

Present status and future perspectives for astrochemistry and astrobiology at LNLS

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At this meeting, we intend to discuss the use of synchrotron light for experiments in astrochemistry and astrobiology, from the UV to hard X-rays. Currently, at LNLS in Campinas, the only synchrotron in Latin America, we have a 1.37 GeV machine, reaching its lowest energy with the TGM (Toroidal Grating Monochromator) beamline, a UV – VUV beamline that works on the energy range of 3 to 330 eV. At mid 2019, the new Brazilian light source, Sirius, should be starting to operate. A 4th generation, 3 GeV machine, with high brilliance and very low emittance, this will be one of the most advanced of its class in the world, opening new possibilities for time-resolved experiments, with high spatial and spectral resolutions, in a large energy range. Sirius is one of the biggest scientific projects of Brazil and it will operate as a multiuser facility for the scientific and industrial. For its initial phase, 5 beamlines are already in advanced stage of development, but the futures beamlines are still open for discussion with the community.

At the energy range covered by the TGM beamline, studies of ultraviolet absorption, integrated luminescence, fluorescence, mass spectrometry, irradiation and dosimetry are already commonly performed and are being constantly improved. It is our objective to present our facilities and discuss the new machine potentialities with the scientific community, in order to ensure that the current and future needs for experiments in astrochemistry and astrobiology, as well as on fundamental atomic and molecular physics, are fulfilled on the best possible way.