

The Bright Future of Nanoscience and Synchrotron Radiation

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The success of nanoscience and technology is mainly based on a comprehension, control and design of nanostructures and nanomaterials. These penetrate all fields of functional materials from biocompatible implants to new electronic devices. The rapid development of the availability of synchrotron radiation (SR) throughout Europe and in interaction with the very active user community, SR has become a key tool in material science, chemistry and biology over the last decade. With the natural evolution that nanoscience and technology have brought to those fields the synchrotron beamlines and techniques have evolved in particular with adapted instruments put into operation during the first phase of the ESRF upgrade (2009-2015).

The further improvement of x-ray technologies and in particular the boost in brilliance that the European Synchrotron will experience during its conversion to the Extremely Bright Source (EBS) will dramatically enhance the importance of this tool for the characterization and imaging of the nanoworld.