

Abstract Submitted
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Anti-Reflective Coatings R&D for Next Generation Neutrinoless Double Beta Experiments ALEXANDER LEDER, Massachusetts Inst of Tech-MIT, CUORE COLLABORATION — The Cyogenic Underground Observatory for Rare Events (CUORE) is a ton-scale cryogenic source=detector experiment designed to search for the Neutrinoless Double Beta Decay ($0\nu\beta\beta$) of ^{130}Te . CUORE currently utilizes a single phonon readout channel per crystal; adding a second channel for scintillation or Cherenkov light would improve particle identification for actively rejecting background events. This light would be collected via semiconductor wafers covered with anti-reflective coatings. These coatings maximize light absorption. In this talk, I will discuss the coating optimization regarding material and structure, and its implications for designing the next generation CUORE-style experiment. In addition, I will discuss projections for possible sensitivities of next generation $0\nu\beta\beta$ searches that use dual channel light-phonon readouts.

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