

Advanced Microscopy Services for Industrial Applications

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Abstract

The Invention of Scanning Tunnel Microscope in 1981 was fundamental for the emergence of nanotechnology. Nowadays nanomaterials are in the market and their development, production process and quality control also requires the right characterization tools. The necessary facilities usually represent very high cost of investment and maintenance and require highly qualified and experienced operators. Therefore it is often a good alternative for companies to use the services of advanced analysis offered by some laboratories.

Several key tools for the characterization of nanomaterials are presented including Electron and Scanning Probe Microscopies and selected spectroscopic techniques. In order to illustrate them, selected examples taken from the Laboratory of Advanced Microscopies (LMA) will be shown. We will see how these tools can give us a deep inside in the characterization of samples as diverse as nanoparticles, polymeric nanocomposites, thin films, coatings, graphene, alloys, membranes or functionalized materials.

LMA represents a nice example of a laboratory in which top level instruments and the expertise of the scientists and technical staff involved are offered to researchers from other public and private research centers and also to professionals from industrial sectors. The singularity of this infrastructure in Nanofabrication and Advanced Microscopy and the vocation of offering it to the scientific and technological community has been recently attested by the Spanish Government ICTS distinction (Spanish acronym from: Instalación Científico Técnica Singular).