

# **Biomedical Research using Synchrotron Radiation**

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A synchrotron biomedical research facility is nearing completion at the Canadian Light Source in Saskatoon, Saskatchewan. The Biomedical Imaging and Therapy (BMIT) facility will provide high intensity, high x-ray energy light for a wide variety of imaging and therapy programs. This facility is now in the construction phase with some initial operations which began December 2008.

The BMIT facility will have two beamline complexes; an insertion device source beamline at which the bulk of the imaging and therapy research on humans, animals, and plants will be carried out, and an ancillary bend magnet source beamline which will serve as a proof-of-principle facility and research tool for new methods of imaging and therapy. The bend magnet beamline is now being used for first experiments using conventional imaging and diffraction enhanced imaging).

Several imaging methods (absorption-edge subtraction imaging, diffraction enhanced imaging, phase contrast imaging, and absorption imaging) in projection and computed tomography modes as well as monochromatic beam and filtered white beam therapy methods will be available.

The layout of the facility will be presented, the beamline status along with examples of the types of research that can be carried out at BMIT with emphasis on new imaging methods and applications being developed. Examples of results from the bend magnet beamline will also be presented.

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