

Development of X-ray imaging beamline at INDUS-2 synchrotron source, India

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Third generation x-ray sources viz. Synchrotron Radiation provide coherent x-ray source with added advantage of tunability of energy, high x-ray flux etc. With availability of Indus-2 synchrotron source, operating at 2.5Gev energy and current of 300mA, we are setting up an imaging beamline for carrying out both absorption and phase sensitive imaging applications. This facility will be used for material science research, medical science research, and non-destructive characterization of advanced materials. The experimental techniques available at the beamline include propagation and analyzer based phase imaging, laminography, tomography, dual energy imaging, real-time imaging etc.

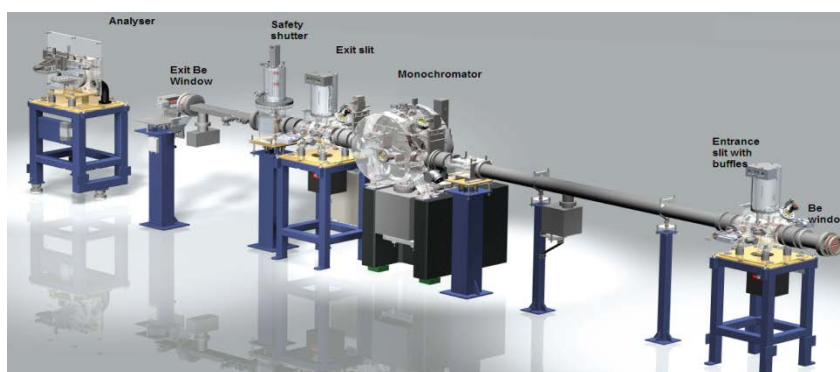


Figure 1 Schematic of Imaging beamline at INDUS-2, India

The beam-line has monochromatic as well as white beam mode of operation. In monochromatic mode the energy range covered is 6-35keV while in white beam mode energy upto 50keV is available. The maximum beam-dimension in the experimental station is 150mm X 10mm and photon flux is 10^8 ph/s in mono-chromatic mode while it is 10^{16} ph/s in white-beam mode. In this presentation, we will discuss about design, development, and current status of the beamline along with its future plans.