

Study of Li_2MoO_4 and $\text{Na}_2\text{Mo}_2\text{O}_7$ crystals for 100Mo neutrinoless double beta decay search with cryogenic bolometers:

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The novel molybdate crystals, Li_2MoO_4 (LMO) and $\text{Na}_2\text{Mo}_2\text{O}_7$ (NMO), are popular used as absorbers in cryogenic phonon scintillating bolometers for 100Mo neutrinoless double beta decay search. The low temperature properties of LMO and NMO, including scintillation characteristics and specific heat, have been investigated experimentally. The excitation spectrum and light yield are measured ranging from 10 K to room temperature; and the heat capacities of these two crystals measured at O(200) mK demonstrate that the results are consistent with the prediction of Debye model. Consequently, a 2-cm cubic LMO bolometer is setup and running in a ground cryostat at ultra-low temperature mK-level. The energy resolution as FWHM has achieved at 7 keV@511 keV.

Collaboration you are representing

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