

Small Angle Neutron Scattering Instruments at HANARO

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In major neutron research facilities, SANS has been one of the most popular cold neutron instruments, and one or more SANS instruments are usually installed there. Given the increasing importance of the SANS instrument in Korea, 9 meter SANS instrument was constructed and commissioned at the HANARO reactor hall in KAERI(Korea Atomic Energy Research Institute) even before the installation of the cold neutron source. In 2003, the HANARO cold neutron research facility project was launched thereby installing three SANS instruments, which are two pinhole type SANS instruments(40 meter and 18 meter) and an ultra small angle neutron scattering(USANS, which was developed by the Korea Institute of Science and Technology(KIST)) using a perfect crystal at the cold neutron research facility of the HANARO reactor. The 40 m SANS and KIST-USANS instruments are newly constructed ones[1]. The 18 m SANS instrument was relocated from the reactor hall, and the length of the instrument was extended from 9 m to 18 m as a result of the HANARO cold neutron research facility project. The three SANS instruments at HANARO are specialized to fit for their respective research areas and measuring Q range. In this presentation, the characteristics of the three SANS instruments at HANARO are introduced.

[1] Y.S. Han, S.M. Choi, T.H. Kim, C.H. Lee, S.J. Cho and S.B. Seong, Nuclear Instrument and Method in Physics Research A, 721, 17-20 (2013)