

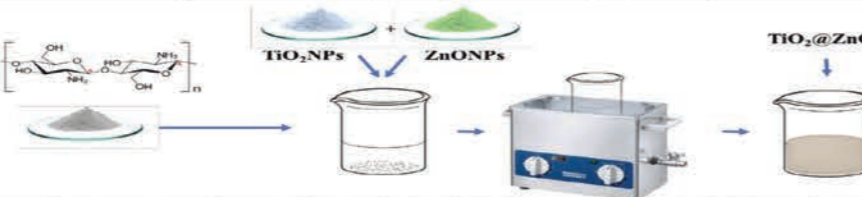
Funding Programme: National Plan for Research, Development and Innovation for the period 2022-2027 (PNCDI IV)/ NUCLEUS Programme PN 23 26 "Multidisciplinary research-development-innovation in the field of textiles and leather in the vanguard of current societal challenges (TEX-PEL -CHALLENGE 2026)
Project title: Advanced functional textile materials for protection and improving the quality of life (Tex4Age)
Contract No.: 6N ⇒ **Project code:** PN 23 26 01 04
Starting date: January 2023 ⇒ **Ending date:** December 2026
Coordinator: National R&D Institute for Textiles and Leather, Bucharest, Romania
Project Objective: Manufacturing functional textile products made through innovative technologies that integrate the Safe-by-Design concept, and intended to improve the quality of life of the elderly.
The project aims to implement integrated solutions for covering textile structures, for conferring functional/multifunctional properties, based on sustainability and ecological design criteria, through:

⇒ Synthesis and functionalization of metallic nanoparticles (NPs) by "green synthesis"

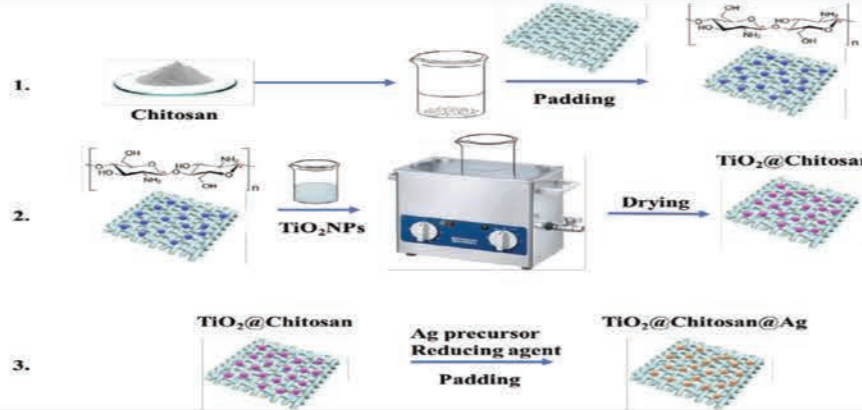


Schematic representation of AgNPs synthesis using aqueous plant extract

⇒ Sustainable synthesis of composite nanomaterials based on metal NPs, metal oxide NPs and cationic polymers (natural/synthetic) biodegradable, with increased effectiveness (>98%) against a wide range of pathogens (bacteria and viruses)

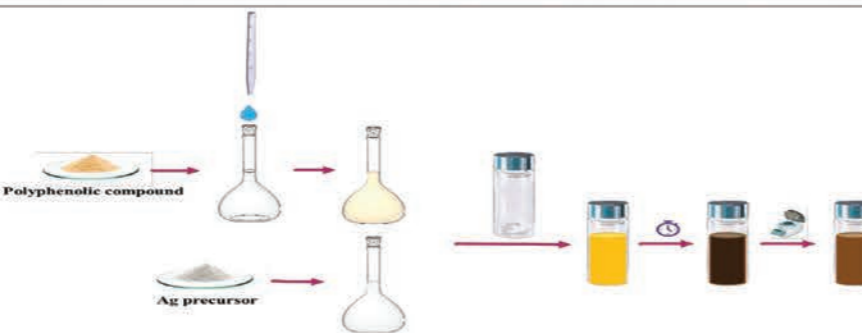


The sequence of stages for producing hybrid composite materials based on TiO₂-N NPs and SiO₂ NPs



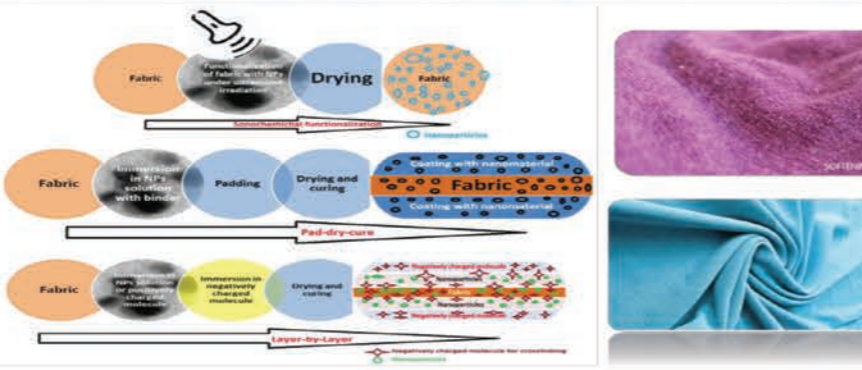
The sequence of stages for producing nanostructured composite materials based on TiO₂ NPs, Ag and chitosan

⇒ Investigating alternative routes of synthetic functional compounds by replacing them with sustainable natural functional agents derived from plants (essential oils, combinations of essential oils, plant extracts)



Manufacturing steps of AgNPs dispersions using polyphenolic compounds

⇒ The use of innovative techniques for textile materials functionalization



⇒ Manufacturing ergonomic clothing products, adapted to the anatomical shapes of the body of the elderly.



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THE TECHNOLOGIC AND BUSINESS INCUBATOR ITA TEXCONF

ITA TEXCONF is an entity in the infrastructure of innovation and technological transfer without legal personality, established within INC-DTP based on HG 406/2003, accredited for the textile – clothing field and re-accredited in 2020, Certificate no. 118/2020, issued by the Ministry of Education and Research



Insights from incubated company
SC Xtreme Equipment SRL

ITA TEXCONF is part of the National Network for Innovation and Technology Transfer ReNITT and acts for the sustainable economic and social development of the textile sector, by ensuring access to technological performance, developing the innovative environment, introducing quality systems and developing human resources.

The incubator is involved in specific actions of collaboration with all 5 existing clusters in the textile field, of which it is part as an active member: Romanian Textile Concept Cluster – RTxC, ASTRICO NE, Traditions Manufacture Future, Transilvania Textile & Fashion Cluster and Fashion Future Cluster.

Services:

- ❖ Services of sustaining textile-clothing SME competitiveness within the competition background of the market economy;
- ❖ Services aiming at creating partnerships and financing drawing in within the projects;
- ❖ Services aiming at the product, equipment, innovation technology promoting in the field of textile-clothing, as part of scientific events (fairs, symposiums, conferences, etc.);
- ❖ Mediating contracts of technology transfer/manufacturing of products, experimental models, prototypes and specific applications for technical textile, personal protective equipment, invasive and non-invasive medical devices, special-purpose items, etc.;
- ❖ Mediating contracts in the field of investigating the textile material and product properties, within the RENAR accredited INC-DTP laboratories.

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