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Neutron captures in the stellar slow and rapid process regimes probed in the laboratory

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Neutron capture experiments in the laboratory help us understanding the stellar production of heavy elements in nature. Measurements of capture cross sections in the stellar slow (s-) process energy regime were measured for neutrons produced by the ${}^7\text{Li}(p,n){}^7\text{Be}$ reaction with the high-intensity Liquid-Lithium Target (LiLiT) at the Soreq Applied Research Accelerator Facility (SARAF, Israel). The NIF (National Ignition Facility) at Lawrence Livermore National Laboratory (USA) produces a neutron field with a density well into that of the rapid (r-) process regime by imploding a DT-filled capsule with high-power lasers. First experiments performed recently will be described.

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