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Updates on the optical design and initial characterization activity of the MOST beamline in view of Elettra 2.0

We report on the latest developments regarding the design and initial operations of the Molecular and Optical Science Technology beamline (MOST), the new beamline specifically devoted to serve the atomic and molecular physics community at Elettra 2.0.

Two new insertion devices (IDs) have recently been installed, adopting an in-line configuration; one covers the low-to-intermediate photon energy range (8-300 eV), a second one the intermediate-to-high photon energy range (80-3000 eV). Both undulators provide full polarization control of the emitted radiation.

The optical layout will be presented, as well as future prospects for the beamline. A central main line will allow for the intermediate-to-high energy range, and it will be complemented by two branches, one for low-energy equipped with a normal incidence monochromator (NIM, currently at the Circular Polarization beamline of Elettra) and a second for the intermediate XUV range equipped with the spherical grating monochromator (SGM, currently at the GasPhase beamline at Elettra). The main line will use five optical elements implementing a spherical mirror and a novel variable line spacing grating monochromator, to deliver a beam parallel to the orbital plane.

We are currently carrying out preliminary measurement of the performances of the two new undulators exploiting the old CiPo beamline layout. Later this year we plan to undertake polarimetric characterisation of the radiation, too.

Journal of Synchrotron Radiation Special Issue: will you submit your contribution?

yes

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