

Development of Direct Drives of Paper Machines is awarded the 26th Marcus Wallenberg Prize

## Description

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During a ceremony at the Grand Hôtel in Stockholm on 28 September, H.M. the King of Sweden awarded the Marcus Wallenberg Prize 2009 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

### MWP prize winners

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 awarded achievement is a fascinating case of innovative thinking and entrepreneurship, providing opportunities for significant reductions of cost, energy consumption and climate change impact of the paper making process” said Marcus Wallenberg, Chairman of the Marcus Wallenberg Foundation at the award ceremony.

### The Laureates

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.

#### The Marcus Wallenberg Prize

The Marcus Wallenberg Prize was instituted to encourage scientific achievements within the forestry and forestry-related sectors. This year it was awarded for the 26th time. The prize winners receive 2 million Swedish Crowns.

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For general information about the prize, see [www.mwp.org](http://www.mwp.org)