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Study of the neutron absorbers materials coated on the back side of analyzer silicon crystal wafer

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The silicon crystal analyzer is an important spectroscopic device in a high energy resolution neutron inelastic scattering backscattering spectrometer. Specifications of this spectroscopic device is thought to determine energy resolution and background.

In order to achieve a low background spectrum without degradation of the energy resolution, it was developed new crystal analyzer which was coated by thin film of neutron absorbers on the back side of Si wafer, and used it for the crystal analyzer for a new backscattering spectrometer.

In the presentation, it will be shown that the advantages and disadvantages of the coating methods that has been considered during the development. Then, it will be also discussed the performance of spectrometer which is constructed based on the new developed coating method.

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