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The CUPID double beta decay experiment

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Neutrinoless double-beta decay ($0\nu\beta\beta$) is a key process to address some of the major outstanding issues in particle physics, such as the lepton number conservation and the Majorana nature of the neutrino. Several efforts have taken place in the last decades in order to reach higher and higher sensitivity on its half-life. The next-generation of experiments aims at covering the Inverted-Ordering region of the neutrino mass spectrum, with sensitivities on the half-lives greater than 10^{27} years. Among the exploited techniques, low-temperature calorimetry has proved to be a very promising one, and will keep its leading role in the future thanks to the CUPID experiment. CUPID (CUORE Upgrade with Particle IDentification) will search for the neutrinoless double-beta decay of ^{100}Mo and will exploit the existing cryogenic infrastructure as well as the gained experience of CUORE, at the Laboratori Nazionali del Gran Sasso in Italy. Thanks to ~1600 scintillating Li_2MoO_4 crystals, enriched in ^{100}Mo, coupled to ~1700 light detectors CUPID will have a simultaneous readout of heat and light that will allow for particle identification, and thus a powerful alpha background rejection.
Numerous studies and R&D projects are currently ongoing in a coordinated effort aimed at finalizing the design of the CUPID detector and at assessing its performance and physics reach.
In our talk, we will present the current status of CUPID and outline the forthcoming steps towards the construction of the experiment.

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