

*SUS*tainable Antiviral and Antimicrobial Nanocoatings 2nd Newsletter - June 2023



<https://susaan-project.com/>



SUSAAN EU-Project

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 - SYNTHESIS OF BIOBASED NANOFIBERS
 - SYNTHESIS OF BIOBASED NANOCAPSULES
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LOOKING AT M12 WORK PROGRESS

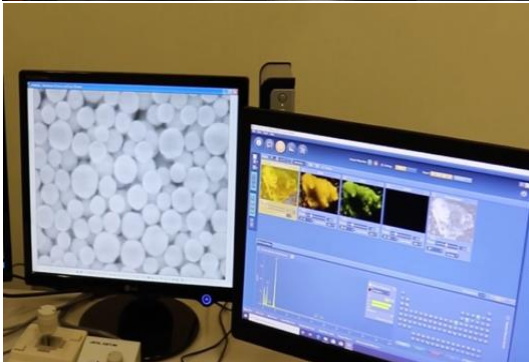
SUSAAN project has made progress on the synthesis and screening of highly efficient inorganic and bio-based active nanomaterials (ANM), nanofibers and filled nanocapsules with enhanced antiviral/antimicrobial functionalities.

Inorganic Nanoparticles



LUREDERRA has advanced in collaboration with **TECNAN** on the different zinc oxide Nanoparticles (NPs) synthesis by FSP (Flame Spray Pyrolysis) and characterization using different precursors and solvents.

NCSR team, has synthesised Inorganic NPs, using a novel templating strategy called assisted impregnation (A.I.) for the inclusion of semiconductor nanoparticles, into mesoporous hosts.



In order to increase the AM/AV properties and to improve the integration of the inorganic NPs developed during the project, the NPs will be further modified.

Both teams have worked together on the ANM antibacterial effect tests, obtaining first indicative antibacterial effectiveness results.

Bio-based Nanofibers

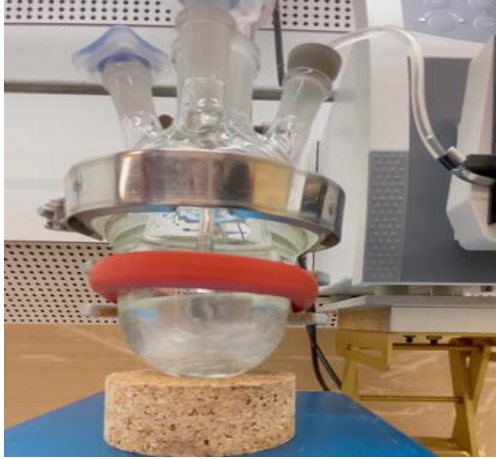
CELABOR has achieved progress on the plant's extraction of bioactive antiviral and antimicrobial components through classic and pressurized extraction.

Progress in mechanical treatments tests link to the production of functionalized bio-based and hybrid nanofibers at different conditions have been done.

Cellulose and Chitin biobased nanofibers to produce hybrid oxide nanofibers and their introduction in coatings for plastics and textile is ongoing.



Bio-based Nanocapsules

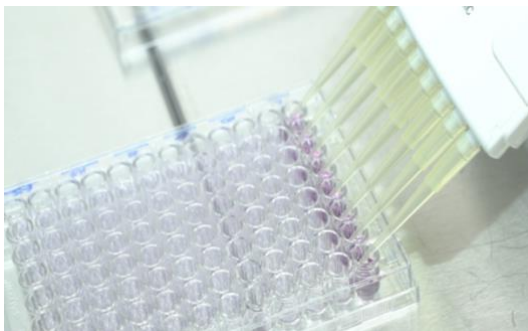


IVW has synthesised nanocapsules based on a biopolymeric, non-modified and modified plant protein shell, encapsulating bio-based actives such as oregano, eucalyptus, and tea tree essential oils with antimicrobial and antiviral properties.

This development aims at achieving biocompatibility and use cross-linked nanoparticles with validated improved stability for coating matrices and substrates.

IVW is currently working on optimization of the synthesis procedure.

Sustainability assessments



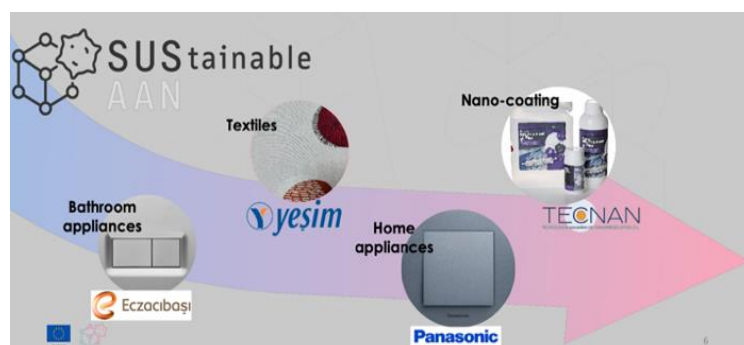
SUSAAN project intends to meet the concept of Safe-and-Sustainable-by-Design (SSbD), which embraces early focus on the supply chain while reducing those materials and chemical products that may be harmful to human health and the environment.

To date, **ITENE** and **NCSR** have already worked on some toxicity and cytotoxicity tests applied to organic and inorganic precursors.

INTERTEK has concentrated its efforts mainly on information gathering about the regulatory situation concerning the SUSAAN precursors and products.

Likewise, **ARDITEC** has started the screening LCA evaluation using data provided by partners and supporting the products synthesis phase. Environmental assessment is advancing towards the first deliverable planned for M18, expected to highlight the first hotspots (main sources of impacts) of the SUSAAN products.

The selected solutions will be tested in marketable products through the industrial consortium partners **ECZACIBAŞI**, **PANASONIC**, **YEŞİM GROUP** and **TECNAN**.

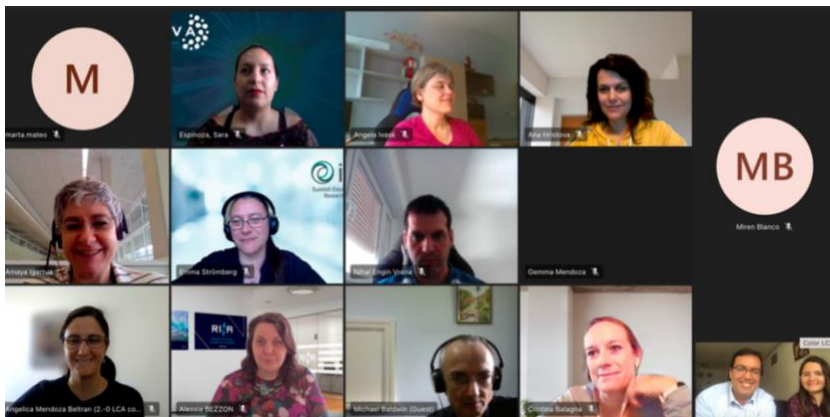


WORKSHOP joined eight sister EU funded Projects

Exploring potential synergies

SUSAAN organised a virtual meeting and invited seven sister EU-funded projects, **MIRIA**, **NANOBLOC**, **NOVA**, **RELIANCE**, **STOP**, **TRIPLE-A-COAT** and **IRISS**, a project which aims at connecting and transforming the Safe-and-Sustainable-by-Design community in Europe and globally.

Coordinators and work package leaders, particularly discussed regarding potential cooperation on dissemination and communication activities, technical synergies, and potential actions to work in the sustainability challenges to develop novelty antimicrobial, antiviral nanocoatings applied to several touched surfaces.



First SUSAAN Video has been released

The SUSAAN project, as an innovative solution to prevent the spread of viral infections is a topic of interest to several audiences.



The official first video has been launched and as part of the communication strategy, aims at presenting the SUSAAN concept to the scientific community, stakeholders, and public, explaining the activities and the role of all partners integrating the consortium.

The video is available on social media channels: [YouTube](#) and the [SUSAAN website](#).

For more information about SUSAAN Project, please visit the [website](#) or contact the coordinator Marta Mateo, marta.mateo@lurederra.es.