

# The new EU-funded SbD4Nano project set to develop an innovative e-infrastructure for Safe-by-Design Nanomanufacturing

SbD4Nano (to be amended from NanoUptake) stands for Computing Infrastructure for the Definition, Performance Testing and Implementation of Safe-by-Design Approaches in Nanotechnology Supply Chains.

The first General Assembly of the project took place on May 12th in a virtual platform to gather together consortium partners across the globe in a collaborative discussion around the development of the innovative e-infrastructure for Safe-by-Design (SbD) nanomanufacturing.

## Project summary & objectives:

A major challenge for the global nanotechnology sector is the development of safe and functional engineered nanomaterials (ENMs) and nano-enabled products (NEPs). In this context, the application of the SbD concept has been adopted recently by the nanosafety community as a means to dampen human health and environmental risks, applying preventive safety measures during the design stage of a facility, process, material or product. However, and despite its importance, SbD prescriptions are still in their infancy, and are hampered among other things by the lack of comprehensive data about the performance, hazard and release potential of the great variety of NEPs in use.



SbD4Nano addresses that problem by creating a comprehensive new e-infrastructure to foster dialogue and collaboration between all actors in the supply chain for a knowledge-driven definition of SbD setups that optimize hazard, technical performance and economic costs.



This will be achieved by developing:

- validated rapid hazard profiling module, coupled to a new exposure-driven modelling framework aimed to reduce material toxicity.
- cost-benefit analysis algorithms designed to find the optimal solution for safety and industrially convenient technical performance of the safe-born material.
- A new software interface where product information can be exchanged between actors of the nanotechnology value chain fostering collaboration between regulators, researchers and industry.

Project Coordinator, Carlos Fito explains the expected impact of SbD4Nano:

*“SbD4nano is expected to make a significant impact for the safe manufacturing and use of ENMs. In specific, besides tackling safety from the early stage of the product development, the project agenda will contribute to the development of quality workplaces that ensure maximum technical and economic performance in line with acceptable risk levels”.*

#### **Project Facts:**

**Project duration:** 48 months, starting in April 2020

**Total budget:** 6 Million EUR

**Consortium:** 23 beneficiaries spanning Europe and the USA, including representatives from academia, industry, policy makers and regulators.

**Coordinator:** Instituto Tecnológico del Embalaje, Transporte y Logística (Valencia, Spain)

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