Developments of ARPES Studies at HiSOR BL-1: Towards HiSOR-II Projects II

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The Hiroshima Institute for Synchrotron Radiation Science (HiSOR) is the synchrotron radiation facility established at Hiroshima University. A compact 700 MeV electron-storage ring produces synchrotron radiation in the ultraviolet (VUV) and soft x-ray range. Tunable photon energy in this range is indispensable and valuable for studying the fine electronic structures of novel materials such as superconductors, topological insulators, and Weyl semimetals, etc., employing high-resolution angle-resolved photoemission spectroscopy (APRES).

Recently, to perform surface mapping in synchrotron radiation, based on the research and developments, we have reduced the beam size of the synchrotron radiation by using a focusing mirror, and to perform detailed measurements by improving the accuracy of the manipulator system. In BL-1 (high-resolution ARPES beamline), the beam size of the synchrotron radiation is reduced by order of magnitude (beam size: ~70-100 μm). In addition, we have redesigned the sample holder for common use following the new installation of analyzers.

In this poster, we will show the details of recent developments in HiSOR beamline (BL-1) towards the HiSOR-II projects.