

COST Action TU 1207 "Next Generation Design Guidelines for Composites in Construction" and the EU funded Marie Curie ITN endure



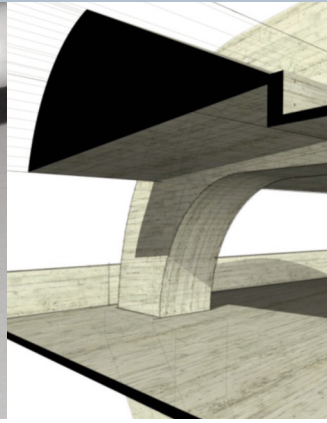
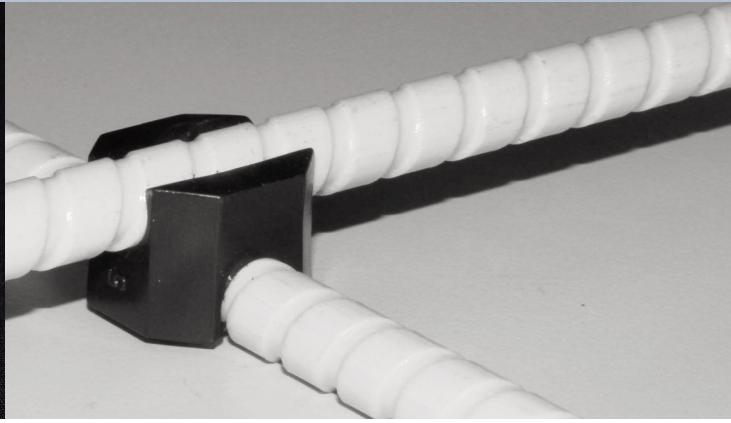
Industry Seminar

# Present and Future of FRP in Construction

23. October 2014, 13.30 – 17.45  
Technical University of Kaiserslautern

The involved companies with presentations





## Time schedule

Time		Speaker	
13.30	Opening	Dr. M. Guadagnini	Senior Lecturer at the University of Sheffield, UK, Chair TU1207
13.35	Welcome speech	Prof. Dr.-Ing. J. Schnell	University of Kaiserslautern, Germany
13.45	Composites in Construction – Overview and Challenges	Dr. M. Guadagnini	
	The German Guideline on externally bonded reinforcement	Prof. Dr.-Ing. habil. Dr.-Ing. E.h. Konrad Zilch	Technische Universität München
	FRP Reinforcing of Maracanã stadium, project concept, execution	F. Dourado	S&P Clever Reinforcement
	Recent developments in CFRP strengthening: Adhesives, post-tensioned plates and projects	T. Berset	Sika Switzerland
	Advanced Strengthening Solutions with Engineered Composite Materials	M. Karantzikis	Fyfe Europe SA, CEO
	Testing, Design and Application of internal FRP Reinforcement from the Perspective of new European Standards and Approvals	Dr.-Ing. A. Weber	Schöck Bauteile GmbH, Germany
15.45	Coffee Break		
16.15	Keynote on “Future of FRP in construction”	Prof. Dr. ir. S. Matthys	University of Ghent, Belgium
16.45	Panel discussion on “Future of FRP in construction” chaired by Prof. U. Meier Participants: Guadagnini, Zilch, Dourado, Berset, Karantzikis, Weber, Matthys	Prof. U. Meier	Empa, Switzerland
17.40	Closure	Dr. M. Guadagnini	



### Introduction

Construction is rapidly becoming the leading outlet for FRP composites. Although the use of composite materials in construction started in the 1980s, civil engineers only recently started gaining confidence in this technology for use in primary structural applications. Despite the considerable technological developments in this field, there are still key scientific and logistical issues that need to be addressed for the widespread acceptance in construction. For example, existing design recommendations are largely based on work carried out more than fifteen years ago on first generation reinforcing products and their conservativeness is hindering the development of innovative and more efficient products and design solutions.

### Aim of the event

This seminar will showcase the latest innovations in the use of advanced composite materials in construction. Examples of how state-of-the-art materials and techniques are shaping current practice in the design, strengthening and rehabilitation of more durable structures will be presented and discussed by experts from academia and industry.

Participants will learn about the latest advances in the development of guidelines for the characterisation and design of advanced composite reinforcements and will familiarise with the work that European committees are currently undertaking to facilitate the introduction of novel reinforcing solutions in European standards.

Leading European and global manufacturers and suppliers will showcase inspiring projects and applications and share their practical experience and innovative design solutions.

The event will provide a unique forum for exchanging ideas and discussing current challenges, barriers and future opportunities for advanced composite reinforcement in structural applications.

### Organizing Committee

**Jun.-Prof. Dr.-Ing. Matthias Pahn**

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**Andreas Schmitt**

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**Dr. Christoph Czaderski**

Empa, Switzerland

[christoph.czaderski@empa.ch](mailto:christoph.czaderski@empa.ch)

### Exhibition

Leading manufacturers and suppliers of advanced composite reinforcement and strengthening solutions will attend the event and showcase their latest products.

### Registration

Participation is free but registration is required. Please send an email by 30.9.2014 to

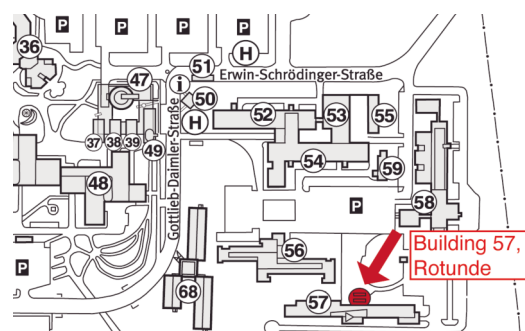
[industryseminar-tukl2014@bauing.uni-kl.de](mailto:industryseminar-tukl2014@bauing.uni-kl.de)

The industry seminar is co-organized by COST Action TU 1207 and the EU funded MC ITN endure.

### Venue

The seminar will be held in the building 57 (Rotunde) of the Technical University of Kaiserslautern, located in Kaiserslautern in Germany. The address is:

TU Kaiserslautern  
Erwin-Schrödinger-Straße, Gebäude 57, Rotunde  
67663 Kaiserslautern, Germany





### **TU Kaiserslautern**

Special networks link the engineering and natural sciences with the social and economic sciences and distinguish the University of Kaiserslautern as the only university in the state of Rhineland-Palatinate with a strong orientation on technology. It consists of 12 departments and offers over 100 courses of study to 14,200 students.

The University of Kaiserslautern has built a reputation for excellence in some disciplines which has also attracted international attention. For example, there are four major institutes working in the area of applied mathematics and computer sciences. These include: two Fraunhofer Institutes (the Fraunhofer Institute for Industrial Mathematics (ITWM) and the Fraunhofer Institute for Experimental Software Engineering (IESE)), the German Research Center for Artificial Intelligence (DFKI), and the Max Planck Institute for Software Systems. Other satellite institutes include: the Institute for Surface and Film Analysis (IFOS) in the field of physics, laser physics, and materials research; and, the Institute for Composites (IVW), which conducts research in the areas of mechanical engineering, composite materials and process engineering. Kaiserslautern is recognized as one of the largest IT clusters in all of Europe.

[www.uni-kl.de](http://www.uni-kl.de)



### **COST Action TU 1207 "Next Generation Design Guidelines for Composites in Construction"**

Action TU1207 was established in 2013 and comprises more than 150 participants from 33 countries. The Action leverages the already large amount of work carried out on the use of composite reinforcement for structural applications by individual research teams and existing learned groups and aims to: coordinate European research in the field; develop and maintain a critical mass of researchers; offer a link between academia and industry; and develop a new generation of design guidelines based on European Standards. This will facilitate the adoption of European products not only in Europe but also internationally and help Europe stay one step ahead of International competitors.

[www.tu1207.eu](http://www.tu1207.eu)

### **Empa**

As an interdisciplinary research and service institute of the ETH Domain, Empa, the Swiss Federal Laboratories for Materials Science and Technology, conducts cutting-edge materials and technology research. Empa's R&D activities focus on meeting the requirements of industry and the needs of society, and thus link applications-oriented research to the practical implementation of new ideas. As a result, Empa is capable of providing its partners with customized services and solutions that not only enhance their innovative edge and competitiveness, but also help to improve the quality of life for the public at large.

Empa includes 28 laboratories focusing in the fields of nano structured materials, energy, sustainable build environment, health and performance and natural resources and pollutants.

The Structural Engineering Research Laboratory of Empa does research for a higher level of safety and security in civil engineering structures. Through the application of modern materials and technologies, new solutions in vibration mitigation, structural health monitoring and retrofitting of civil structures such as bridges and buildings are acquired.

[www.empa.ch/abt303](http://www.empa.ch/abt303)



### **endure**

The Marie Curie Initial Training Network endure started in October 2013 and includes 14 partner institutions from 11 European countries. The aim of the network is to train a new generation of researchers in the use of advanced composites for construction so as to develop and maintain a critical mass of research groups that will address the main scientific challenges in the field, enable the development of advanced material standards and design guidelines, coordinate European research, and offer a link between academia and industry.

[www.endure-itn.eu](http://www.endure-itn.eu)