School of Engineering

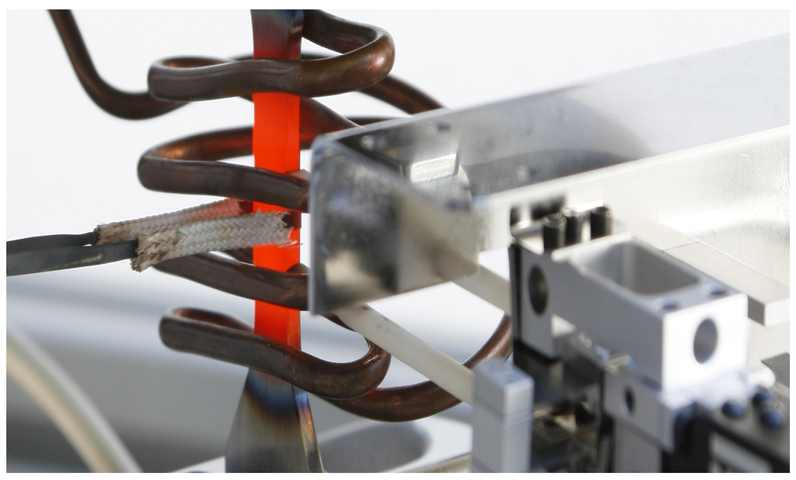
IMPE Institute of Materials and Process Engineering

Materials and Process Engineering

Key Topics of Applied Research and Development

High Performance Materials

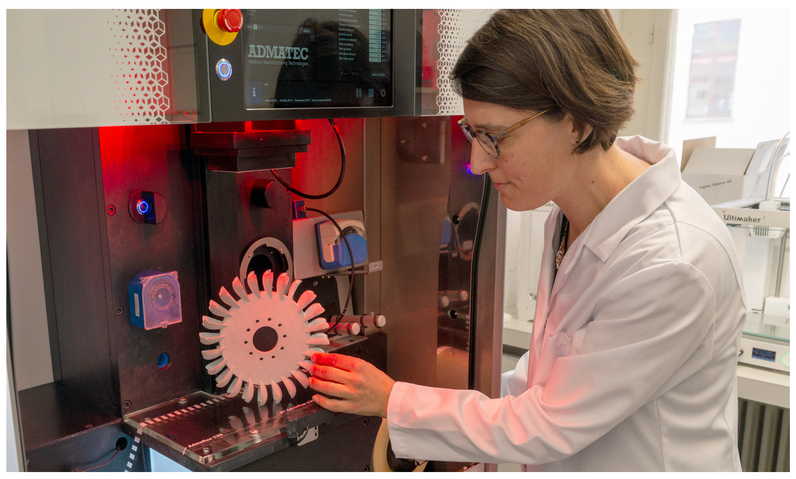
- High performance ceramics
- High performance alloys
- Fibre-reinforced composites
- Functional polymers, polymer blends and biopolymers
- Hybrid materials



Thermomechanical tests on aerospace components

Advanced Processing- and Joining Technologies

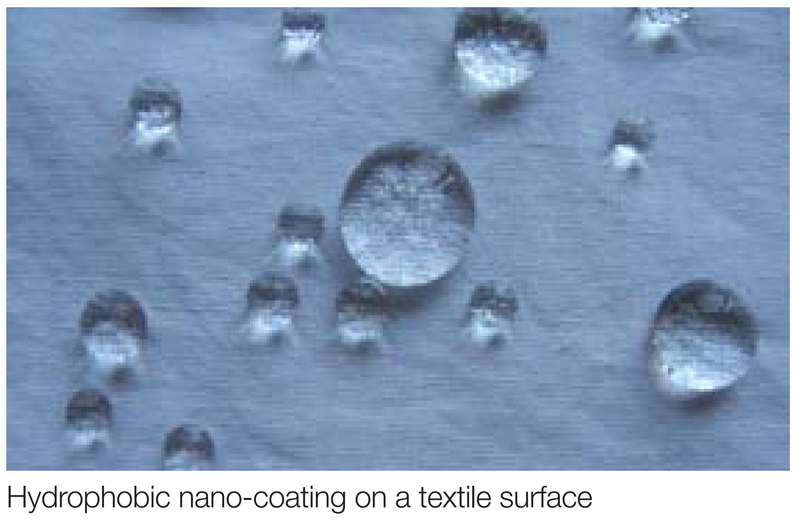
- Additive manufacturing
- Ceramic shaping
- Compounding and extrusion
- Bonding and adhesion technologies
- Welding



Additive manufacturing using DLP technology

Innovative Surface Technologies

- Polymeric, ceramic and metallic coatings
- Functional surfaces and coatings (SMART)
- Sol-Gel-coatings
- Hybrid coatings
- Tribology



Hydrophobic nano-coating on a textile surface

Sustainable Process Engineering

- CO_2 Capture and Transformation
- Power-to-Liquid / Fuel Processing
- Gas/flue gas treatment, water/wastewater treatment
- Material separation, transformation or enrichment
- Particle and powder synthesis

Energy-efficient CO_2 recirculation and conversion

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