

Nanotechnology at the Basque Research and Technology Alliance (BRTA)

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BRTA has identified NANOTECHNOLOGY as a key enabling technology for the development of new products, mainly advanced materials, across a wide range of industrial sectors (e.g. Manufacturing, Health, Energy, Construction, Transport, etc.).

In this endeavor, the first stage is to generate the knowledge in nanoscience and nanotechnology, which can lead to high added value materials and products, ensuring economic impact and job creation coming from the resulting nanotechnology-based industrial applications; while taking into account issues like sustainability and circular economy as well as the environmental, health and safety (EHS) impacts of nanotechnology.

R&D activities at BRTA, from lab to pilot scale, span the industrial value chain from nanomaterials (e.g. graphene, nanocellulose, nanoparticles, nanofibers, etc.) all the way to the final nanotechnology-based products, which can either be nanostructured materials or nanomaterial-containing (3D bulk or 2D coating) materials or composites of different chemical nature, i.e. metallic, ceramic, polymeric, etc. State-of-the-art characterization for Nanotechnology is available as well as expertise in Modelling. The use of artificial intelligence in the design of the novel nanotechnology-enabled advanced materials is an emerging field which is also receiving special attention.