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FRAUNHOFER INSTITUTE FOR STRUCTURAL DURABILITY AND SYSTEM RELIABILITY LBF

PRESS RELEASE

Advanced Materials for the Circular Economy – Fraunhofer LBF at K 2025

How can recyclates be enhanced to reliably perform in demanding, long-lasting applications? From October 8-15, 2025, the Fraunhofer Institute for Structural Durability and System Reliability LBF will answer this question at the K Trade Fair in Düsseldorf. Visit the Fraunhofer booth in Hall 7.0, Stand 70SC05. Visitors will learn how intelligent material strategies can make the circular economy fit for the future and how high-quality plastics can improve the performance and reliability of technical components. The focus here is on smart additive concepts and practical material testing.

In order for plastics, especially recyclates, to be used in highly stressed components, their properties must be optimized and tailored to these technical products. Then, they will work reliably and be efficient and economical to manufacture.

Reliability starts with analysis

Precise material evaluation is the basis for every high-quality recyclate application. Fraunhofer LBF analyzes recyclates for degradation, quality differences, and variations between batches. This creates the foundation for targeted material adjustments within the framework of R-strategies. Intelligent additivation compensates for fluctuations and opens up new applications for recyclates, including originally non-durable packaging materials.

Alternative plastics for extreme requirements

Increasing regulations on fluoropolymers challenge companies to qualify new materials for demanding applications, such as electrolyzers. Fraunhofer LBF supports this process by providing comprehensive expertise in selecting and developing suitable alternatives. In its own autoclaves, materials are tested under extreme conditions, such as high temperatures, pressures, and aggressive media, to ensure realism and robustness.

Understand failures. Secure quality.

Fraunhofer-LBF Troubleshooting offers a structured approach to getting to the bottom of material failures, from damage analysis to optimization. These insights directly

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inform material development, helping to make new products more reliable and sustainable from the outset.

More information and Contact: www.lbf.fraunhofer.de/plastics

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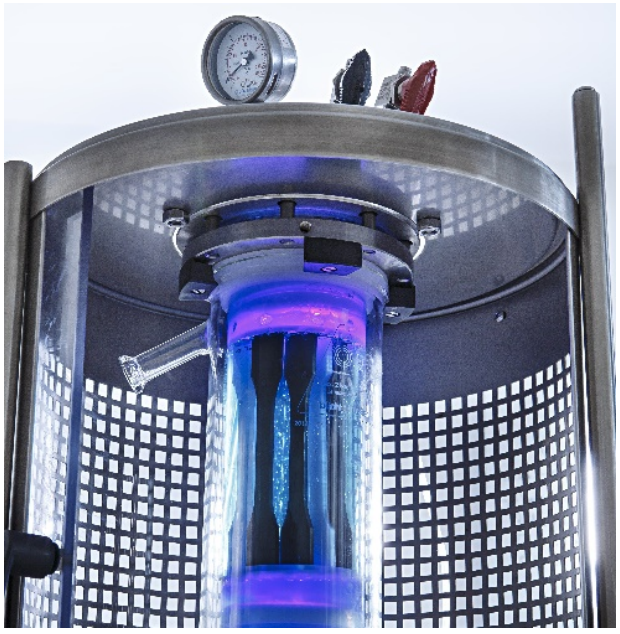
#Additives, #Recyclate Assessment, #Quality Management, #Analytics, #Measurement Methods



Material under pressure: Lifetime analysis under alkaline or acidic electrolyzer conditions at elevated pressure and temperature at Fraunhofer LBF. Photo: Fraunhofer LBF, Raapke

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