



Spanish scientists develop new graphene-modified tissues effective against coronavirus

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Research news

Researchers from the University of Granada are participating in a project that will make it possible to manufacture facemasks made of 'non-woven' textiles that offer more effective protection against SARS-CoV-2

A consortium of Spanish scientists and companies, in which the University of Granada (UGR) is participating, is working on the development of new efficient prophylactic facemasks to combat the Coronavirus responsible for COVID-19. These masks will be made of non-woven textiles specially modified with graphene and derivative materials.

Researchers at the Condensed Matter Physics Centre (IFIMAC) of the Autonomous University of Madrid (UAM), which leads the project, are working on the development of new technologies to manufacture protective facemasks and, more generally, safer fabrics that help avoid contagion via infectious pathogens and, more specifically, viral particles.

The team aims to develop a new technology for the production of fabrics based on modifying 'non-woven' fabric textiles. The paradigmatic case would be non-woven polypropylene, which is the material used in most of today's facemask filters.

"Our intention is to incorporate two-dimensional materials such as graphene and/or derivatives thereof, such as graphene oxide, which would generate an antiviral barrier specifically effective in the case of SARS-CoV-2," explain the authors of the project. The team includes researchers from the Atmospheric Physics Group of the



UGR's Andalusian Inter-University Institute for Earth System Research (IISTA).

To achieve this, they will use a simple, scalable process, based on a patent developed in their research group, to generate 'graphene inks'. They explain: "Our end-goal is to develop a technology that helps make facemasks more effective and comfortable—that is, prophylactic textiles that are designed to combat the SARS-CoV-2 virus in general, but are adaptable to other viruses."

The project, led by Félix Zamora, Pedro J. de Pablo, and Julio Gómez, is managed by a consortium involving groups from IFIMAC-UAM, the National Centre for Biotechnology (CNB-CSIC), and the UGR. Also involved are three Spanish companies: Nanoinnova Technologies S.L. (manufacturer of graphene and derivatives, providing the project with these materials), Nonwovens Ibérica S.L. (manufacturer of non-woven textile materials, again providing the project with these materials), and Textil Elástico S.L. (specializing in the manufacture of orthopaedic elastic products), which will produce the facemasks themselves.

Image caption:



The UGR researchers who participated in this project.

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