

Indian Beamline at Photon Factory

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High brilliance, polarization, coherence and energy tunability of x-ray synchrotron sources made it almost inevitable for the investigation of structural, chemical and magnetic properties of the nanomaterials. The Indian beamline at Photon Factory (BL18B) is using the existing beamline optics and setting up various instruments to make it multipurpose beamline for materials research. With its full capacity this beamline will be covering five different areas of present days x-ray synchrotron research as: (a) Powder diffraction from nanocrystals at various sample environments like high pressure, wide range of temperature and different chemical environments. (b) Diffraction from single crystals and epitaxial multilayers. (c) X-ray reflectivity and diffuse scattering from solid and liquid surfaces or interfaces. (d) In-situ growth and structural characterization of thin films and nanostructures using dedicated UHV system and (e) Small angle x-ray scattering (SAXS) from bulk materials and interfaces. Presently, we are running in limited capacity and can do experiments like powder diffraction in ambient condition, single crystal diffraction from epitaxial multilayers and nanocrystals, x-ray reflectivity and diffuse scattering from solid surfaces at ambient condition. We are procuring the instruments to avail all the experimental facilities as mentioned before and will be commissioned soon for general user.