The National Ignition facility is capable of creating an environment that is so hot and dense that it mimics the conditions at the heart of a star. However, the energy required is so great that it can only be sustained for a few nano-seconds. This presents a great challenge for measuring reactions under these conditions. One effective method is the activation technique, which creates radioactive products that last for minutes or days.

One such reaction is $^{10}\text{B}(\alpha,n)^{13}\text{N}$, where the $\alpha$-particles are generated through the $d(t,n)\alpha$ reaction (so called alpha-boot-strapping). However, the cross section for this reaction has not been well studied. New measurements made at the NSL characterized the $^{10}\text{B}(\alpha,n_0)^{13}\text{N}$ reaction for the first time over the applicable energy range and resolved inconsistencies with older measurements.