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## **A status of CUPID-Mo bolometric experiment to search for neutrinoless double-beta decay of $^{100}\text{Mo}$**

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The LUMINEU project has recently set up a technology for the development of high-performance radiopure  $^{100}\text{Mo}$ -containing scintillating bolometers, realized in the framework of the R&D activities towards the proposed tonne-scale neutrinoless double-beta decay experiment CUPID aiming at utilization of the existing CUORE infrastructure. Using in particular  $^{100}\text{Mo}$ -enriched  $\text{Li}_2\text{MoO}_4$  cryogenic detectors, high energy resolution (5-6 keV FWHM at 2615 keV), excellent alpha background rejection (>99.9%) and extreme radiopurity (below 0.005 mBq/kg of U/Th bulk contamination) have been demonstrated in multiple tests with remarkable reproducibility. Moreover, with only 0.06 kg\*yr of  $^{100}\text{Mo}$  exposure, the measured two-neutrino double-beta decay half-life is one of the most precise values ever reported. As a follow-up of this activity, a demonstrator named CUPID-Mo is collecting data in the Modane underground laboratory in France. CUPID-Mo consists of twenty 0.2-kg  $^{100}\text{Mo}$ -enriched  $\text{Li}_2\text{MoO}_4$  scintillating bolometers (containing more than 2 kg of  $^{100}\text{Mo}$ ) to be operated for at least 0.5 yr, providing a sensitivity to  $^{100}\text{Mo}$  larger than  $1\text{e}24$  yr. CUPID-Mo is a very important demonstrator for the implementation of CUPID, as the CUPID-Mo detectors follow closely the configuration chosen for the baseline of CUPID.

### **Less than 5 years of experience since completion of Ph.D**

N

### **Student (Ph.D., M.Sc. or B.Sc.)**

N

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