

## BBI JU

SSUCHY benefits from a contribution of 4,45 million euros from the Bio-Based Industries Joint Undertaking (BBI-JU), a public-private partnership between the European Union and the Bio-Based Industries Consortium (BIC), operating under the European Horizon 2020 program.

The objectives of BBI JU are : to contribute to a sustainable, low carbon and profitable economy; to increase economic growth and employment, especially in rural areas, by developing competitive biosourced industries in Europe.

## KEY FIGURES

### PROJECT DURATION:

48 months, from September 2017 to August 2021

### COMPOSITION

- 17 partners from 7 countries
- 10 academic institutions
- 3 SMEs
- 3 industries
- 1 competitiveness cluster

### BUDGET

Total cost: 7,411,150.71 €

BBI JU contribution: 4,457,194.75 €

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**ssuchy**  
DEVELOPING ADVANCED BIO-BASED  
COMPOSITES



This project has received funding from the Bio-Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation program under grant agreement No 744349.



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COMPOSITES



SCOOTER



AUTOMOTIVE



AEROSPACE



ACOUSTICS

## CONTEXT AND PERSPECTIVES

### A LOGIC OF SUSTAINABLE DEVELOPMENT

SSUCHY aims at exploiting the intrinsic and differentiating properties of plant fibres and biopolymers derived from lignocellulosic feedstock to develop fully bio-based composites with improved functionalities. The main driver

behind this project is not only to substitute conventional fossil-based materials with more sustainable bio-based ones but also to achieve improved functionalities that surpasses those of fossil-based ones. Enhanced functionalities are, in addition to load-bearing resistance and weight reduction of structures, enhanced durability, vibration damping, vibro-acoustic control and fire retardancy while retaining an essentially recyclable and, for certain

applications, biodegradable character. Such developments would provide to the composite industry a significant value and functions added products with high socio-economic impacts and minimized environmental impact. It will create opportunities to expand market applications for bio-based composites to semi-structural and functional applications in transportation along with new opportunities in high value niches.

### PERSPECTIVE

The use of plant fibres is increasing outstandingly and demand is expected to grow by **300%** over the next 25 years.

### THE ADVANTAGES OF PLANT FIBRES

Extracted from biomass, plant fibres have numerous advantages in the fields of ecology (renewable resource usage, recyclability, biodegradability), of economy and social aspects (wide availability, low production cost, preservation and development of agricultural jobs in the fibre-producing countries). In addition, they offer new and/or improved properties and functionalities such as specific mechanical and damping properties.

## OBJECTIVES AND EXPECTED IMPACTS

### THE DEVELOPMENT OF INNOVATIVE BIO-BASED COMPOSITE CONSTITUENTS

The SSUCHY project is positioned on the development of composite constituents, based on a renewable resource (i.e. biopolymers and plant fibre reinforcements) for the development of multifunctional recyclable and/or biodegradable bio-based composites with advanced functionalities for application in different sectors. It is dedicated to the development of specific concepts, technologies and materials to achieve a complete value chain and prove the principle at the scale of product demonstrators.

### APPLICATION FIELDS

SSUCHY partners will work towards the development of multifunctional recyclable and/or biodegradable bio-based composites with advanced functionalities for applications in transportation (ground transportation and aerospace) and high value market niches such as the acoustic and electronics sectors.

## INCREASE THE SUSTAINABILITY AND THE COMPETITIVENESS OF EUROPEAN INDUSTRY

The expected impact is twofold:

- set the basis and validate new bio-based constituents for composites
- develop new composite structures and products based on these bio-based constituents and demonstrate their advanced functionalities at demonstrator level.

### A LARGE SCALE MULTI-STAKEHOLDERS PROJECT

SSUCHY brings together 17 European partners:

- **Coordinator:** Université de Franche-Comté – FEMTO-ST (France)
- IAR, The French Bioeconomy Cluster (France)
- Katholieke Universiteit Leuven (Belgium)
- University of Bristol (United Kingdom)
- Centre National de la Recherche Scientifique – ENSCP (France)
- Stockholms Universitet (Sweden)
- École Nationale d'Ingénieurs de Tarbes (France)
- AkzoNobel Functional Chemicals BV (Netherlands)
- Linificio e Canapificio Nazionale Srl – Marzotto Spa (Italy)
- Trèves (France)
- Wilson Benesch (United Kingdom)
- EADCO GmbH (Germany)
- NPSP BV (Netherlands)
- École Nationale Supérieure Arts & Industries Textiles (France)
- University of Derby (United Kingdom)
- Université de Bourgogne (France)
- Università Cattolica del Sacro Cuore – CERZOO (Italy)

## A strongly applied and industrial research

From building blocks to polymers



Manufacturing textile preforms



Mechanical characterization of textile preforms

