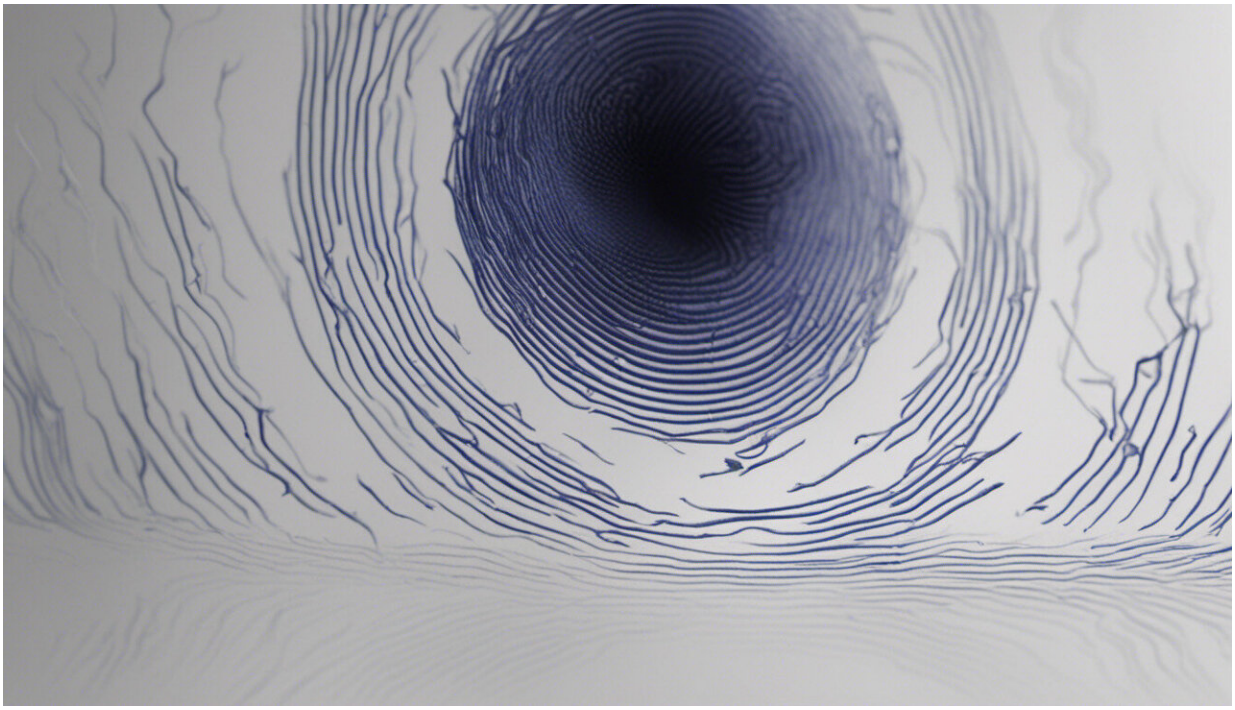
# Improving nanosafety through research

February 14 2014



Credit: AI-generated image (disclaimer)

Nanotechnology is expected to be one of the vital technological drivers for transforming the EU into a true Innovation Union. From improving cosmetics and fabrics to helping to preserve food for longer, the potential for nano-enabled products is huge.

However, along with these welcome benefits, engineered nanomaterials (ENM) and nanotechnology applications also bring concerns about their

possible effects on human health and safety, and on the environment. In the past, we saw a lack of systematic studies on hazards of or exposure to ENM but in recent years the European research community has been working to address this. About 50 FP6 and FP7 projects progressing both nanotechnology and its safety management, and representing a total investment of 137 million, are either completed or running.

NANOFORCE, one of these valuable projects which focuses in particular on nanotechnology in the chemical industry, recently announced testing achievements from labs in Italy, Slovenia and Poland. These labs were all investigating the toxicity of the nanoparticles in various products.

Veneto Nanotech, based in Italy, explored the risk factors associated to nanoparticles found in many antibacterial products. The testing showed that when a user was exposed when varnishing, the risk was very low, especially when using a brush. However if the powder was released indoors from a cleaning product, the risk was higher. Meanwhile, colleagues at the University of Nova Gorica in Slovenia explored the toxicity of nanoparticles in water leached from paints. Results here showed that washing/rain released far fewer nanoparticles from paint than immersion. The Polish partners at the Institute of High Pressure Physics (IHPP, Poland) simultaneously investigated the toxicity of synthesised ZnO nanopowder. Through their experiments, the team observed in fact that simple tests where nanoparticles are added to a medium are not suitable for making conclusions about nanoparticles toxicity.

With the aim of linking scientific knowledge and business in the Central Europe space, NANOFORCE is taking a unique approach by directly interacting with industry, specifically chemical enterprises. A representative of NANOFORCE noted, 'Our overall aim is to better integrate science, industry, finance, management and regulation to let

nanotechnologies to generate their benefits for the present and the future generations in Europe.'

And NANOFORCE is just one part of the European nanosafety movement. It is a member of the EU Nanosafety Cluster which was established in order to ensure that ongoing nanosafety research, like that of the NANOFORCE members, is as coordinated and collaborative as possible. The Cluster, which incorporates FP6 and FP7 projects, aims to maximise the synergies between projects addressing all aspects of nanosafety including toxicology, ecotoxicology, exposure assessment, mechanisms of interaction, risk assessment and standardisation.

**More information:** For more information, please visit: NANOFORCE www.nanoforceproject.eu/

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