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Recent R&D Progress Towards a Bolometric 0νββ Experiment at China Jinping Underground Laboratory

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The search for neutrinoless double-beta decay (0νββ) could shed light on fundamental questions including the Majorana nature of neutrinos, potential lepton number violation, and the matter-antimatter asymmetry in the universe. Scintillating bolometers, with their excellent energy resolution and background discrimination capabilities, represent a promising technology for next-generation 0νββ experiments. We present recent collaborative efforts in China to develop scintillating bolometers for 0νββ searches, including ground-lab R&D tests and simulation studies. Current work focuses on establishing the basic performance characteristics of detector modules through ground-lab R&D and simulation studies. These development efforts will inform the design of a future experiment at the China Jinping Underground Laboratory (CJPL), with the ultimate goal of achieving high-sensitivity 0νββ searches.

Collaboration you are representing

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