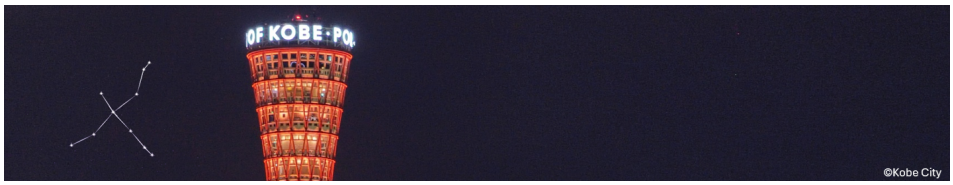

Contribution ID: **18** Type: **not specified**

Micromesh structures for Charge Amplification and Readout in Negative Ion Gases

Tuesday, 24 February 2026 11:05 (25 minutes)

Low pressure gaseous Time Projection Chambers (TPCs) are seen as a viable technology for directional dark matter searches. Recent success with novel Multi-Mesh Thick Gaseous Electron Multiplier MMThGEM structures in challenging gases like SF6, and mixtures thereof, have prompted further investigation into micro-mesh structures for charge amplification. Modern lithography techniques used to make Micro-Pattern Gaseous Detectors (MPGDs), like ThGEMs and Micromegas, can be expensive and require considerable expertise to execute effectively. However, additive manufacturing techniques, like 3D printing, can be implemented relatively cheaply and significantly speed up the prototyping phase of detector development. In this talk a new MPGD called a Low-cost Amplification and Readout Device (LARD) is presented. Results from first light measurements in low pressure CF4 are discussed and the future scope of this modular and scalable technology is outlined.

Presenter: MCLEAN, Alasdair (Adelaide University)

Session Classification: Gas detector R&D