

Strengthening Europe’s furniture industry with sustainable bio-binders from renewables

SUSBIND develops bio-based binders for the wood-based furniture production by substituting current fossil-based binders made from harmful chemicals by using renewable resources from surplus feedstock from European bio-refineries. The novel SUSBIND binders will reduce the footprint of particle boards and medium density fibreboards and will strengthen the European furniture industry through cost efficient eco-products.

(Vienna, 11.12.2019) Currently, manufacturers of wood-based boards such as Particle Board (PB) and Medium Density Fibreboard (MDF) rely on the use of fossil-based binders and adhesives. To date, none of the previously tested bio-based alternatives have performed satisfactorily on an industrial scale. The SUSBIND project aims to use novel enzymes to develop and test new bio-based options from European biorefinery feedstocks which leading board manufacturers such as EGGER and Valbopan will validate for particleboard (PB) and Medium Density Fibreboard (MDF) production, respectively. The international furniture retail company IKEA will evaluate the feedstocks from its own and their customers point of view.

The SUSBIND binder system will allow for the production of PB and MDF wood boards with 50-75 % reduced emissions compared to conventional wood boards with fossil-based binders. Thus, SUSBIND will support the industry to comply with the EU Ecolabel for wooden furniture, to benefit consumer health by improved indoor-air quality, which also helps to mitigate climate change. *“More than half of the IKEA climate footprint comes from the materials in the products and the production. The transformation into becoming climate positive is underway and bio-based or renewable based glues in the furniture production are important contributors. By 2030 we aim to reduce greenhouse gas emissions by more than the entire IKEA value chain emits. Glue contributes with 6 % to the total climate impact of IKEA. Finding renewable based solutions, with for instance support from the SUSBIND project, is a priority in order to meet two key goals set out in the IKEA sustainability strategy – to only use renewable and recycled materials by 2030 and to become climate positive.”*

Future of wood-board production along a full sustainable value chain

The objective of the SUSBIND project is to produce and test sustainable bio-based binders for the industrial wood-based panel board production as an alternative to current binders. *“The expertise brought together under the SUSBIND project will finally see development of a bio-based binder able to compete on an industrial scale. As we become increasingly demanding of green production methods in all areas, SUSBIND will provide Europe with a competitive advantage”* says Massimo Bregola (Cargill), SUSBIND’s Scientific Coordinator. To reach these goals, SUSBIND will identify and select the most sustainable feedstock from European biorefinery surplus (starch and vegetable oils) as raw material for producing thermoset resins as bio-based binders creating a full value chain. Additionally, economic feasibility studies of the novel binders will demonstrate the marketability of resulting new bio-based furniture products, which will ultimately strengthen the European furniture market.



Full value chain of the SUSBIND project (© RTDS)

Bio-binders in compliance with new quality standards

To ensure that the produced bio-based resin developed has a smaller carbon footprint and a lower human health impact and that the new binder meets all relevant market, standardisation and regulatory requirements, a complete life cycle assessment (LCA) will be conducted and further dissemination, exploitation, communication strategies developed in order to enhance the overall innovation capacity and integration of newly gained insights, both for the project partners and the furniture sector as a whole.

The SUSBIND project will contribute to the goals of the BBI JU by producing a fully competitive bio-based chemical precursor for mass consumption products by providing new functionalities or better performance than the relevant fossil-based counterpart. It will decrease the carbon footprint of production by up to 25 % over existing state-of-the-art methods. In addition, it will create two new cross-sector interconnections in bio-based economy clusters and two new bio-based value chains.

More information on SUSBIND

SUSBIND Website & Newsletter: www.susbind.eu; <https://susbind.eu/newsletter/>

SUSBIND Video: <https://www.youtube.com/watch?v=pOZh4VF-9CU>

Social profile on Twitter: <https://twitter.com/susbind>

Business profile on LinkedIn: www.linkedin.com/company/18656947/

Additional Information

EU Ecolabel for wood furniture: <http://ec.europa.eu/ecat/category/en/34/furniture>

IKEA sustainability report 2018: <https://preview.thenewsmarket.com/Previews/IKEA/DocumentAssets/535135.pdf>

Press contact – RTDS Group

Dr. Stefan Weiss

Lerchengasse 25/2-3, A-1080 Vienna, Austria

E-Mail: weiss@rtds-group.com

Phone: +43-(0)1-3231000

Project coordination & management

RTDS Group, Austria (www.rtds-group.com)

Scientific coordination

Cargill Germany GmbH (www.cargill.com)

Research partners

Fraunhofer IGB, Germany (www.igb.fraunhofer.de/en.html)

TU Dresden, Germany (www.ihl-zittau.de; <http://tu-dresden.de>)

CSIC-CIB, Spain (www.cib.csic.es/)

CSIC-IRNAS, Spain (www.irnas.csic.es)

Wood K plus, Austria (www.wood-kplus.at)

SMEs (small and medium enterprises)

Valbopan, Portugal (www.investwood.pt; www.valchromat.pt)

JenaBios GmbH, Germany (www.jenabios.de)

CE Delft, The Netherlands (www.ce.nl)

Industry

FRITZ EGGER GmbH, Austria (www.egger.com)

IKEA of Sweden (www.IKEA.com)