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Characterization of Novel Operation Modes for Secondary Emission Ionization Calorimetry EMRAH TIRAS, University of Iowa, KAMURAN DILSIZ, Bingol University , HASAN OGUL, Sinop University, CHRISTINA SNYDER, BURAK BILKI, YASAR ONEL , University of Iowa, DAVID WINN , Fairfield University — Secondary Emission (SE) Ionization Calorimetry is a novel technique to measure electromagnetic showers in high radiation environments. We have developed new operation modes by modifying the bias of the conventional PMT circuits. Hamamatsu single anode R7761 and multi-anode R5900-00-M16 Photomultiplier Tubes (PMTs) with modified bases are used as SE detector modules in our SE calorimetry prototype. In this detector module, the first dynode is used as the active media as opposed to photocathode. Here, we report the technical design of new modes and characterization measurements for both SE and PMT modes.

Emrah Tiras
University of Iowa

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