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Photodisintegration Cross Section Measurements for ¹⁴²Nd and ¹⁵⁰Nd and Low-energy E1 γ -ray Strength Functions C.T. ANGELL, UNC/TUNL, H. UTSUNOMIYA, S. GOKO, A. MAKINAGA, T. KAIHORI, Konan U., H. TOYOKAWA, AIST, Y.W. LUI, Texas A&M — The photo-neutron disintegration cross sections were measured near threshold for ¹⁴²Nd, and, for the first time, ¹⁵⁰Nd. The measurements were made using the monoenergetic γ -ray beam at the AIST TERAS facility in Tsukuba, Japan. The γ -ray beam was produced via laser inverse-Compton scattering. The neutrons were detected using a composite detector consisting of ³He proportional counters embedded in a polyethylene block. The technique and facility will be overviewed, highlighting the advantages of a monoenergetic γ -ray beam to absolute cross section measurements. The results will be compared to theoretical calculations using the Quasi-particle Random Phase Approximation (QRPA). Finally, the neutron number dependence of the low-energy E1 γ -ray strength function will be discussed.

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