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the Multi-Slit Very Small Angle Neutron Scattering Instrument in China Spallation Neutron Source

A Multi-Slit Very Small Angle Neutron Scattering (MS-VSANS) has just been accepted at beam line 14# in China Spallation Neutron Source (CSNS). MS-VSANS aims to achieve the best signal-to-noise ratio. It has three modes, i.e., SANS, VSANS and polarized neutron, respectively. With three 1*1 m2 He3 detectors at 1 m, 4m and 12 m, and one 21*21 cm2 high resolution detector at 12.75 m sample-to-detector distances (SDD), it can cover the overall scattering vector range (q) from 0.00028 to 1.4 Å-1. It is the first VSANS based on a spallation source in the world, and is a powerful tool for multi-scale structure calibrations in chemistry, biology, material science and condensed matter physics. Here, a detailed review is given on the development, principles and application of the MS-VSANS.

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