

## Media communiqué

Duebendorf / St. Gall / Thun, 18<sup>th</sup> July 2008

*CICE 2008 – the 4th International Conference on FRP Composites in Civil Engineering*

### **Fiber reinforced polymers are becoming classic materials in civil engineering**

***From July 22<sup>nd</sup> to 24<sup>th</sup> over 250 scientists, engineers and specialists from around 30 countries are gathering for the 4th International Conference on FRP Composites in Civil Engineering to discuss the newest developments in the use of fiber reinforced polymers in the construction industry. This is the first time that Empa has organized this renowned biennial conference.***

Modern life without plastics is simply unthinkable – they play a role in practically every aspect of our existence. They even find applications in unexpected fields such as the construction industry, where fiber-reinforced polymers (FRPs) have proven to be particularly suitable. More than two decades ago Empa began to develop these materials for civil engineering applications, one of the first research institutions to do so. The idea of using FRPs, which had hitherto been employed only in the aerospace industry, for more down to earth applications, quickly led to trailblazing innovations and pioneering work from Empa's laboratories – ideas such as retrofitting FRP strengthening elements to bridges and buildings, or using cables of FRP instead of steel in the construction of cable stayed bridges. Today FRPs enjoy a high level of popularity in civil engineering industries across the world, due to the advantages they boasts over classical materials such as steel, concrete and wood – their ease of use, corrosion resistance, high tensile strength and lightness.

#### **CICE – the international meeting point for the experts**

CICE – the International Conference on FRP Composites in Civil Engineering – is the official conference of the International Institute for FRP in Construction (IIFC). The event is held every two years, the first time being in Hong Kong in 2001. Masoud Motavalli, head of Empa's Engineering Structures Laboratory, has succeeded in arranging for this renowned symposium to be held in Zurich this year. "It seems as if the IIFC's experts, who decide every two years on the next venue for the conference, appreciate our research and development work in this field, so they have entrusted us with the organization of this year's event," says a pleased Motavalli. Not without justification, for fiber reinforced polymers have played an important role at Empa since the 1980's. As Motavalli says, "we were regular pioneers in the research and application of these materials to retrofitting reinforcing elements to existing structures. Today one can find numerous examples of these stabilized structures all over the world."

At this year's conference, organized by Empa and held at the ETH Zurich, specialists and experts report the latest results of their research and the newest applications using FRPs in over 200 presentations. Today the novel materials are frequently used in the conversion of civil engineering structures for new purposes, or for protecting them from earthquake damage.

Topics covered during the seminar include the behavior of the materials during a fire, bonding FRPs to other materials, structural monitoring and recycling of the polymers. During the conference, the attendees also have the opportunity to take part in technical tours visiting various national "structural specialties" in their real life settings. One example of this is the Stork Bridge in Winterthur, which was opened in 1996. In this stayed cable structure across multiple railway lines, two of the 24 cables are made of carbon fiber reinforced polymer, the others more conventionally of steel. The historic wooden bridge in Sins, canton Aargau, which has been retrofitted with carbon fiber reinforced polymer strengthening elements, was also paid a visit, as was, of course, the place where many of these novel ideas were incubated, the Bauhalle – the Civil Engineering Building – at Empa in Dübendorf.

### **Mirko-Roš Award**

Several prizes are being awarded at the CICE 2008, the IIFC's Medal going to Professor Jin-Guang Teng of the Hong Kong Polytechnic University, whilst Renata Kotynia, Assistant Professor at the University of Lodz, Poland, has been awarded the Distinguished Young Researcher Award. There are further awards for the best papers and presentations at the conference. The most outstanding contribution in the field will be honored on July 24<sup>th</sup> with the Mirko-Roš Medallion, which Empa has awarded since 2005. The silver medal, designed by Hans Erni, bears the name of Mirko Roš, the Director of Empa from 1924 to 1949, whose leadership was instrumental in forming the character of the institution. Other medals go to researchers and engineers with whom Empa has for many years worked together on a friendly basis. The Mirko-Roš Committee has decided to honor the following persons in this way:

- *Prof. Maria-Anne Erki*, Kingston, Ontario (Canada) for her pioneering work in the use of high performance fiber-composite materials in civil engineering.
- *Prof. Sami Rizkalla*, Raleigh, North Carolina (USA), the founder of the world famous Canada Research Network of Centers of Excellence on Intelligent Sensing for Innovative Structures.
- *Dipl. Ing. HTL Heinz Meier*, Zürich (Switzerland), in recognition by Empa of his contribution to the very many fundamental developments in the application of carbon fiber reinforced polymers.

Cornelia Bodmer Roš, the granddaughter of Mirko-Roš, will present the medallions at the CICE closing ceremony on July 24<sup>th</sup> at the ETH Zurich.

### **Further information:**

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*Further information on the event, including the conference program, can be found at [www.cice2008.org](http://www.cice2008.org)*



The Stork Bridge in Winterthur, a road bridge over several sets of railway lines, opened in 1996. The spans are around 61 and 63 meters, the middle pylon is 63 meters high. In addition to 22 conventional parallel steel wire cables, two carbon fiber reinforced polymer cables were used – a world first.



The wooden bridge in Sims in canton Aargau (Switzerland) dates from 1809. In the 1990's the structure was reinforced with CRP slats which are not visible from the outside.

These images are available in digital form from [sabine.voser@empa.ch](mailto:sabine.voser@empa.ch)