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# Electroluminescence studies for DarkSide

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Dual phase liquid argon dark matter detectors, such as the DarkSide experiment, rely on a detailed understanding of secondary scintillation light (S2) produced by electroluminescence in the gas phase. The formation of S2 is not well understood, especially for high electric field cryogenic detectors. This talk will present an R&D effort at UCLA to fully map the space of parameters that affect S2. This effort will inform design parameters and operating conditions for future dual phase liquid argon detectors, particularly the next generation experiments and beyond in the DarkSide dark matter search program.

**Primary author:** Mr FAN, Alden (UCLA)

**Presenter:** Mr FAN, Alden (UCLA)

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