FIT-4-NMP

Strategic and targeted support
to incentivise talented newcomers
to NMP projects under Horizon Europe

HIGH-PERFORMANCE and SUSTAINABLE COMPOSITES INNOVATION WORKSHOP
TU DRESDEN 13-14.10.2022

Technische Universität Dresden
Institute of Lightweight Engineering and Polymer Technology
Prof. Dr.-Ing. habil. Maik Gude
Germany

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 958255

VISION

The ILK is the leading international institute for research, development in the field of function-integrative lightweight engineering based on multi-material design

ILK-TEAM

255

employees in a broad inter-disciplinary team

65

years of lightweight research in Dresden

YOUNG TALENTS

80

graduates per year

CONTINUOUS RESEARCH AND DEVELOPMENT CHAINS

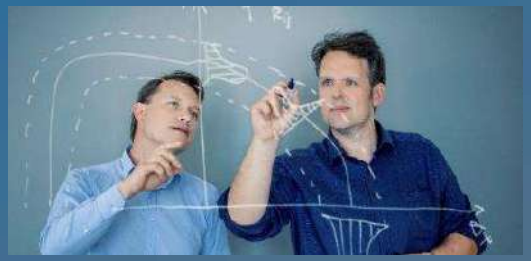
Material, Modelling, Simulation, Design, Processing, Quality, LCA

INDUSTRIAL COOPERATION

with European large-scale industry and regional SMEs

~1.000

Alumni since 1997



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Start-Up a year (at present 17)

35%	Basic research
35%	Application-oriented research
30%	Industrial Development

Promoting initiatives for children, women and young talent

ACL e.V.

juniorING e.V.

INTERNATIONAL NETWORK

among others with partners in UK, Poland, Korea, China, Singapore, Romania, Ethiopia, USA

HORIZON-CL4-2023-TWIN-TRANSITION-01-31:

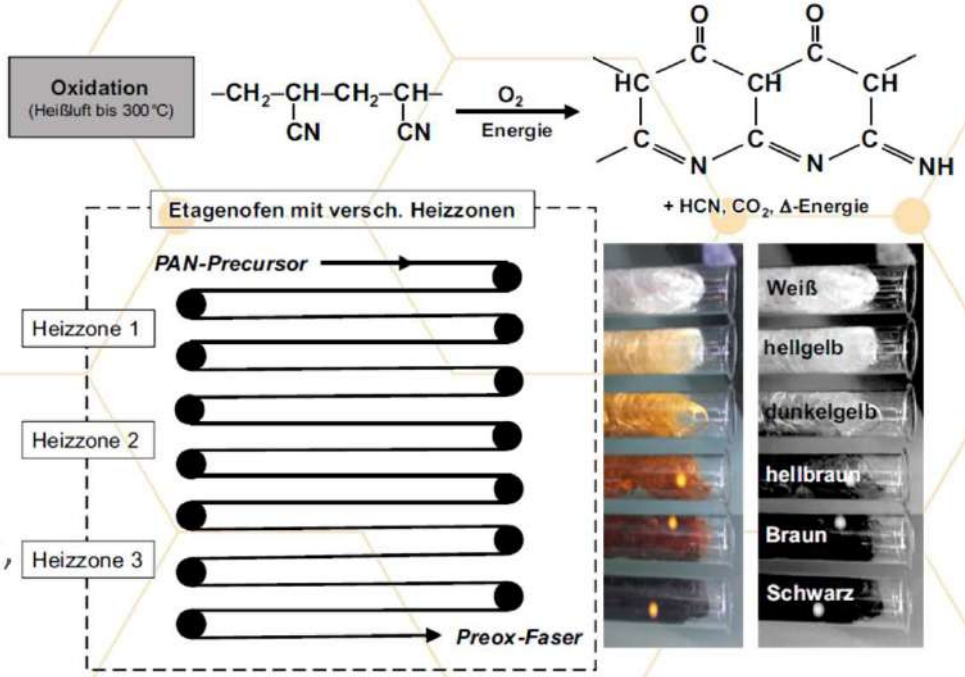
ENERGY EFFICIENCY BREAKTHROUGHS IN THE PROCESS INDUSTRIES (PROCESSES4PLANET PARTNERSHIP) (RIA)

1. **Key idea for contribution to a project under this topic**

- Energy-efficient manufacturing of high performance composites
  - ➢ Polymer synthesis
  - ➢ Carbon fibre manufacturing
- Resource-efficient bio-based materials

2. **Competences relevant to the topic and motivation to apply**

- CF production: stabilization and carbonisation, bio-based and modified CF, customized CF properties
- Efficient composite manufacturing processes



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HORIZON-CL4-2024-RESILIENCE-01-24:
DEVELOPMENT OF SAFE AND SUSTAINABLE BY DESIGN ALTERNATIVES (IA)

1. **Key idea for contribution to a project under this topic**

- Recyclable epoxy vitrimers: Sustainable alternative to bisphenol A epoxy resin
- Advanced high productive composite technologies using adaptive pultrusion

2. **Competences relevant to the topic and motivation to apply**

- Characterisation of the processing and performance properties of resin systems
- Advanced pultrusion technology
- Modelling of composite manufacturing processes (pultrusion)

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HORIZON-CL4-2023-TWIN-TRANSITION-01-31
HORIZON-CL4-2024-RESILIENCE-01-24

RELEVANT EQUIPMENT AND FACILITIES

- Comprehensive technological equipment suitable for prototypic to high-volume production
- Characterization and modelling of thermoset resins and composites
- CAE pool for model-based design and manufacture of high-performance composite and hybrid structures
- Technologies for innovative preforming, 3D-printing and pultrusion
- Carbon Fibre (CF) Technology (pilot lines for CF production, bio-based and modified CF, Customized CF properties)

Institut für Leichtbau und Kunststofftechnik

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amme under grant agreement No 958255

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Contactpersons ***(To Be Defined!)***

- General:
  - Dr. Albert Langkamp
  - Rafal Stanik
- Energy efficiency breakthroughs in the process industries
  - Prof. Dr. Maik Gude
  - Rebecca Bräuer
  - Romy Peters
  - Dr. Mike Thieme
- Development of safe and sustainable by design alternatives
  - Dr. Albert Langkamp
  - Tom Dziewiencki
  - Eckart Kunze
  - Dr. Mike Thieme

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