

Nanotechnology used in sunscreens

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The cosmetic industry is one of the most competitive in the world, that is why is noteworthy that a Mexican development is part of one of the most pervasive innovations in recent years. It is the application of

nanoparticles of titanium dioxide (TiO₂) as sunscreens.

The contribution is the result of [research and development](#) by "Nanomateriales", a Mexican enterprise in the north of the country, led by scientist Joel Antonio Gutierrez, who said that the products are already sold in Mexico, USA and South America.

The Mexican firm is responsible for developing nanotechnology solutions for various sectors, meaning that their research does not focus on a single article, but in applications that give added value to different products, and thus provide customers with a more competitive and diverse market.

For example, the company developed a cosmetic sunscreen based in titanium dioxide nanoparticles, which can reduce the effects of UVA/UVB rays, related to skin deterioration.

The innovation for the titanium dioxide product was to develop a technique to disperse the particles (five to 10 nanometers in size) to avoid agglomeration.



A high-tech dispersion physicochemical process was designed, which will ensure that the nanoparticles remain stable in the formulation of the final product. The advantage in the cosmetic formula is that using [titanium dioxide](#) nanoparticles increases the photo protective efficacy, since it has been demonstrated that the lower the particle size the better the protective UV efficiency.

In addition to the [cosmetic industry](#), the company seeks to implement the [nanoparticles](#) on other products, such as waterproofing paints, coatings and plastics, because it improves resistance to environmental exposure. However, so far it has only been marketed in sunscreens.

For Antonio Gutiérrez, the commitment to nanotechnology is because it represents over 50 billion dollars in the worldwide market, therefore he expects "Nanomateriales" to continue with developments for various sectors including aerospace and information technology where applications for spacecraft and processors are being prepared.



The Mexican company has four years in operation, despite his young age it has managed to introduce its products in international markets, such as USA, Canada and South America. However, the director tells us that his success has not been easy. "This industry, like few others, requires highly skilled and specific technology for its production," he says.

Provided by Investigación y Desarrollo

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