

Neutron scattering and imaging methods – overview methods and possibilities

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Neutron scattering is an important method for characterization of materials. Neutrons have several unique properties: (i) the scattering from light elements is similar to heavy elements in the periodic table; (ii) neutrons have a magnetic moment and unique for characterization of magnetic materials; (iii) neutrons penetrate far into many materials, and thus unique to study bulk properties and easy to use complex sample environments; and (iv) the scattering between neighboring elements and isotopes of same element can be very big. This presentation will cover different advantages of neutron scattering methods, different types of neutron-based instrumentation and examples of applications.

IFE is running a reactor, JEEP II, that is used for neutron scattering. The present and coming instrumentation in our upgrade program, McNeutron – Norwegian Center for Neutron Research (www.ncneutron.no), will be presented.

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