SCRIT electron scattering facility

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Electron scattering is the most powerful and reliable tool to investigate the nuclear structure because this reaction has the great advantage that the electron is structureless particle and its interaction is well described by the quantum electrodynamics. As is well known, the charge density distributions of many stable nuclei were determined by elastic electron scattering. Recently, many efforts for studies of unstable nuclei have been made, and the precise information of the structure of unstabe nuclei have been strongly desired. However, due to the difficulty of preparing a short-lived unstable nuclear target, there is no electron scattering on unstable nuclei with a few important exceptions, such as on ^{3}H, ^{14}C and so on. Under these circumstances, we have established a completely new target-forming technique, namely SCRIT (Self-Confining Radioactive isotope Ion Target) which makes electron scattering on unstable nuclei possible. A Dedicated electron scattering facility at RIKEN consists of an electron accelerator with the SCRIT system, an ERIS (Electron-beam-driven RI separator for SCRIT), and a WiSES (Window-frame Spectrometer for Electron Scattering). Feasibility test of the SCRIT and ERIS system have been successfully carried out using the stable nuclei, and more than 10^{26} [cm^{-2}s^{-1}] luminosity was already achieved. Furthermore, ^{132}Sn, which is one of the important target at the beginning of this project, was also successfully separated in the ERIS. The WiSES with momentum resolution of $\Delta p/p \sim 10^{-3}$ consisting of the wide acceptance dipole magnet, two set of drift chambers together with trigger scintillation hodoscope is under construction. Electron scattering on unstable nuclei will start within a year. In this talk, the introduction of our project and the progress of the preparation status will be presented.