

Cross sections for inelastic scattering of neutrons on ^{14}N using the GAINS spectrometer

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The inelastic scattering of neutrons on ^{14}N was investigated using the $(n,n'\gamma)$ technique. The γ -production cross sections were measured at the GELINA (Geel Electron Linear Accelerator) neutron source of European Commission – Joint Research Centre. The radiation of interest was detected using the GAINS (Gamma Array for Inelastic Neutron Scattering) spectrometer, located on flight path 3, 100-m measurement cabin. The incident neutron fluence rate was monitored by a ^{235}U fission chamber. Making use of the excellent neutron energy resolution of GELINA, we are able to provide state-of-art γ -production cross sections up to 20 MeV incident neutron energy. Using these primary-extracted quantities and information about the level scheme of the target nucleus, we can determine level and total inelastic cross sections. Preliminary results for the 2312.5 keV and 1635.2 keV transitions will be presented and compared with previously reported data for this isotope.

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