

Institut für Verbundwerkstoffe GmbH (Institute for Composite Materials)



The Institut für Verbundwerkstoffe GmbH (Institute for Composite Materials) is a non-profit research institution of the state of Rhineland-Palatinate, Germany, exploring and advancing applications and potential applications of composite materials based on polymer matrix systems. Since its formation in 1990 on the campus of the University of Kaiserslautern the institute has developed into a worldwide recognized research facility with currently 140 employees, representing 28 nations. The institute's standing is also reflected by more than 100 publications per year, many of them in peer-reviewed magazines. IVW's professors are lecturing different aspects of fiber reinforced composite materials at the University of Kaiserslautern.

Basic idea regarding the projects at IVW is the consideration of the value-added chain "from scientific basics to engineered components". Technological drivers for the use of this material class are currently mechanical engineering and transportation, whereby aeronautics is regarded as a pacemaker for the application of carbon fiber composites. The areas of their application, however, also cover electrical and electronics industries, construction, medicine, and sports and recreation equipment.

IVW carries out research on composite materials covering the full range of their applications. The research projects are supported by public funding agencies, often on interdisciplinary basis with partners from universities and industrial companies, or are funded by industrial partners in bilateral co-operations.

Research activities cover the developmental value added chain from scientific fundamentals to the manufacturing of prototypes in an industry-oriented environment.

Key aspects of activities are the Design of Composite Structures, Process Simulation, Modeling, Simulation, and Testing of Impact and Crash Behavior, Fatigue and Fatigue Life Analysis, Process-Structure-Property Relations, Nanocomposites, Tribology, Material Characterization, Compression Molding (Techniques for GMT/LFT and SMC), Processing of Unidirectional FRPC (Autoclave, Filament Winding, and Tape Placement Techniques), Processing of Textile Reinforced Thermoplastic FRPC (Semi-finished Products, Thermoforming and Joining Techniques), and Processing of Textile Reinforced Thermoset FRPC (Preform Technology, Liquid Composite Molding (LCM)).

The institute cooperates with more than 70 partners worldwide. By agreement it is particularly associated with the University of Sydney, Australia, the Shonan Institute of Technology, Tsujido, Japan, the Pennsylvania State University, State College, USA, the Seoul National University, Korea, and the Jiaotong University, Shanghai, China.

The international character of the institute is also expressed by its integration into European research projects.



Ring winding head

Contact



Institut für Verbundwerkstoffe GmbH
(Institute for Composite Materials)

University of Kaiserslautern
Erwin-Schrödinger-Str., Geb. 58
D-67663 Kaiserslautern

Phone: +49 (0)631 / 2017-0
Fax: +49 (0)631 / 2017-199

info@ivw.uni-kl.de
www.ivw.uni-kl.de

Research Areas

- Design and Analysis
- Material Science
- Manufacturing Science

www.ivw.uni-kl.de