

The Future of Sustainable Plastics 2026

09:00 - 09:30 Registration and Coffee

09:30 - 09:45 Welcome and Introduction (Chair AAU Plastics, Brian V. Wæhrens, Professor, Department of Materials and Production, Aalborg University)

09:45 - 10:30 Keynote Presentation - The Future of Recycled Plastics (Christina Busk, Environmental Manager, The Danish Plastics Federation)

10:30 - 11:00 Break, Networking and Posters

11:00 - 12:15 AAU Plastics - Advances and Challenges

How can Bioupcycling Contribute to a more Circular Plastic Sector (Cristiano Varrone, Associate Professor, Department of Chemistry and Bioscience, Aalborg University)

Chemical Recycling Breakthrough for High-Quality rPET (Thomas Helmer Pedersen, Professor, Department of Energy, Aalborg University)

Mechanical Recycling for High-Quality Circularity of Industrial Thermoplastics (Jesper de Claville Christiansen, Professor, Department of Materials and Production, Aalborg University)

Zero Waste (Linda Nhu Laursen, Associate Professor, Department of Architecture, Design and Media Technology, Aalborg University)

12:15 - 13:15 Lunch and Posters

13:15 - 14:30 Industrial State of the Art and Future Challenges

Extended Producer Responsibility in Denmark (Mette Skovgaard, Consultant, DAKOFA)

Using Closed Loops to Build Resilience and Advance Commercially (Camilla Fangel, Senior Director, Group ESG, Færch)

How We Label Our Way to Higher-Quality Circular Plastic Packaging - and Create Brand Value (Claus Søndergaard, Labeling Development Manager, UPM Adhesive Materials)

Intelligent Sorting Using Digital Watermarks (Grane Maaløe, Packaging Lead Specialist, Arla Foods)

14:30 - 15:00 Break, Networking and Posters

15:00 - 16:00 Parallel sessions

Each session includes an introduction, group discussions, and plenary feedback

SESSION A: Packaging and Regulation - Technological and Economic Barriers for Circular Plastics Entering the Plastics Market (Organiser: Cristiano Varrone, Department of Chemistry and Bioscience, Aalborg University)

SESSION B: Mechanical Recycling - How far are we? What are the Challenges and Levers for Further Scaling (Organiser: Brian V. Wæhrens, Department of Materials and Production, Aalborg University)

SESSION C: Waste Mapping - Gain Hands-on Experience in Identifying and Quantifying Resource Consumption and Waste Potential (Organiser: Linda Nhu Laursen and ZeroWaste project team, Department of Architecture, Design and Media Technology, Aalborg University)

16:15 - 16:25 Closing remarks (Chair AAU Plastics, Brian V. Wæhrens, Department of Materials and Production, Aalborg University)

16:30 - 18:00 Networking and Reception

Keynote Presentation

Title: The Future of Recycled Plastics

Speaker: Christina Busk, Environmental Manager, The Danish Plastics Federation

Circular economy and the use of recycled plastic. What are the opportunities and which kind of challenges do the industry meet. How does the legislation impact the market and stimulate the possibilities and how does it work in practice. There will be specific exemptions from the Single-Use Plastics Directive and PPWR.

AAU Plastics – Advances and Challenges

Title: How can Bioupcycling Contribute to a More Circular Plastic Sector

Speaker: Cristiano Varrone, Associate Professor, Department of Chemistry and Bioscience, Aalborg University

Recycling of mixed plastic waste is still a major challenge, while the costs of recycled plastics still being higher than virgin ones. Bio-upcycling of plastic waste into higher value products could help valorizing mixed plastic waste. AAU is coordinating a Horizon Europe Innovation Action project (called UPCYCLE) where we are scaling up chemo-enzymatic processes to depolymerize plastic waste, followed by whole-cell upcycling into novel building blocks, additives and polymers with improved recyclability. The session will show how biotechnology can contribute to a more sustainable plastic sector, by integrating existing technologies and producing renewable materials with improved functionality.

Title: Chemical Recycling Breakthrough for High-Quality rPET

Speaker: Thomas Helmer Pedersen, Professor, Department of Energy, Aalborg University

The PETfection project under the TRACE platform is advancing a new chemical-recycling route for converting household PET waste into high-purity, virgin-grade recycled PET (rPET). Using Aalborg University's prototype flow reactor, the process depolymerizes PET with superheated water. This approach significantly improves both the quality and yield of rPET compared to today's mechanical recycling, even when handling contaminated household packaging. The session will highlight the project's proof-of-concept results, the collaborative value-chain approach involving universities and industry partners, and the potential for scaling a more efficient, more circular PET recycling system.

Title: Mechanical Recycling for High-Quality Circularity of Industrial Thermoplastics

Speaker: Jesper de Claville Christiansen, Professor, Department of Materials and Production, Aalborg University

Mechanical recycling is still the work horse and primary route to circularity in industrial plastics; yet achieving both sufficient volumes and consistently high material quality remains a major challenge. This session presents insights from recent projects (including CFIT and RHQI) focused on enabling companies to integrate high-grade recycled thermoplastics into their products. The aim: to maximize material value and promote true circularity, ideally by reusing recycled plastics in the companies' own product lines.

Title: Zero Waste

Speaker: Linda Nhu Laursen, Associate Professor, Department of Architecture, Design and Media Technology, Aalborg University

The Zero Waste project addresses the waste challenge through a holistic, top-down approach to the waste hierarchy by bringing together the right internal competencies across existing silos in production, product development, and business operations. By creating a clear overview of waste, barriers, and opportunities, the project helps companies envision and develop future scenarios that support more resource-efficient practices.

Industrial State of the Art and Future Challenges

Title: Extended Producer Responsibility in Denmark

Speaker: Mette Skovgaard, Consultant, DAKOFA

As one of the last EU Member States, rules on extended producer responsibility for packaging entered into force on 31 December 2024, with the transfer of responsibility for waste management taking effect from 1 October 2025. The parties to the 2022 political agreement acknowledge that the introduction of extended producer responsibility is a major and complex task, entailing a comprehensive green transition of the Danish waste sector. In addition, they seek to ensure that producer responsibility is organised in a user-friendly and cost-effective manner and provides producers with a strong financial incentive for increased reuse, material reduction, and recycling. Producer responsibility will mean that costs are lifted from citizens' waste fees as costs for the management of packaging waste are transferred to producers.

Title: Using Closed Loops to Build Resilience and Advance Commercially

Speaker: Camilla Fangel, Senior Director, Group ESG, Færch

Discover how closed-loop systems not only drive sustainability forward but also improve resilience and unlock financial benefits driven by European legislation, understanding the requirements behind and highlighting which European countries have some of the most supportive legislations for circularity. Learn how to combine financial and environmental benefits to drive commercial growth and how Faerch partnered with one of the largest providers of databases on emission factors to increase transparency around mechanically recycled PET from food packaging and how low we expect the carbon footprint can go by 2030 - using circularity to drive climate action.

Title: How We Label Our Way to Higher-Quality Circular Plastic Packaging – and Create Brand Value

Speaker: Claus Søndergaard, Labeling Development Manager, UPM Adhesive Materials

Packaging is more than just protection – it is a powerful branding tool. Point-of-sale packaging must attract and sell, while pharma and personal care packaging must inform and build trust. At the same time, regulatory requirements are increasing, and the EU is pushing for higher recycling rates at the packaging's "end of life."

In this presentation, we will show how innovative label solutions can strengthen both compliance and brand value, while also contributing to higher-quality circular plastic packaging. We will share concrete examples and present the technological standards that drive our ECO-design approach. With more than 30 years of industry experience, Claus has deep expertise in adhesive technology and materials that ensure optimal performance on different packaging surfaces – helping brands combine design, functionality, sustainability, and, not least, higher-quality circular plastic packaging.

Title: Intelligent Sorting Using Digital Watermarks

Speaker: Grane Maaløe, Packaging Lead Specialist, Arla Foods

This presentation introduces recent experimental work on intelligent sorting of plastics using digital watermarks. Embedded, invisible codes enable highly accurate identification and separation of different packaging materials, as demonstrated in pilot-scale trials. The results highlight both the technological potential and the practical challenges associated with real-world implementation.

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SESSION B:

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