

ECOFUNCO Project

The overall objective of ECOFUNCO is to select, extract and functionalise molecules such as proteins, cutin, polysaccharides, polyphenols, carotenoids, and fatty acids from readily available, low-valorised biomass sources. This will be used to develop new bio-based coatings for application on two different substrates, specifically cellulosic and plastic based. This will deliver materials for food and personal hygiene use that will offer better performance than currently-available products, as well as delivering more sustainable end of life options.

Antimicrobial

Antimicrobial coatings based on microbial cellulose and chitin nanofibrils, and/or chitosan for cellulosic tissues (sanitary), paper and cardboard (packaging for fresh products like pasta, ham, meat), woven and nonwoven (personal care).

Water repellent

Cutin based formulations for coatings water repellent (tableware, paper cups, service paper, etc.), water vapour barrier (packaging) and protective properties (non-food packaging).

Multilayer

Protein-based barrier adhesive and chitosan-based coatings for multilayer food packaging.

Other

Additionally, combinations of several of the above mentioned properties will be explored, resulting on new applications.

What Are The Key Elements On Which The Research Will Be Focused?



Raw materials

Mapping of the availability and sustainability of the selected feedstocks, optimization of the already developed methods of extraction of proteins, polysaccharides, cutin and active ingredients, and functionalization of polysaccharides.



Industrial production

Bringing at semi-pilot scale the previously optimized bio-based coatings on cellulosic and plastic substrates for production of personal care, tableware and packaging products.



Coatings

Optimization of the coating materials based on proteins, polysaccharides and cutins –and their blends–, also considering possible modification and functionalization of the molecules as well as their formulation and application by different technologies.



Life Cycle Assessment

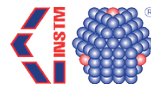
Fulfillment of safety and health requirements, as well as regulations related with the foreseen products for the elaboration of Life Cycle Assessment and Cost Effectiveness Analysis.

ecofunco



**ECO sustainable multiFUNctional
biobased COatings
with enhanced performance
and end of life options**

ECOFUNCO consortium consists of 17 partners from 8 countries -Italy, Germany, Spain, Belgium, Croatia, UK, Turkey and Israel-. It benefits from a strong industrial involvement, since 9 SMEs and 2 large companies collaborate with a total of 6 RTD institutions, gathering the necessary infrastructure, knowledge and expertise to reach the project objectives and contribute to the expected impacts of the topic BBI 2018 R49 – “Develop functional molecules for bio-based coatings outperforming existing solutions and meeting market requirements”.



Universitat d'Alacant
Universidad de Alicante



Coordinator: Consorzio Interuniversitario Nazionale per la Scienza e Tecnologia dei Materiali (Italy)
Grant Agreement ID: 837863
Total cost: €5.567.436,25
EC Contribution: €4.613.778,25
Call: H2020-BBI-JTI-2018
Funding Scheme: BBI-RIA
Duration: From 2019/05/1 to 2022/04/30



This project has received funding from the Bio Based Industries Joint Undertaking (JU) under grant agreement No 837863. The JU receives support from the European Union's Horizon 2020 research and innovation programme and the Bio Based Industries Consortium.



ecofunco.eu



@ECOFUNCO_BBI



ECOFUNCO_BBI