Fraunhofer CCPE

Fraunhofer Cluster Circular Plastics Economy CCPE
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CCPE Newsletter 2/2026



Dear readers,

How can plastics be designed to meet the requirements of functionality and sustainability while also being recycled? At Fraunhofer CCPE, we are addressing this question from various perspectives – ranging from material development and product design to recycling and digitalization.

In this issue, we present the latest developments: We highlight the potential of circular design, explore how recycled materials can be used in geotextiles, and discuss new approaches for bio-based film applications and sustainable fire protection. We also examine the role of artificial intelligence in the circular plastics economy and introduce xPBS, a bio-based foam that serves as a sustainable material alternative.

Our “Fraunhofer CCPE compact” event series also continues: On January 20, 2027, under the title “Foams for a Circular Economy – Powered by Renewable Carbon,” we will focus on the topic of foams and renewable carbon. Registration is now open, and the program will follow shortly. You can find more information on that in this issue.

We hope you enjoy reading this update and look forward to working with you to drive the transformation toward a circular plastics economy.

Best regards,

Your Fraunhofer CCPE Team

Fraunhofer CCPE compact

January 20, 2027

Fraunhofer CCPE compact: Foams for a Circular Economy – Powered by Renewable Carbon

Foams are indispensable in numerous applications. At the same time, designing them sustainably poses new challenges for the plastics industry. The role that renewable carbon can play in this context and the approaches that are driving the



development of recyclable foam solutions will be the focus of the next issue of “Fraunhofer CCPE compact.” The event offers an opportunity to explore this topic and gain new insights for the development of sustainable foam applications.

Registration is now open. We will publish the detailed program shortly.

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News from the CCPE research

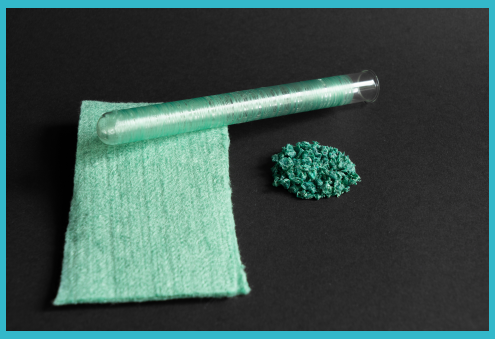
Circular design: the underestimated key to the circular economy



New EU regulations, increasing demands for recyclability, and the call for circular products are putting pressure on companies to take action. But how can this transition actually be achieved? Sabrina Schreiner and Anna Krüger from the Research Department for Application and Demonstration at the Fraunhofer CCPE explain why circular design is a key competitive factor and why monomaterials alone are not yet a solution.

MORE INFO

Geotextiles made from recycled materials: GREEN leads the way into the industry



For the industry, recycled materials are creating new opportunities in geotextile production. In the GREEN project, the Fraunhofer CCPE demonstrates that recycled polypro-pylene (PP), polyethylene terephthalate (PET), and high-density polyeth-ylene (HDPE) can be processed into nonwovens, fibers, and membranes that meet industrial requirements. This creates opportunities for use in existing production lines and new value chains in the geotextile market.

MORE INFO

CircularInFoam: High-performance halogen-free insulation materials for industrial applications

Blends of bio-based polyesters as a building block for replacing conventional polyolefins



Through the CircularInFoam project, the Fraunhofer CCPE is developing sustainable, high-performance insulation materials based on polylactide. Halogen-free flame retardant systems, modular masterbatch solutions, and industrial scalability are opening up new possibilities for safe, low-emission, and economically competitive insulation materials.

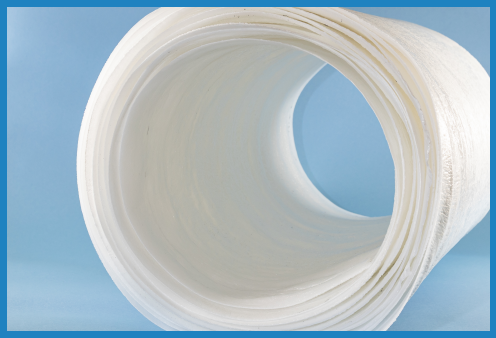
MORE INFO



New findings from the Fraunhofer Cluster of Excellence Circular Plastics Economy CCPE show how commercial PBSA/PLA blends can be specifically tailored through industrial processing methods to make them suitable for flexible film applications. This opens up concrete bio-based alternatives to petro-chemical plastics.

MORE INFO

Bio-based foam replaces petroleum-based materials – without changing production processes



A new extruded foam made from polybutylene succinate (PBS), developed by the Fraunhofer CCPE, offers industrial companies a direct path to sustainable material solutions – without the need to invest in new equipment. This approach simultaneously addresses CO_2 reduction, compliance with regulatory requirements, and economic efficiency.

MORE INFO

Artificial intelligence as the key to a circular plastics economy by 2030



The Fraunhofer CCPE has published a new position paper and a comprehensive background report on the role of artificial intelligence (AI) in the plastics value chain by 2030. The analysis shows that AI is already powerful today and is seen as a key lever for increasing efficiency, quality, and recyclability – but it can only unleash its potential based on interoperable data spaces, clear standards, and viable business models.

MORE INFO

You can meet us here

January 20, 2027

Fraunhofer CCPE compact: Foams for a Circular Economy – Powered by Renewable Carbon

MORE INFO

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