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Light Detection in DRD2

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The Detector Research and Development for Liquid Detectors (DRD2) Collaboration is a CERN-recognized international initiative, formally established in 2023, aimed at advancing liquid detector technologies. The collaboration currently includes 17 countries and over 200 researchers, with participation continuing to expand. Light Readout is a dedicated Work Package in DRD2 since light detection in noble element detectors is central to all large-scale experiments in neutrino physics and dark matter using this technology. Improving photon detection efficiency is essential for increasing sensitivity in rare-event searches, enhancing event reconstruction and energy resolution, and enabling novel detection techniques. Following an overview of the DRD2 collaboration and its key objectives, this presentation will focus on current efforts to improve vacuum ultraviolet (VUV) photon detection efficiency in liquid argon and xenon detectors.

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