Fraunhofer IAP

WE MAKE MATERIALS FIT FOR THE FUTURE!

Fraunhofer Institute for
Applied Polymer Research IAP

Potsdam Science Park

Fraunhofer IAP - News

We make materials fit for the future!

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Dear reader,

How can we combine high performance, sustainability, and cost-effectiveness? We are developing the building blocks for this at Fraunhofer IAP. Our work ranges from bio-based carbon fibers and safe, high-performance battery materials to innovative approaches for transparent labeling of products and packaging.

As part of the Carbon Lab Factory Lausitz in Guben, we are paving the way for a climate-friendly region focused on lightweight construction and energy technologies. A novel production process makes it possible to manufacture high-quality polyurethanes without using toxic isocyanates. New battery materials, PFAS-free membranes, and iridium-reduced catalysts are driving the energy transition, while SmartID combines the digital product passport with reliable brand protection. And with paper packaging that can be sealed without adhesives, we are taking another step toward a truly circular economy.

All of these developments share a clear goal: to create solutions that work reliably in industrial processes, actively move our partners forward, and at the same time have a positive impact on society. Learn more in this newsletter or meet us at international trade fairs.

We hope you enjoy reading it.

Your team at Fraunhofer IAP

CONTENT

NEWS FROM RESEARCH AND DEVELOPMENT

Bioeconomy and Sustainability

Fraunhofer IAP Paves the Way for "Green" Carbon Fibers

A new pilot plant in Guben is set to enable the production of bio-based carbon fibers. The plant is part of the Carbon Lab Factory Lausitz and will make an important contribution to the transformation of the Lausitz region—into a hub for innovative high-performance materials. The federal government and the state of Brandenburg are providing 53.3 million euros in funding.

MORE INFO

Bioeconomy and Sustainability

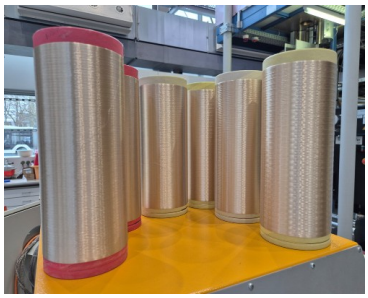
Sustainable Polyurethane Production Without Toxic Isocyanate

Many everyday products contain polyurethanes (PUR)—which until now have been manufactured using highly toxic isocyanates. The CO_2NIPU project showcases a safe alternative: isocyanate-free PUR based on non-hazardous dicarbamates. This simplifies production, reduces risks, and cuts greenhouse gas emissions. The isocyanate-free polyurethanes are already suitable for industrial use.

MORE INFO

Bioeconomy and Sustainability

Sustainable Design of Geosynthetics and Roof Underlayments Made from Recyclates

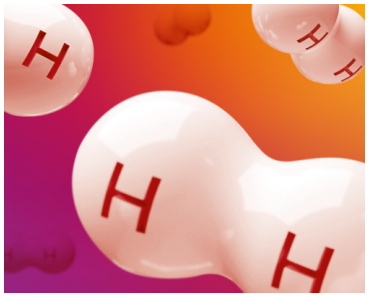


The Zirk-Tex project shows how plastic waste can be turned into new, long-lasting fibers and nonwovens for roofing membranes and technical textiles. Researchers at Fraunhofer IAP repolymerized BHET, the intermediate product generated during the glycolysis of PET, into rPET and used it to produce fine multifilament yarns. They also tested spinning processes for rPET and rPP.

MORE INFO

Energy Transition and Mobility

Iridium-Reduced Catalysts for the Cost-Effective Production of Hydrogen



Green hydrogen is considered key to a climate-neutral industry. In the German-Chilean project Power-to-MEDME-FuE, researchers at Fraunhofer IAP developed iridium-reduced catalysts for PEM water electrolysis—efficient, cost-effective, and scalable for industrial use. The next step is long-term testing—project partners are currently being sought for this.

MORE INFO

Energy Transition and Mobility

Innovative Battery Materials for Safe and Sustainable Energy Storage

Whether for electric vehicles, stationary energy storage systems, or portable electronics—the energy density, fast-charging capability, service life, and safety of a battery are largely determined by its materials. At Fraunhofer IAP, we are developing new materials for next-generation batteries, tailored to industrial applications along the entire value chain.

MORE INFO

Industry and Technology

SmartID: Digital Product Passport and Brand Protection Combined in One Code

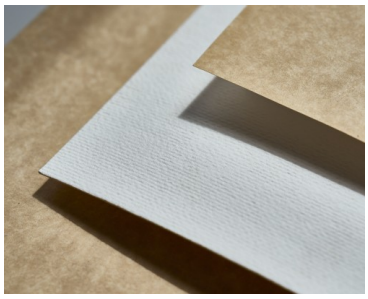
The SmartID identification system combines conventional product information, data for the digital product passport, and

an authenticity check in a forgery-proof QR code. The solution supports companies who, in addition to meeting regulatory requirements, also want to ensure product protection and traceability. The system can also be easily integrated into existing printing lines.

MORE INFO

Industry and Technology

Sealing Paper Packaging without Adhesives



Fraunhofer researchers have developed a process that enables completely adhesive-free paper packaging. To determine which materials are suitable for this, we characterized and analyzed uncoated papers, paperboards, and printing papers. The proportions of cellulose, hemicellulose, and lignin influence the adhesion properties and bond strength.

MORE INFO

PEOPLE AT FRAUNHOFER IAP

Women in Science

Research Knows No Gender

Dr. Isabell Tunn is a researcher in the Energy Materials department. With a focus on (bio)polymer research, she works on developing hydrogels for sensors and polymer materials for the energy transition. In an interview, the PhD biochemist shares what excites her about her profession.

TO LINKEDIN | TO THE DEPARTMENT

ON OUR OWN ACCOUNT

Restructuring Strengthens Synergies and Future-Oriented Topics

At the start of 2026, we reorganized our areas of expertise to specifically accelerate forward-looking developments and adapt our strategy to the growing demands of research and

industry. In this way, we are creating the ideal conditions for application-oriented research and strong collaborations with industry and partners.

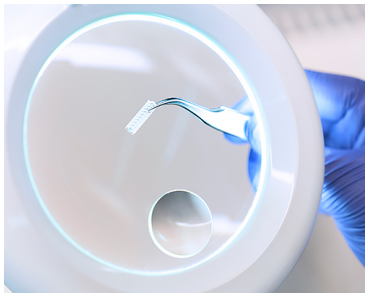
MORE INFO

EVENTS

Meet the Fraunhofer IAP team here

Hannover, Germany | April 20, 2026 - April 24, 2026

Hannover Messe

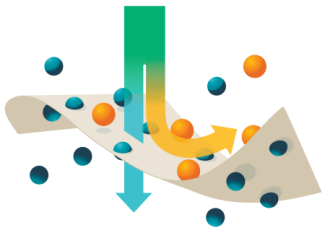


Visit us April 20–24, 2026 in Hall 11 at Hannover Messe. At the joint Fraunhofer booth of the Materials Group, we will present biocompatible materials for medical applications as well as materials for sustainable products. In the “Hydrogen + Fuel Cells EUROPE” area, we will showcase membranes, catalysts, and GDLs for water electrolysis and fuel cells.

MORE INFO

Munich, Germany | May 04, 2026 - May 07, 2026

IFAT



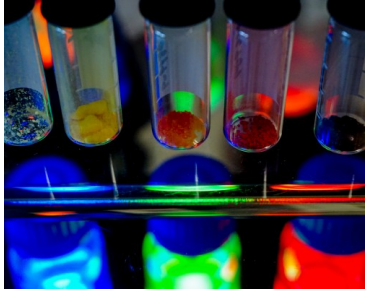
We will present application-specific membranes for water treatment at IFAT 2026 at the joint Fraunhofer booth. The focus is on targeted removal of defined contaminants, efficient water filtration, and recycling of process media. Meet us in Hall B2 / Booth 115.

MORE INFO

Los Angeles, United States of America | May 05, 2026 - May 07, 2026

Display Week

Our digitally printable materials form the basis for the next generation of smartphones, wearables, lighting, and high-resolution displays for consumer, medical, and automotive applications. Using advanced techniques such as electrohydrodynamic (EHD) printing, we achieve ultra-precise microstructures that are smaller than a human hair. Discover



our latest developments at Display Week 2026.

MORE INFO

Düsseldorf, Germany | May 07, 2026 - May 13, 2026

Interpack

SmartID combines the legal requirements of the digital product passport, secure product identification, and transparency along the supply chain in a single technology. After five years of development and optimization, the Fraunhofer Institutes FOKUS, SIT, and IAP will present a ready-to-use system at Interpack 2026 that can be easily integrated into any printing line worldwide.

MORE INFO

We make materials fit for the future!

Creative solutions are the key to overcoming the challenges of the present and the future—whether they be climate change, pandemics, the energy transition, structural change or new mobility concepts.

Fraunhofer IAP tackles these challenges through innovative materials, processes and technologies, targeting the entire value chain—from the idea to the customized prototype.

TO THE HOMEPAGE

Potsdam Sciene Park

Fraunhofer IAP is part of the largest science location in the state of Brandenburg: the Potsdam Science Park. Just 30 minutes from the center of Berlin, more than 12,500 people research, work and study in the fields of biotechnology, medical technology, optics, geosciences, astrophysics and gravitational physics. On an area of more than 50 hectares, the innovation- and founder-friendly park continues to offer office and laboratory space for startups and ready-to-build plots for small and medium-sized companies. We live science!

TO THE POTSDAM SCIENCE PARK

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Fraunhofer is Europe's largest application-oriented research organization. Our research efforts are geared entirely to people's needs: health, security, communication, energy and the environment. As a result, the work undertaken by our researchers and developers has a significant impact on people's lives. We are creative. We shape technology. We design products. We improve methods and techniques. We open up new vistas. In short, we forge the future.

Registration no. VR 4461