

## Marcus Wallenberg Prize announcement 2009

### Description

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The Marcus Wallenberg Foundation proudly announces that the 2009 Marcus Wallenberg Prize is awarded to Dr. Jouni Ikäheimo, Mr. Vesa Kajander and Mr. Bengt Welin, Finland, for their breakthrough development of the direct drive system for paper machines. This opens significant opportunities for new design concepts and process configurations of paper making lines with advantages related to the investment, operation, product quality, ergonomics and environmental impact of the paper making process.

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The Direct Drive System (DDS) is radically renewing the traditional drive technology, which dates back some one hundred years. The innovation is based on the Permanent Magnet Synchronous Motor technology and is a true breakthrough innovation on the industrial scale. The DDS provides better torque characteristics, very precise speed control and high efficiency without the need for gearboxes, pulse encoders and auxiliary components. It gives freedom to create new innovative machine design concepts and process configurations, which require less space, simpler machine layouts, fewer components, less civil work and lower investment costs. The innovation provides better runnability with less frequent web breaks, better availability of the paper machine with fewer mechanical failures and less maintenance, better overall efficiency with minimum downtime and reduced lifecycle costs. The environmentally sound solution reduces electrical energy and oil consumption, reduces noise levels and is more ergonomic and safe for the operators. If applied to all paper machines with a wire width exceeding 5 metres, DDS would have the potential to reduce energy consumption by approximately 400 GWh in Europe and more than 1 200 GWh in the world. This would give savings equal to about one coal power plant in Europe and two globally.

The laureates have acted as pioneers and key persons within ABB to develop the new direct drive technology. Now, after many years of intensive development, the technology is becoming an industrial standard and brought to global commercial success by the recognized suppliers for the pulp and paper industry.

Co-operation with equipment suppliers for the pulp and paper industry has been an important element of the development. The paper machine drive system is followed by several other potential applications for the whole pulp and paper industry creating a new technology platform with larger business volumes and new opportunities to apply the technology to other, perhaps unforeseen areas.

During the course of the breakthrough development of the technology, wide and deep research co-operation with Universities and Research Institutes took place.

Jouni Ikäheimo, Vesa Kajander and Bengt Welin

Dr. Jouni Ikäheimo was born in 1968. He has since 1998 been the leader for engineering and construction of permanent magnet motors at ABB Oy, Motors, and an inventor in the area of permanent magnet motors.

Mr. Vesa Kajander was born in 1962. Since 2000 he has been the project manager for the development project of Direct Drives for Paper Machines at ABB Oy, Process Industry, and an inventor in the area of Direct Drives for Paper Machines.

Mr. Bengt Welin was born in 1943 and is now retired. He has been acting as the global business responsible person of Paper Machine Drives of ABB and an inventor in the area of Direct Drives for Paper Machines. He prepared the project proposal of direct drive to ABB Management in May 1995.

Prize Ceremony and Symposium

The Prize will be presented by His Majesty, The King of Sweden, at a ceremony in Stockholm on 28 September, 2009. On 29 September, a symposium around the subject of the Prize-winning research and its impact on the forest and forest products industries will be arranged.

For more information, please contact

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The Marcus Wallenberg Prize

The Marcus Wallenberg Prize is an international prize that was established in 1980 to acknowledge the lifetime activities and the memory of Marcus Wallenberg, the late Chairman of Stora Kopparbergs Bergslags AB (now Stora Enso). Each year the Prize recognizes a single research breakthrough by one scientist or a small group of collaborating scientists. In the view of the Prize Selection Committee and the Board of the Foundation, the selected breakthrough will have a significant effect on the industries. While rewarding the winner, the Prize is also intended to stimulate further research around the world. This year, the Prize will be given for the 26th time. The Prize sum is two million SEK.

For more information about the Marcus Wallenberg Prize, please visit [www.mwp.org](http://www.mwp.org)