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SUSAAN overview: SUSustainable Antimicrobial and Antiviral Nanocoating

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Introduction and objective

Infectious diseases pose a significant threat to both human health and the global economy, they account for more than 20% of global mortality and viruses are responsible for about one-third of these deaths. To date, we know of about 200 infectious diseases and about 80% of infectious diseases are transmitted by unclean hands touching contaminated surfaces. SUSAAN project is focused on development of new sustainable antiviral and antimicrobial coatings for textiles and high traffic objects made of plastics and metal, involving textile, bathrooms and switches manufacture industries. Thus, most of the common hand-touch sites and/or objects will be covered and the results will be validated by the end users to ensure the long term impact of the project beyond its execution life-time.

Consortium

A consortium of 13 partners from 7 countries will join forces to ensure the implementation of SUSAAN project. Technological and scientific partners (LUREDERRA, NCSR, IVW, CEIT and ITENE) are experts on main areas of nanoparticles, coatings, pretreatment, biobased nanocapsules and toxicity assessment. Companies involved cover the whole value change based on their core business including coatings production (TECNAN), biobased products (CELABOR), bathrooms manufacturing (ECZACIBASI), home appliances (PANASONIC) and textiles (ALMAXTEX). INTER IT will cover the activities on BPR assessment being VIRHEALTH (the expert on virology) on charge of standardized testing to determine virucidal and antimicrobial activity of the coatings and ARDITEC on charge of sustainability assessment.

Final outcome

The final outcome of SUSAAN project is the validation of the new sustainable antimicrobial/antiviral nanocoating in different final products: high traffic objects (plastic and



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metallic) and textiles. Technical advantages and comparative results to current solutions will be used to present SUSAAAN solutions to potential clients.

Expected impact

SUSAAAN results will have scientific, environmental, economic and social benefits:

- Sustainable synthesis of AM/AV nanocoatings coating with enhanced functionalities (durability, efficiency, low toxicity...)
- Enhance economic benefits through reduction of lost hours of work through illness
- 80% of minimization of the risk of spread of infections, on the creation of a healthier living and working environment and on offering solutions to people with health issues
- Global antimicrobial coating market size is projected to grow at a CAGR of 10,7%.
- New market opportunities in the future, new jobs and impact on the scientific area.
- Boost research, development and innovation in the EU and Provide business opportunities especially for SMEs

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Biography

Job Tchoumtchoua is R&D Project Leader at the Biomass Valorisation Platform of Celabor (Belgium) - He received his PhD in Pharmaceutical Sciences at the University of Athens (Greece). His research is focused on green extraction and purification methodologies; biomass valorisation; and analytical development. He has been involved in the implementation of 8 European Projects at Celabor. He published over 20 scientific papers and 1 book chapter in peer-reviewed journals. He has completed two post doc stays at the Institute of Molecular Chemistry of Reims (France) and at the Faculty of Pharmacy of the University of Picardy Jules-Verne (Amiens, France).