

The ‘Gen-II’ LAPPDTM: Large-Area Ceramic-Body Planar MCP-based Photo-Detectors

Large-Area Picosecond Photo-Detectors (LAPPD) can enhance scientific reach of future liquid-based neutrino detectors by allowing for optical tracking and event topology reconstruction. In order to enable high volume production of LAPPD to provide sufficient photo-coverage in future large-scale experiments the next generation of LAPPD is being developed. The Gen-II LAPPD is a 20x20 cm² MCP-based photo-detector that has a monolithic ceramic detector base with an anode capacitively coupled through a thin metal film to an application specific readout pattern outside of the vacuum package. We discuss the development, including recent progress in producing a photo-cathode on the detector window using the air-transfer process. We have demonstrated the feasibility of several critical process steps including demonstration of cesium transport from a source outside of the detector package to the entire surface of the detector window in the presence of two full-size MCPs inside the detector.

Session and Location

Monday Session, Poster Wall #114 (Auditorium Gallery Left)

Poster included in proceedings:

yes

Primary authors: ELAGIN, Andrey (University of Chicago); SPIEGLAN, Eric (University of Chicago); ANGELICO, Evan (University of Chicago); FRISCH, Henry (University of Chicago)

Presenter: ELAGIN, Andrey (University of Chicago)

Track Classification: Poster (participating in poster prize competition)