

## High resolution von Hamos spectrometer for low energy x-rays spectroscopy at CRYRING

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The structure of the few electrons heavy ions and the dynamics of the collisions of the ion with atoms can be precisely investigated by measurement of the radiation spectrum emitted in the electron-ion interaction. Detection of the radiation spectrum can be performed using conventional semiconductor detectors or high-resolution crystal spectrometers. However, as shown by the latest experimental results, very often only application of the crystal spectrometers allows to obtain the accuracy required to study many subtle effects such as relativistic effects and the higher-order QED effects.

Here we will report on the development of high-resolution von Hamos type crystal spectrometer dedicated for low-energy x-rays measurement at CRYRING. The construction details and the main factors influencing the energy resolution and the efficiency of the spectrometer, such as: a crystal radius of curvature, a crystal size, a source size, and the spatial resolution of a detector will be discussed.

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