

PRESS RELEASE

Uppsala, January 24th, 2024

The *BioGlue-Centre* is a network of players along the value chain of bio-adhesives: 3 Swedish universities, and a strong industrial ecosystem of bio-based feedstock providers, adhesive manufacturers, end-product manufacturers (furniture, construction, packaging), and associations.



The *BioGlue-Centre* received funding for a 5-year period 2023-2028 within Vinnova's call for Centres of Excellence in Sustainable Industry and Digital Transformation 2024, while a prolongation can be given for five more years until 2033. The total budget of the granted project is 109 mSEK.

Vision of the Centre is to significantly reduce the dependency on fossil-based materials in the adhesive industry by developing paradigm-shifting knowledge of bio-based adhesives and becoming a world-leading research environment in Sweden.

The *BioGlue-Centre* deals with an urgent situation regarding wood and paper adhesives. The market is huge with a volume of 14.7 million t/year and value of 170 billion SEK/year, but unfortunately, these adhesives are almost exclusively fossil-based and manufactured with toxic or harmful compounds. This fact creates environmental as well as health concerns, and it is urgent to find new solutions.

The *Centre* addresses the needs of the furniture, construction and packaging sectors, which want to adapt by increasing the speed of finding bio-based alternatives to the vast amounts of fossil-based adhesives used today. There is major need for: (a) Sustainability and prevention of global warming, since adhesives have a significant carbon footprint in production; (b) Compliance with strict legislation and consumer interest for healthier and more environmental friendly products; (c) Recycling, since component separation is not possible today just because of the adhesives and some wood products like fibreboards do not have commercial viable recycling option.

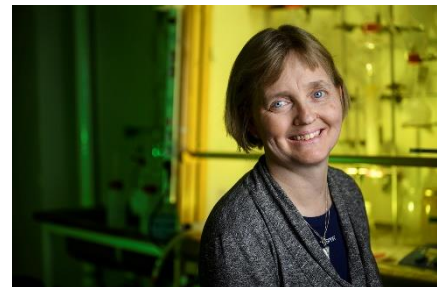
According to Prof. Stergios Adamopoulos, director of the Centre: "Adhesives are necessary for the production of modern, functional products, whether they are used for construction, furniture, packaging or other applications. Everybody knows that an adhesive can put two components or materials together, but not everybody knows how this works. Fossil-based adhesives have been the subject of extensive research and development in the previous century. Therefore, we know how bonding works for them but we do not know exactly how it works for bio-based adhesives. Studying the how is essential for successful development and implementation of bio-based adhesives. And this is what we focus on in the *BioGlue-Centre*".

Companies in the sector use multi-material components (wood, fibres, paper, commodity plastics, etc.) with very different requirements on adhesives but tied together by similar research questions on adhesive bonding. Research activities in the Centre have been grouped into three Work Packages: WP1. Raw materials and formulations; WP2. aspects of bio-adhesives; WP3. End-use requirements and sustainability. WPs present a true collaboration of all partners, and are coordinated by each university with deep knowledge in the fields of polymer science (KTH), adhesion and adhesives (SLU), and wood technology (Linnaeus University).

Vinnova funding and industry resources will be pooled to implement projects in the form of PhD or MSc thesis, a postdoc, or a particular subject for technical collaboration. As a major output during the 1st phase of the *Centre*, resources will be translated into improved knowledge on bio-based adhesives, basically in the form of open science publications. This will enable the full development of the *Centre* during the 2nd phase as a mature entity with experts, new methodological approaches, and validation schemes of bio-based adhesives.

The kick-off meeting of the *Centre* took place on January 23-24, 2024 in Uppsala, Sweden. A total of 44 participants and the project officer at Vinnova had the opportunity to get a deeper introduction to *BioGlue-Centre* activities by WP leaders, be familiarized with the management and communication routines, and listen to presentations from non-academic partners on core businesses and challenges for the future. Most importantly, the participants engaged in group discussions with aim to develop the collaboration in the *Centre* from start, understand each other's expectations and plan the roadmap for achieving the ambitious goals.

"The recruitment of the first group of PhD students and postdocs will take place in the first half of 2024, and we are looking forward to making decisions for specific projects", says Anders Brolin from Stora Enso who is the Chairman of the Board. Professor Eva Malmström, Vice-Director of the *Centre* explains that "we will seek collaboration with Scientific Advisory Board with international experts in the field, and target a wide uptake of all tangible results through a broad dissemination and exploitation".



Pictures: *BioGlue-Centre* consortium at kick-off meeting in Uppsala, Sweden, January 23-24, 2024 (top)

Anders Brolin, Chairman, Stora Enso (first); Stergios Adamopoulos, Swedish University of Agricultural Sciences (second); Eva Malmström, KTH (third). Photo credits: Stora Enso, SLU, KTH.
