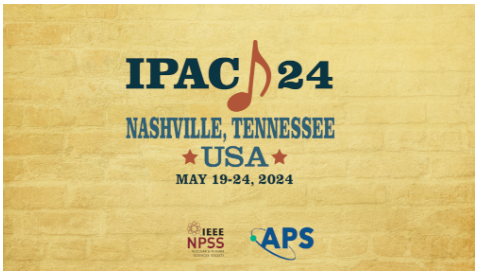

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Development of a hybrid thermionic and photoemission electron gun and dedicated test stand for ELSA

Wednesday, 22 May 2024 16:00 (2 hours)

A new electron gun is currently being designed for the S-band Linac injector for ELSA. The objective of this development is to realize a new single bunch injection mode in addition to the standard long pulse (multi bunch) mode along with an improvement of the current beam parameters (e.g. emission current & transverse emittance) achieved by the existing gun. A dual mode design is being developed that utilizes a cesium dispenser cathode both as a thermionic and a photo-cathode using thermally assisted photoemission. In addition to the novel electron gun, a dedicated test stand is currently being designed to allow detailed characterization of both operating modes. The refined design of the gun and the current status of the test stand including beam parameter simulations are presented.

Footnotes

Funding Agency

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