

## Measurement of Neutron Capture Cross Section of $^{99}\text{Tc}$ Between 0.007 eV and 47 keV

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### Abstract

The neutron capture cross section of  $^{99}\text{Tc}$  has been measured relative to the  $^{10}\text{B}(n,\alpha)$  standard cross section by the neutron time-of-flight (TOF) method in the energy range of 0.007 eV to 47 keV using a 46 MeV electron linear accelerator (linac) at the Research Reactor Institute, Kyoto University (KURRI). In order to experimentally prove the result obtained, the supplementary cross section measurement has been made from 0.3 eV to 1 keV using the Kyoto University Lead slowing-down Spectrometer (KULS) coupling to the linac. The relative measurement by the TOF method has been normalized to the reference value (20.01 b) at 0.0253 eV and the KULS measurement to that by the TOF method.

The existing experimental data and the evaluated capture cross sections in ENDF/B-VI, JENDL-3.2, and JEF-2.2 have been compared with the current measurements by the linac TOF and the KULS experiments. The energy dependency of the KULS data is close to that of the TOF data which are energy-broadened by the resolution function of the KULS.