STAR: a research infrastructure as the center of the technological pole at Unical

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The research infrastructure STAR, Southern Europe Thomson Backscattering Source for Applied Research, was implemented through the project MaTeRiA, Materials and Technologies for Applied Research, PONa3_00370, in the framework of the 2007-2013 "Research and Competitiveness" PON programme.
It has been selected among the 18 national strategic new Research Infrastructures by the PNR 2014-2020. Its upgrade has been founded a few months ago in the framework of the "Call for Proposals for the awarding of grants aimed to enhance research infrastructures", pursuant to Action II.1 of the National Operative Programme – Research and Innovation 2014-2020.
STAR is an innovative X-ray source allowing the implementation of investigation techniques that are normally a prerogative of larger machines (synchrotrons), but at costs and dimensions lower by at least one order of magnitude. Its mission is the cutting-edge research in the fields of the advanced materials science and technology.
X-rays are used for the acquisition of 3D tomographic images with a resolution of up to a few microns. Main application fields are:
- Advanced and smart materials
- Hi-res biomedical imaging
- Cultural heritage

STAR will provide two beamlines with x-rays photons up to 350 keV, i.e. about ten times stronger than x-rays photons produces by synchrotrons. It is conceived as a widely-available "user facility" and it is the core of a technological centre located in the campus of University of Calabria in Rende (CS, Italy), open to all scientists from Europe, but also from Mediterranean Countries and the rest of the World.

References

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