Karlsruhe Institute of Technology

International Research Training Group
Graduiertenkolleg GRK 2078

Doctoral research positions within the International Research Training Group "Integrated Engineering of continuous-discontinuous long fiber reinforced polymer structures" (DFG GRK 2078)

The international research training group (IRTG) **"Integrated Engineering of continuous-discontinuous long fiber reinforced polymer structures"** offers several doctoral research positions at Karlsruhe Institute of Technology (KIT) **starting in April 2021** within the 3rd generation of doctoral researchers of this IRTG.

Discontinuous long fiber reinforced polymer structures with local continuous fiber reinforcements represent an important class of lightweight materials. This class of materials has a significant potential for energy savings due to the high specific stiffness and strength as well as the variety of design options in diverse technical applications, e.g., in vehicle construction. In contrast to the continuous fiber-reinforced composites of non-crimp or woven fabrics which are used, for example, in the aircraft industry, there is still a lack of integrated and experimentally proven concepts for the manufacturing, modeling and dimensioning of combinations of discontinuously and continuously reinforced polymer structures. The main objective of this international consortium is to enable the efficiently structured education of doctoral candidates in this strategically important, however, not yet developed field of continuous-discontinuous long fiber-reinforced polymer structures, by taking advantage of the complementary competencies of the institutions in the consortium.

The IRTG, funded by the German Research Foundation (DFG), provides a structured educational program and a platform for a knowledge-based and research-oriented qualification for several doctoral researchers in the areas of **materials science** (Institute for Applied Materials - Materials Science and Engineering IAM-WK, Institute for Applied Materials - Computational Materials Science IAM-CMS), **product engineering** (Institute of Product Engineering IPEK), **mechanics** (Institute of Engineering Mechanics ITM, Institute of Mechanics IFM), **production science** (Institute of Production Science wbk), and **light-weight technologies** (Institute of Vehicle System Technology FAST). In this technologically highly relevant field of reinforced polymer structures, there exists a very close and strong cooperation with Fraunhofer-Institutes at Karlsruhe (Fraunhofer Institute for Chemical Technology ICT) and Freiburg (Fraunhofer Institute for Mechanics of Materials IWM) as well as with several research universities and centers in Ontario, Canada (e.g., University of Western Ontario UWO, Fraunhofer Project Center FPC).

The doctoral researchers will be supervised by one professor of both the German and Canadian institutions and will be able to take advantage of the complementary expertise of the institutions by visiting one of the partner institutions for an overall period of up to 6 months. The doctoral researchers will be trained to work efficiently in internationally connected fundamental research projects.

Candidates should have successfully completed their studies in engineering mechanics or in related fields. In the corresponding field, special knowledge is required. KIT is an equal opportunity employer. Women are especially encouraged to apply. Applicants with disabilities will be preferentially considered if equally qualified. If you can fulfil all of these requirements, please send your complete professional CV, including your educational background and experience as well as a brief statement of your research interests up to **November 15th, 2020** to the speaker of the GRK, Prof. Dr.-Ing. Thomas Böhlke (info@grk2078.kit.edu).