

SUSustainable Antiviral and Antimicrobial Nanocoatings 3rd Newsletter - January 2024



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



SUSAAN EU-Project

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SUSAAN M18 WORK PROGRESS

The SUSAAN project, initiated in June 2022, is dedicated to the synthesis of innovative Active Nanomaterials (ANMs). Over the initial 18 months, our research partners diligently conducted experiments on various nanomaterials at the laboratory scale. This encompassed inorganic nanoparticles, bio-based nanofibers, bio-active extracts, and composite materials, notably biobased-inorganic and organic–inorganic hybrid nanomaterials and nanocapsules.

At present, the consortium is actively engaged in evaluating the most promising ANMs. This assessment is based on crucial factors such as antimicrobial and antiviral efficacy, toxicity, and eco-toxicity results, in addition to preliminary Life Cycle Assessment (LCA) sustainability indicators. The LCA considers environmental, economic, and social aspects in its evaluation.



Click and watch the video

These activities have paved the way for the subsequent phases of the project. Our focus now shifts towards formulating nanocoatings using selected ANMs. Following this, the integration of nanocoatings into the sustainable design of high-traffic industrial objects—ranging from plastics and metallics to textiles—will be undertaken. Furthermore, our industrial partners will validate the sustainability and technical advantages of these solutions in comparison to existing market alternatives, adhering to the evaluation criteria of the Biocidal Products Regulation (BPR).

The SUSAAN consortium, characterized by outstanding teamwork and unwavering commitment, has actively explored potential synergies with other European-funded projects. This collaborative approach not only strengthens working relationships but also contributes to the advancement of safer and more sustainable antiviral and antibacterial nanocoating solutions.

SUSAAN TECHNOLOGIES

ATMOSPHERIC PLASMA TREATMENT

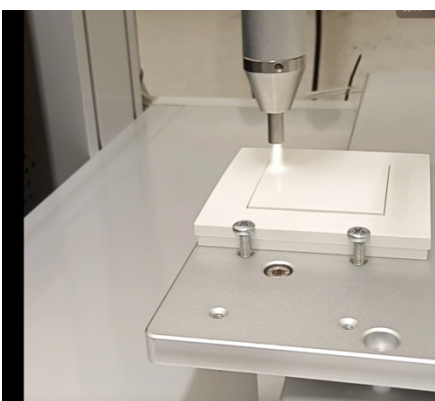
Atmospheric plasma treatment is a processing technique with high efficiency, good repeatability, and stability and easy to operate, suitable for a variety of materials. The technique can be applied for cleaning, surface activation, improving adhesion or etching the surface of the materials. It is widely used in electronics, solar energy, automotive, packaging and printing as well as biomedical industries. The treated surfaces showed smaller Water contact angle (~24-28°) in regard to the untreated surfaces (~65-68°), enabling the better adhesion of the novel SUSAAN nanocoatings.



Figure 1 – Water contact angle of (a) raw specimen, and (b) treated specimen

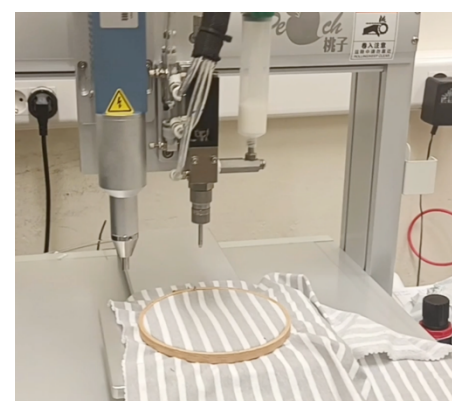
The Atmospheric Plasma technique can be applied in plastics and textiles improving the surface adhesion of the SUSAAN nanocoatings.

Plastic Surfaces



Atmospheric Plasma technology takes the advantages of the low-temperature plasma to interact with the surface of the materials, so that the surface of the processed material is etched or chemically activated by implanting new chemical functional groups.

Textile Surfaces



Click on the titles to watch the Atmospheric Plasma treatment of a plastic and textile surfaces (electrical switch board).

SUSAAN EVENTS PARTICIPATION

SUSAAN has been connecting with other relevant stakeholders

Sharing the project with more than 2500 people

N	Partners involved	Type of event	Title of event	Audience
1	LUREDERRA	Seminar	V. Encuentro de Personas Gestoras y Promotoras de Proyectos Europeos	Industry and Public Sector
2	LUREDERRA	Networking day	Día de la mujer y la niña en la ciencia- Colegio Diocesano Nuestra Señora del Puy	Academia
3	LUREDERRA	Networking day	NEXUS I Where Navarra meets Europe	Industry and Public Sector
4	LUREDERRA	Stand in fair	SINAI I Sciencekaitza	Industry and Public Sector
5	INTERTEK ITALIA SPA	Conference (I)	Turkchem Eurasia	Industry
6	INTERTEK ITALIA SPA	Conference (I)	In-Cosmetics Global	Industry
7	INTERTEK ITALIA SPA	Conference (I)	OMC Med Energy Conference	Industry
8	NCSR/LUREDERRA Zili Sideratou	Conference (I)	20th International Conference on Nanosciences & Nanotechnologies (NN23)	Academic & Industry
9	NCSR/LUREDERRA Fotis Katsaros	Conference (I)	EURONANOFORUM 2023	Academic & Industry
10	PANASONIC	International Fair	FAKUMA International trade fair for plastics processing	Academia and professionals

N	Partners involved	Type of event	Title of event	Audience
11	ECZACIBASI	Trade show	European Coatings Show 2023	Trade Visitors more than 1200 exhibitions
12	YESIM	Symposium	10 th International Fibers and Polymers Research Symposium	Industry and Public Sector
13	YESIM	Symposium	11 th International Fibers and Polymers Research Symposium	Internal events
14	YESIM	Symposium	1 st National Textile Machinery and Systems	Internal events
15	YESIM	Meeting	Event held at Turkey Quality Association (KALDER)	Internal events
16	CEIT Ainara Rodríguez, Diego Gallego, Isabel Ayerdi	Conference (I)	European Materials Research Society 2023 Spring Meeting	Industry
17	CEIT Ainara Rodríguez, Diego Gallego, Isabel Ayerdi	Workshop (N)	13 ^a Reunión Española de Optoelectrónica, OPTOEL'23	Industry
18	ARDITEC, LUREDERRA	Workshop	Exploring potential synergies among sister EU funded projects	Industry

Several abstracts prepared by SUSAAN partners have been accepted in different events and fairs. Very recently, an abstract focusing on environmental (LCA) considerations was accepted in the next BIOKET 2024 event in France.

Concerning sustainability aspects, internal workshops have been organised with partners, with the objective of give meaning and mobilise teams & efforts during the first 18 months.

For more information about SUSAAN Project, please visit the [website](#) or contact us:

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