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# Development of NTL light detectors for the CUPID 0ν2β experiment

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The next-generation experiment CUPID (Cuore Upgrade with Particle IDentification) will search for $^{100}$Mo neutrinoless double beta decay (0ν2β) using enriched $Li_2{}^{100}MoO_4$ scintillating bolometers facing thin Ge cryogenic light detectors. The dual heat-light readout allows for the discrimination of the α-particles, an important background source in CUORE, CUPID's predecessor, and improves the experimental sensitivity. In addition, the Ge light detectors will be equipped with Al electrodes to amplify their signal-to-noise ratio through the so-called Neganov-Trofimov-Luke (NTL) effect. The NTL technology will be the key to reject the pileup of $^{100}$Mo two neutrino double beta decay (2ν2β), a significant background to the 0ν2β search due to the relatively fast 2ν2β decay rate of 100Mo. Currently, various developments are pursued within the collaboration to obtain the best performance from these NTL light detectors and a reliable production process. In this poster, we will present the R&D efforts with the most recent obtained results, the future objectives, and how they will help to reject pileup to keep the background level within the designed level.

## Poster prize

Yes

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