Sirius: The New Brazilian Synchrotron Light Source

Antonio Jose Roque da Silva
Brazilian Synchrotron Light Laboratory

The use of synchrotron radiation by a great variety of fields has increased steadily worldwide. This, to a large extent, is a result of the availability of the much brighter third-generation light sources, which allowed the development of new experimental techniques. Recently, new advances in accelerator technology are opening up the possibility of even brighter sources, which are being named fourth-generation light sources. Brazil gave an important contribution to science in Latin America through the development of the necessary technology and the construction of the first synchrotron in the southern hemisphere, still the only one in Latin America. The Laboratório Nacional de Luz Síncrotron - LNLS, operates this installation as an open facility since 1997, benefiting more than one thousand researchers yearly. Despite all this success, the current Brazilian light source is a second-generation machine, with relatively low electron energy, high emittance and few straight sections for insertion devices. Sirius, the new Brazilian synchrotron light source being constructed by LNLS, will be one of the first fourth-generation machines in the world. Its first light is expected by 2018 and it is being planned to be a state of the art light source, providing cutting edge research tools that are nonexistent today in Brazil. In this talk an overview of the main characteristics, potentialities and status of the project will be provided.

Presentation given on behalf of the LNLS team.