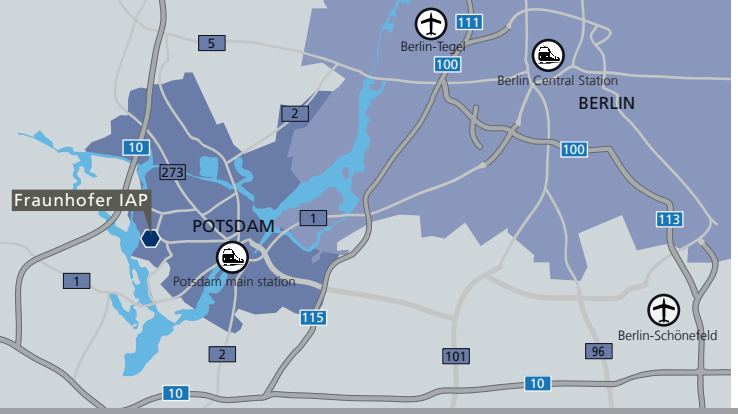

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FRAUNHOFER INSTITUTE FOR APPLIED POLYMER RESEARCH IAP

POLYMERS

OUR EXPERTISE – YOUR SUCCESS

APPLIED POLYMER RESEARCH MADE-TO-MEASURE

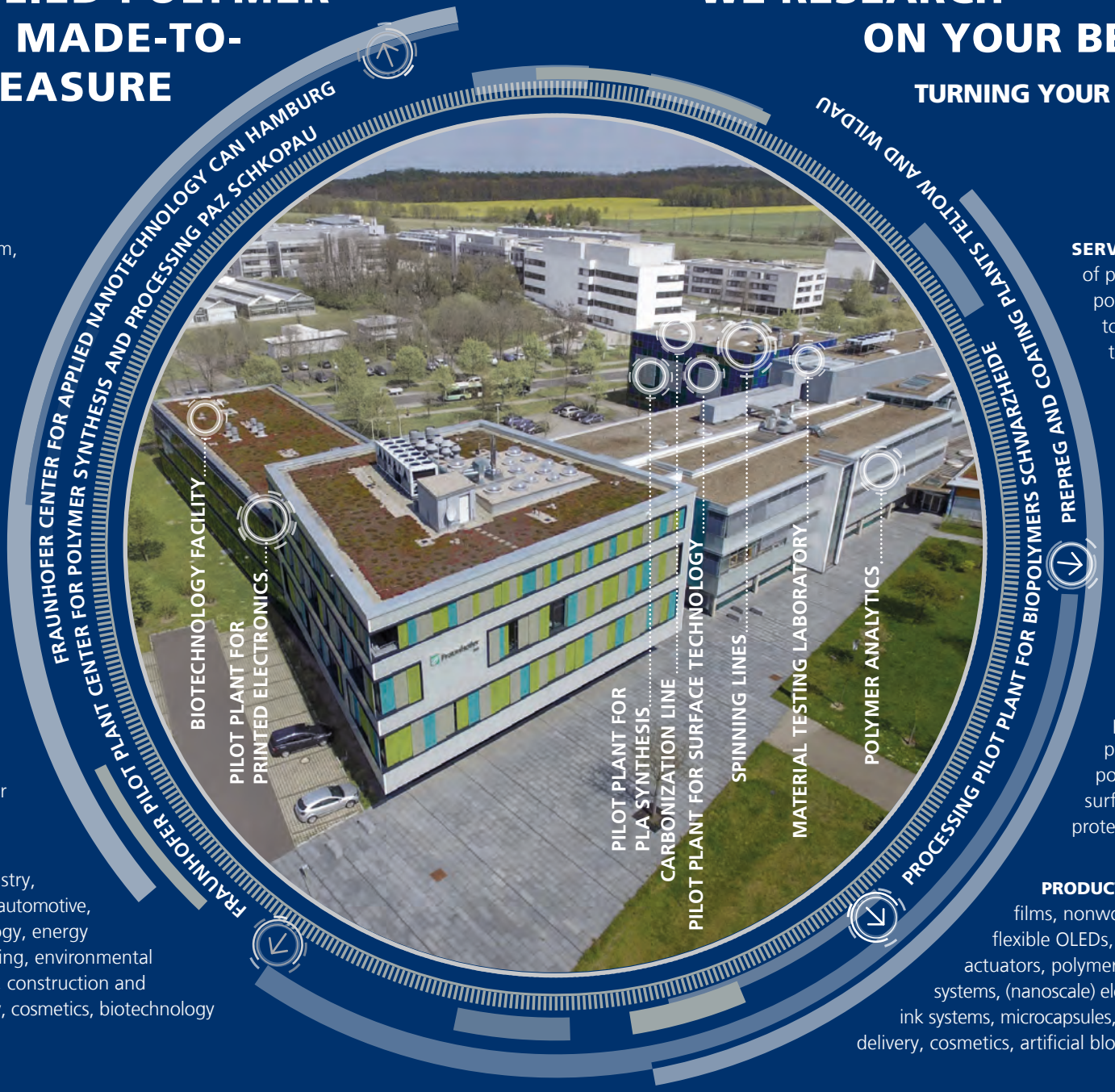
The Fraunhofer IAP in Potsdam-Golm, Germany, offers a broad range of research on polymers. We work on biobased and synthetic polymers that meet the growing demands of our partners. The end products are becoming more durable and stable, more acid and heat resistant, easier to care for, healthier, more environmentally-friendly, more cost-effective ... as well as easier and more energy efficient to manufacture.

We develop innovative and sustainable materials, processes and products that are specifically tailored to the application's requirements. We also create conditions which ensure that the developed methods not only work on a laboratory scale, but also under production conditions.

APPLICATION FIELDS | plastics industry, lightweight construction, aerospace, automotive, electronics, optics, security technology, energy technology, textile industry, packaging, environmental and waste water technology, paper, construction and paint industries, medicine, pharmacy, cosmetics, biotechnology

WE RESEARCH ON YOUR BEHALF

TURNING YOUR IDEAS INTO PRODUCTS



SERVICES | synthesis and modification of polymers, material development, polymer processing, scale-up: up to ton scale, process optimization, technology and process development, surface analysis, structural characterization, material testing, utilization of biogenic residues, biotechnology, consulting

MATERIALS | (bio)plastics, fiber-reinforced composites, elastomers, thermoplastics, thermosets, lightweight materials, resins, rubber, optical and photosensitive functional materials, quantum dots, chromogenic polymers, rare earth doped nanoparticles, precious metal nanoparticles, polymeric surfaces, functional colloids, polymer dispersions, hydrogels, surfactants, functional proteins, proteinogenic materials

PRODUCTS | fibers, biobased carbon fibers, films, nonwovens, prepregs, printed electronics, flexible OLEDs, flexible organic solar cells, sensors, actuators, polymeric electronic components, thickener systems, (nanoscale) electrocatalysts, nanoparticle-based ink systems, microcapsules, membranes, artificial cornea, drug delivery, cosmetics, artificial blood vessels (3D printing)

Synthesis and Modification of (Bio)Polymers

Microbiology and Biotechnology

OUR COMPETENCES FOR YOUR PROGRESS

Printing and Thin Film Technologies

Nanotechnology and Self-assembly

Functionalization of Surfaces

Processing from Solution and Melt

Characterization of Materials and Analysis of Polymers and Particulate Systems

Process Development and Scale-up up to Ton Scale

polymerization techniques

biopolymers and synthetic polymers

novel and optimized polymer structures

optically and electrically active polymers

chromogenic polymers

microencapsulation

polymers from renewable raw materials

cellulose, starch, lignin, PLA

dispersions and particles

Synthesis and Modification of (Bio)Polymers

organic electronics

OLED, OPV, OTFT

sensors, actuators

characterization processes and printing technologies

clean room with special process conditions

printed electronics

Printing and Thin Film Technologies

chemical, physical and biological surface functionalization

materials for surface functionalization

Functionalization of Surfaces

identification and characterization of polymers in solution

determination of chemical composition

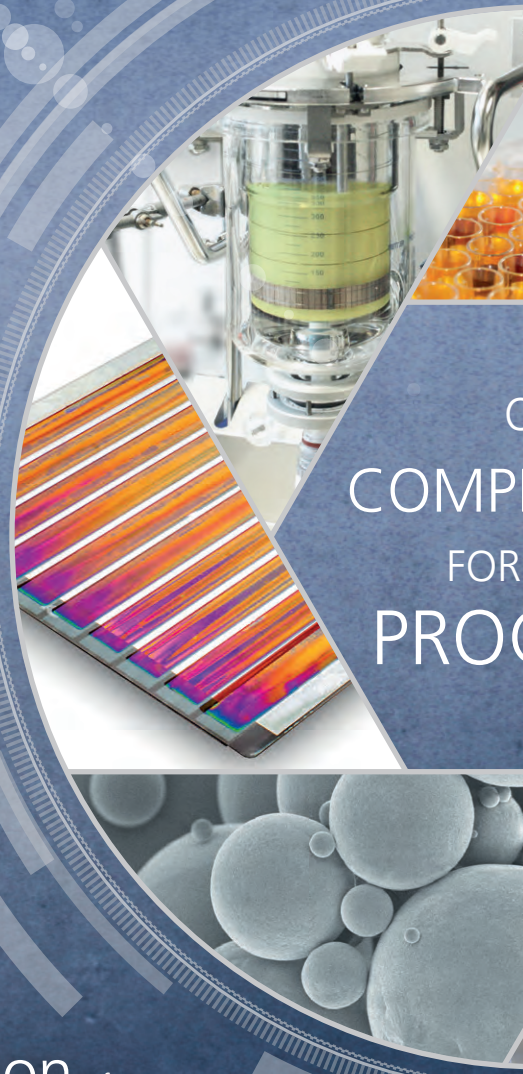
investigations of solids and melts

surface analysis

targeted modification of material properties

hair analysis

Characterization of Materials and Analysis of Polymers and Particulate Systems



C

COMP

FOR

PROC

Microbiology and Biotechnology

biobased monomers, polymers, catalysts
biomedical materials
cell culture of human pathogens
cytotoxicity test
new therapies
drug delivery
biocompatibility
fermentation and processing
implants

Nanotechnology and Self-assembly

integration of biomolecules in polymers
design and manufacture of supramolecular systems
biofunctional polymers
nanosensorics
layer-by-layer
self-assembly at interfaces and in particulate systems
protein-polymer conjugates

Processing from Solution and Melt

fibers and films
solution spinning
membranes and particles
processing properties
extrusion and injection molding
modification and analysis of the property spectrum of polymer materials
additivation
viscose process
reactive extrusion
carbon fibers

Process Development and Scale-up up to Ton Scale

process development
identification of process engineering data
safe processes
operation of pilot plants
process analysis and optimization
development and modification of machines