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A High-Resolution RIXS Spectrometer Using an Energy-Compensation Principle

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Resonant inelastic resonant soft x-ray scattering (RIXS) is an effective spectroscopic method for unraveling electronic structures of solids, because of recent technological advances in synchrotron radiation sources and beamlines. NSRRC has designed and constructed an experimental setup of RIXS in the soft x-ray regime. Ray-tracing results show that the efficiency of a RIXS setup with an active grating monochromator (AGM) and an active grating spectrometer (AGS) is higher than that of a conventional design by nearly two orders of magnitude, while a high spectral resolution is maintained. Our commissioning results show that the total energy resolution of RIXS system is ~ 140 meV at the energy of 930 eV. Here we will present the design concept and commissioning results of RIXS on transition-metal oxides such as NiO, La₂CuO₄ and 1D spin systems with the new AGM-AGS RIXS setup.

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Talk

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RIXS

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