

# Cellulose becoming a supermaterial of the future

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The researchers are working together to develop new biomaterial applications within the Design Driven Value Chains in the World of Cellulose (DWoC) 2.0 project coordinated by VTT.

The DWoC project is seeking new design-driven [applications](#) for [cellulose](#) and is developing related technology as well as exploring new ways to create value in cellulose-based ecosystems. These [new materials](#) and innovations can replace fossil-based raw materials in textile products, interior decoration elements and car interior materials.

"The Government Programme emphasises the importance of the bioeconomy for Finland's future and economic renewal. Renewal necessitates giant research-driven leaps, strong risk taking and national investment in research and innovation funding. Wood the -"green gold" of Finland - is a renewable raw material and wood cellulose can be converted to a golden opportunity when we find new high added value applications alongside the traditional paper and pulp industry," says Project Coordinator Johanna Buchert, Vice President, Research, VTT.

Broad cooperation is required to promote the bioeconomy and sustainable development. During the first phase of the DWoC project various ways to successfully combine design and materials research were tested. This gave rise both to preliminary product concepts and ideas and to promising technology innovations. During the course of the project yarn made directly from pulp fibre suspension was developed, for example. Manufacturing was started by Spinnova Oy at the beginning of

2015.

Currently the second phase of the project has started in which textile applications such as 3D printing of cellulose are being developed and the application of cellulose-based materials in the built environment is being studied. In addition to new materials and products, new types of textile manufacturing equipment and processes are being developed. Tekes's funding will enable various operators to collaborate, experiment and seek innovations to create new business ideas and opportunities.

The future commercialisation of new products and concepts is an important objective. The project will investigate formation of a value producing network of enterprises around cellulose-based material which includes, among others, design-sector companies.

The DWoC project aims to share information about the potential of cellulose [materials](#) and to strengthen the broad-based collaboration network both in Finland and the rest of the world. In order to achieve the national objectives the participation of operators in various sectors is needed, including funders, traditional as well as new companies, research institutions and universities. There is a strong belief in Finland's future as one of the superpowers in the generation of a new cellulose industry.

**More information:** Brochure on the results of the project's first phase: [www.vttresearch.com/Documents/...\\_nal\\_presentation.pdf](http://www.vttresearch.com/Documents/..._nal_presentation.pdf)

Provided by VTT Technical Research Centre of Finland

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