

Open Infrastructure for Advanced TOMography and Microscopies

ATOM

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ATOM is a forthcoming open research infrastructure for materials and devices characterization, using advanced tomography and microscopy techniques, at and beyond the state-of-the-art.

The presence in the region Lazio of a cluster of scientific instrumentation operating at the nanoscale is one of the fundamental requirements for fast technological transfer in the field of nanotechnology. The ATOM project, jointly supported by Sapienza University of Rome (Department of Basic and Applied Sciences for Engineering of Rome Sapienza University, Department of Chemistry and CNIS - Research Center for Nanotechnologies applied to Engineering) and by the CNR Institute of Nanotechnology, aims at carrying out cutting-edge research in the nanotechnology sector in the region Lazio, as well as in Italy and internationally.

ATOM is created with to support refined investigation of the 3D structure of materials, devices, components and biological tissues, from the mesoscopic to the nanoscopic scale, through functional and dynamic nano-characterization.

The planned instrumentation acquisition will provide users with innovative instrumental platforms with applications to the bio-medical, micro- and nano-electronics, cultural heritage and additive manufacturing sectors.

ATOM is conceived as a link between research and business, in virtuous synergy between public and private, to stimulate research and, at the same time, to develop the market linked to its technological applications.

The public sector, which will host the scientific instrumentation and will provide the staff for management and research development, aims to acquire state-of-the-art equipment to enhance nanotechnology skills and international competitiveness.

The private sector, which will guarantee the use of the equipment and, hence, the financial sustainability of ATOM, needs to position itself in the making of products in activity sectors of higher added value. It, thus, requires access to advanced characterization equipment, both to speed up production and to verify the quality of the products. The network that these research institutions intend to set up around the ATOM infrastructure will be joined as strategic partners by some of the most significant companies in the sector operating in the region, such as Leonardo Finmeccanica, ASSING, Rina-CSM, CRISEL and ZEISS.

Regional, national and international companies and research institutions will have access to the services provided by ATOM through an online reservation platform, according to a specific Access Regulation for the Infrastructure.

We will illustrate the present development stage of the ATOM infrastructure and will show a few possible applications of the combined instrumental power of the forthcoming site at Sapienza University.