

Team accelerates commercialization of foam forming technology

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Foam forming technology offers companies major cost saving possibilities in paper and paperboard manufacturing. It also expands the use of natural fibres in the production of recyclable and lightweight

products. Some products can even be lightened by 15-25%. Together with an international industrial consortium, VTT has launched a EUR 3.6 million project to promote the commercialisation of the technology.

In the foam forming process a significant amount of air - in the form of tiny bubbles - is mixed to a water-fibre suspension. This improves the properties of paper and paperboard as well as the raw material and energy efficiency. The technology can also be used in the production of porous, lightweight and even products such as non-wovens and insulation materials.

The aim of the 2.5 years [project](#), which is being coordinated by VTT Technical Research Centre of Finland Ltd, is to speed up the implementation of the technology towards industrial scale. The project targets, for example, to explore how current paper and board machines could be converted to foam forming. The project will support Europe to achieve its low-carbon, resource-efficiency goals and promotes the Finnish Bioeconomy Cluster's research strategy, one of the aims of which is to develop smart and resource-efficient production technologies.

From a pilot towards industrial scale

Launched in February 2015, the project is a continuation of development work which began as part of the Finnish Bioeconomy Cluster FIBIC's research programme in 2008. During 2013-2014, VTT's pilot-scale research environment for fibre processes in Jyväskylä was converted to foam forming with the support from the European Regional Development Fund.

The potential of the technology has been verified and new product applications have been demonstrated in several trials done with both large companies and small and medium size enterprises. Some products

can be lightened by as much as 15-25% and the most recent results indicate about 20% reduction in drying costs in papermaking. Due to the promising results, the interest of companies has grown considerably.

"At Valmet, we believe in the foam [forming technology](#) and the new possibilities it offers to our customers. We are just now exploring the possible applications, both at VTT and our test facility in Jyväskylä," says Sami Anttilainen, Valmet's Vice President, Technology.

Broad international industrial consortium

The project has raised extensive interest. The following 20 industrial partners from Finland, North America, Europe and Asia are participating the project coordinated by VTT: Albany International, BillerudKorsnäs, Domtar Paper Company LLC, International Paper Company, Irving Paper Limited, Kemira, Kimberly-Clark Corporation, Kuraray Europe, Lenzing Aktiengesellschaft, Metsä Board, Moorim SP, Pixact, Sappi, Smurfit Kappa Group, Sofidel S.P.A., Stora Enso, Sulzer Pumps Finland, UPM-Kymmene, Valmet and Wetend Technologies.

The kick-off meeting of the project was held in Jyväskylä on 5 March 2015. "It is great to see so many innovative companies, which are joining their forces to develop the foam technology further. The project will strengthen the already strong position of VTT and Central Finland as the leading centre of expertise for fibre-based [products](#) and bioeconomy. It also builds confidence that our long-term R&D work in the paper and board sector is highly valued by the companies," explains Harri Kiiskinen, VTT's Principal Scientist leading the project.

The project has received a million euro funding from the European Regional Development Fund, via the Regional Council of Central Finland.

More information: VTT and its partners will present foam forming technology at a seminar organised by TAPPI in Atlanta on 22 April 2015 (http://www.papercon.org/foam_tech.asp).

Provided by VTT Technical Research Centre of Finland

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