

POLYURETHANE TECHNOLOGY





The PU laboratory (top)
An open-mould S-RIM process (bottom)

FROM THE IDEA TO THE PRODUCT

The properties of polyurethane (PU) can be tailored to the application in question to a greater extent than with any other polymer. Polyurethane can thus be used as a flexible or rigid foam, as a rigid, non-cellular material or as a basis for high-grade varnish. Polyurethane comes in the form of thermoset, elastomeric compounds as well as in thermoplastic variants. And the applications and processing methods for this material are just as numerous as its different variants.

The IKV has been conducting intensive research into polyurethane processing for more than 30 years. And, in our daily work, we benefit from an environment in which all the key polymer technology processes are available and where synergies arise as a matter of course.

Our core competences are in the fields of:

- process technology
- mould technology
- material characterisation
- process control
- simulation

FROM KNOWLEDGE TO SUCCESS

Our young, highly-qualified engineers work on practically-oriented research projects in interdisciplinary teams. The IKV has been developing integrated solution concepts in this way for many decades, paying due consideration to the correlations that exist between the material, the process and the product. The results are implemented on our state-of-the-art laboratory machines and on our partner companies' production lines.

SERVICES FOR INDUSTRY

Practically-oriented research features prominently in our everyday work. In research projects funded by the public purse and bilateral projects with partners in industry, we work on solutions to the problems encountered in the plastics industry.

Benefit from working together with one of the most renowned research institutes in the plastics sector. Make use of both our human resources and our technical facilities for your company. Our expert knowledge, acquired and documented over a period of many decades, is at your disposal.

Arrange an appointment with us to discuss your current problems – we'll be pleased to draw up a non-binding quotation for you.

POLYURETHANE TECHNOLOGY

FIELDS OF EXPERTISE

COMPANY ORGANISATION

- consulting
- start-up management
- benchmarking
- comparative business studies

TECHNICAL CONSULTING

- product-specific process selection
- analysis of process chains
- process optimisation
- profitability analysis

PROCESS SIMULATION

- filling simulation
- thermal design
- simulation of fibre orientation
- part optimisation

MOULD TECHNOLOGY

- design
- dimensioning
- release coatings
- mould optimisation

NON FOAMED POLYURETHANE

- reaction injection moulding systems
- spraying systems
- elastomers
- casting systems

FOAMED POLYURETHANE

- rigid foams
- flexible foams
- continuous processing
- discontinuous processing

SPECIAL PROCESSES

- PU + thermoplastic injection moulding
- in-mould film decoration
- gas-assisted (G)-RIM
- bladder (B)-RIM

POLYURETHANE COMPOSITES

- long and endless fibre reinforced PU
- foamed / non foamed PU
- PU spray impregnation
- pultrusion with PU

SPECIAL FOAMS

- technology development
- syntactic phenolic foams
- semi syntactic phenolic foams
- other reactive foams

PROCESS CONTROL PART ANALYSIS

- material data acquisition
- process control by means of ultrasound
- void detection in composite parts
- mechanical part analysis



