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Light yield of an undoped CsI crystal at 77 K

The NaI/CsI(Tl) crystals are widely used in experiments to search for dark matter and coherent elastic neutrino-nucleus scattering thanks to their high scintillation light yields (~ 50 photons/keV) and relatively low costs. An even higher light yield of NaI/CsI crystals will lead to a lower energy threshold and better energy resolution. It was observed that the light yields of undoped NaI/CsI crystals increase rapidly when temperature goes down and reach the highest point around liquid nitrogen temperature. The light yield of an undoped ~ 1 kg CsI crystal was studied at 77 K.

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