food packaging applications | **Carmen Fenández Ayuso** (CETEC)
- **REBIOLUTION** – Novel biodegradable, REcyclable, BIO-based and safe plastic polymers with enhanced circuLar properties for food packaging and agricUltural applicaTIONs | **Kai Oliver Siegenthaler** (BASF)

11.45-12.10 **Innovative solutions for circular technical plastics**
- **PRIMUS** - Reforming secondary plastics to become the primary raw material choice for added-value products | **Carolina Mejía** (Mondragon)
- **Green3D** -Transforming plastic waste into High End Bespoke Furniture | **Rocco Lagioia** (ITRB)
- **Circular Flooring -** New products from waste PVC flooring and safe end-of-life treatment of plasticisers |**Martin Schlummer** (Fraunhofer IVV)
- **PLAST2BCLEANED** - PLASTtics to be CLEANED by sorting and separation of plastics and subsequent recycling of polymers, bromine flame retardants and antimony trioxide | **Esther van den Beuken** (TNO)

12.10-13.00 **Panel discussion: the role of R&I projects in the EU policy agenda.**
Discussions on how the project results contribute to achieving the EU Green Deal and CEAP objectives.
- **Pierre Fiasse** (COMET)
- **Katharina Schlegel** (Plastics Europe)
- **Wolfgang Trunk** (European Commission, DG ENV)
- **Silvia Maltagliati** (European Commission, DG RTD)
- **Olga Pozlevic** (European Commission, DG GROW)

13.00-14.00	**Lunch break**