



SPIRE-09-2017

## **NOVUM**

Full Title: Pilot line based on novel manufacturing technologies for cellulose-based electrical insulation components

### **Aim:**

The new streamlined manufacturing concept developed in NOVUM will aim to a leap in the manufacturing process of electrical insulation components. Remarkable improvement in terms of energy consumption, waste generation, duration and automation will be obtained. It will also have a positive impact on both the quality and reliability of insulation components as well as on the daily output of the components as well as on production flexibility.

This new pilot line will result in significant efficiency improvement and higher productivity and flexibility, while ensuring lower operational costs as compared with the state-of-the-art process. Manual production will be replaced by an automated manufacturing concept with increased resource efficiency, including 40% reduction in labour time and 60% reduction in waste generation, 20% lower energy consumption and 40% decrease in operating costs.

The main objectives of NOVUM are :

> Develop and demonstrate a compact and feasible pilot line concept based on novel processing technologies for rapid, design-driven production of advanced cellulose-based electrical insulation components.

> Manufacture two different types of electrical insulation components meeting the technical product requirements in the new pilot line constructed in the project.

### **Concept:**

Cellulose, as a renewable, non-toxic, non-allergic,

and abundant forest material, has several benefits to be utilized in a wide range of applications. Currently, it is, however, mostly used in large scale applications: paper, packaging, and textile. The current industrial technologies have limitations in forming three dimensional structures from cellulose, which could be beneficial in complex shaped soft or hard objects. On-demand and customer-oriented manufacturing will thus become feasible and enable the market competitiveness. An additional benefit with the introduction of novel processing for cellulose-based materials is promoting the utilisation of renewable and abundant bio-based raw material for the current application and beyond.

Start date:

03/08/2017

End date:

30/09/2021