Press Release

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Award Handed Over by the King

Carl Gustaf, King of Sweden, Hands the 2010 Marcus Wallenberg Award Over to KIT Scientist Hans Joachim Blaß



Carl Gustaf, King of Sweden, presents the 2010 Marcus Wallenberg Award to KIT scientist Professor Hans Joachim Blaß (Photo: The Marcus Wallenberg Foundation)

On September 27, 2010, Professor Dr.-Ing. Hans Joachim Blaß from Karlsruhe Institute of Technology (KIT) was presented the 2010 Marcus Wallenberg Award by the Swedish king Carl Gustaf. The award in the amount of two million Swedish Krona (about 200,000 Euros) is granted annually by the Marcus Wallenberg Foundation. Professor Blaß is granted this award for his pioneer work in the field of innovative and reliable timber connections with a high load transmission capacity that can be applied efficiently on construction sites and in industrial processes.

As a construction material, wood has several important environmental advantages. It is renewable, it stores carbon sequestered from carbon dioxide in the atmosphere, it can be reused in many excellent ways and, if recycled, it represents a carbon dioxide-neutral energy source.

Competitiveness of wood as a construction material depends on the

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properties of the wood components and also largely on the connections of the components. Generally, the capability of connections of transmitting loads limits the use of wood constructions. The anisotropic nature of wood, with much weaker mechanical properties perpendicular to the grain than in grain direction, aggravates the design and modeling of load transmission of connections. So far, this has limited the use of wood in general and in particular for larger constructions like bridges, big warehouses, sports arenas, agricultural buildings, industrial buildings, and outstanding public buildings.

The extensive research activities of Professor Blaß resulted in fundamental construction knowledge on wooden connections and joints. Based on mechanical principles, Blaß transferred knowledge into a usable format for engineers in practice. He also developed methods for the construction and calculation of connectors and connections and played an important role in the international standardization of these methods.

Professor Blaß paved the way for the use of self-drilling screws in wood constructions by promoting the manufacture of very large screw dimensions and developing and introducing these connections for high-load applications. This work allowed for the erection of wood constructions and also resulted in highly simplified methods for the repair of damaged and the reinforcement of new timber girders.

Development and introduction of efficient connections that are easy to install have resulted in the possibility of building large wooden constructions and saving wood material. Attractive logistic solutions have been conceived on the basis of the use of prefabricated components.

The developments by Professor Blaß are relevant to an increasing use of large wood construction elements, such as glue-laminated timber. In Europe, its use has increased by more than a factor of four compared to the mid 1990s. The work of Blaß has contributed to a significant increase in the market share of timber frames for the new construction of apartments. In the United Kingdom, for instance, this share has more than doubled in the past ten years.

Professor Dr.-Ing. Hans Joachim Blaß

Professor Blaß, born in 1955, made his Ph. D. at the Department of Civil Engineering and Surveying of the University of Karlsruhe in



1987. After employments with the University of Karlsruhe, the Canadian company of Forintek Canada Corp., and TNO Building Research in Delft, the Netherlands, he was appointed Professor for Wood Constructions at the Technical University of Delft. Since 1995, he has been Professor of Timber Construction at Karlsruhe Institute of Technology (KIT) that was founded by a merger of Forschungszentrum Karlsruhe and Universität Karlsruhe on October 01, 2009. He is heading the Research Center for Steel, Timber, and Masonry. Apart from his academic career, Professor Blaß is active in the standardization of wood constructions as well as in knowledge transfer in the field of complex wood constructions inside and outside of Europe. Professor Blaß is partner of the Karlsruhe engineering consultants Blaß & Eberhart.

The Marcus Wallenberg Award

The Marcus Wallenberg Award is an international award introduced in 1980 to commemorate Marcus Wallenberg, the deceased Chief Executive Officer of Stora Kopparbergs Bergslags AB (now Stora Enso), and his achievements. Every year, the award is granted for pioneer research of a scientist or a small group of cooperating scientists. In the opinion of the election committee and the management of the foundation, the honored breakthrough will have significant impacts on industry. By honoring the winner, the award shall also stimulate further worldwide research. This year, the award was granted for the 27th time. The prize value is SEK 2 million.

Karlsruhe Institute of Technology (KIT) is a public corporation and state institution of Baden-Württemberg, Germany. It fulfills the mission of a university and the mission of a national research center of the Helmholtz Association. KIT focuses on a knowledge triangle that links the tasks of research, teaching, and innovation.

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