The Workgroup works on the consolidation of the high-potential overmolding technology of thermoplastic FRP inlays for series production with partners of industry and RWTH Aachen University since 2013. The Workgroup so far has initiated 5 Joint Partner Projects.

**Road Map of the Workgroup**

- **Design**
  - Integrated design to cost calculation (Opt./electr. functionality)
  - Part collection/News & Guidelines
  - Technology-oriented networking

- **Process & Part Simulation**
  - Morphing
  - Laminate consolidation
  - Qualification of materials for high speed laminate production

- **Inlay Production**
  - Double Belt Press 1 & 2
  - Ultra Fast manuf. of tailored blanks
  - Fixation & handling technology

- **Overmolding**
  - Overmolding with conductive resistance heating
  - Industrialized tape placement systems

- **Finishing and QA**
  - NDT for in-line measurement
  - Study on testing FRP
  - Tape Qualification
  - Combination with metal

**Focus of Activity**
- Enhancement by continuous fiber reinforcement
- Composite studies based on expert interviews on a regular basis

**Technological Challenges**
- Effort in material & part testing
- Alternatives to carbon fiber – hybridization with metal
- Industrialized tape placement systems
- Scalability – robustness & quality assurance
- Functionality – more than mechanics
- Thermal management in manufacturing

Missions of AZL Workgroups
- **Technology-Oriented Networking**
- **Building Trust in Technology**
- **Impulses for Research Institutes**
- **Identification of Pre-Competitive Topics**
- **Initialization of Projects**
- Meeting every 6 Months
HISTORICAL ANALYSIS OF TC SERIES APPLICATIONS IN AUTOMOTIVE MARKET

QUALITATIVE INFORMATION:
DESCRIPTION OF VISIBILITY OF TPC TECHNOLOGY

Workgroup History

3 INITIAL WORKSHOPS

2014
Benchmark 1 shot vs. 2 steps,
Expert interviews: Transferation of experience from consumer to automotive market

2015
Status quo in integrative simulation,
Benefits of post-reinforcement of plastic parts

2016
Simulation tools for draping of UD-laminates (macro and micro scale),
Handling and fixation technology – a review
Expert interviews: Identification of aspects within HTC processing with pre-competitive research potential,
New approaches in integrative design-to-cost tools

2017
Expert interviews: Design procedure and material data,
Overview on existing guidelines for part and mold design
Overview on all published demonstrator parts,
Historical analysis of TPC: In automotive market

2018
Introduction and analysis of electrical and optical functionalization for structural parts,
Introduction of aerospace HTC application landscape
Update on published HTC applications,
Information on cost-efficient high-volume-production of HTC

2019
News on HTC applications, technologies and machinery,
HTC related news of the JEC 2019

2020
Next activities

SPEAKERS
- Isola | Reifenhäuser Reicofil
- Lanxess | ESI GmbH | Fraunhofer IPT | IKV
- Fraunhofer IPT | HBW-Gubesch-Thermoforming GmbH
- Simpatec | ITA | Sabic | Code Product Solutions
- IKV | DSM | IKV | Fraunhofer IPT | Evonik | Berndorf Band | KraussMaffei | REHAU AG | Bertrandt Ingenieurbüro GmbH | EDAG Engineering GmbH
- KraussMaffei | LANXESS | Plastic Innovation | IKV | INEOS
- Boge | Yizumi | ITA | IKV
- heroine GmbH | FRIMO Group GmbH | Conbility
- Gmbh | IKV | TPRC | ILT | Metalsa | Henkel

UPCOMING ACTIVITIES
visit www.tp-composites.com/dates

Business Platform “Thermoplastic Composites”

Visit us at www.tp-composites.com

AZL Business Platforms were built in addition to the R&D activities of AZL workgroups and provide you with details on lightweight technologies: Get focused information on highlight lightweight technologies, find a broad range of service and products along the entire value chain, explore use cases to learn on present realized applications and technology solutions, contact your business partners for your individual lightweight solution.

YOUR CONTACTS AND MORE INFORMATION

WORKGROUP LEADER
Philipp Striet
Research Assistant
philipp.striet@azl.rwth-aachen.de
Ph: +49 241 8024-525

MEETING ORGANIZATION
Maren Daniels
Communications and Event Management
maren.daniels@azl-aachen-gmbh.de
Ph: +49 241 47575-13

OTHER AZL BUSINESS PLATFORMS

Download this flyer and find more information