Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Design of Ultra Small Angle Neutron Scattering (KIST-USANS) at HANARO Cold Neutron Guide, CG4B[1] MAN-HO KIM, Korea Institute of Science and Technology — The ultra small angle neutron scattering instrument can measure the lower limit of scattering vector to near Q $\sim$ 2.0x10^{-5} Å^{-1} while the upper limit can reach to an intermediate scattering vector Q $\sim 10^{-2}$ Å^{-1} of a typical small angle neutron scattering (SANS) depending on the contrast of sample. USANS is useful when measuring objects that are micron to submicron in size while SANS is useful when measuring objects that are micron to nano in size. When both USANS and SANS were used together, we could measure sizes from micron to nano scale, which is useful when studying the hierarchical structures in the wide scale of Q and total cross-section, dΣ/dΩ(Q). Recently, KIST has developed the USANS (so called KIST-USANS) at HANARO cold neutron guide hall of KAERI. We will present the instrument design, performance, future plan, and some examples of measurements that cover approximately 11 orders of magnitude in the dΣ/dΩ(Q) and 4 orders in the Q.

[1]This work was partially supported by the KIST (2v02632) and the National Research Foundation of Korea(NRF) grant funded by the Korea government(MEST) (No. 2012M2B2A4030220)

Man-Ho Kim
Korea Institute of Science and Technology

Date submitted: 29 Nov 2012 Electronic form version 1.4