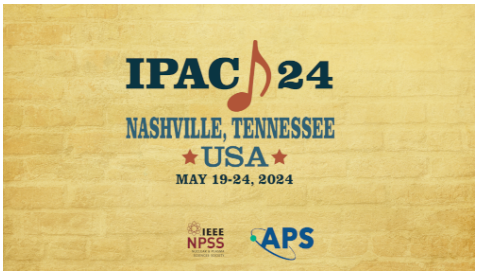

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First conduction cooled photoinjector status

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

SRF photoguns become a promising candidate to produce highly stable electrons for UEM/UED applications because of the ultrahigh shot-to-shot stability compared to room temperature RF photoguns. SRF technology was prohibitively expensive for industrial use until two recent advancements: Nb3Sn and conduction cooling. SRF gun can provide a CW operation capability while consuming only 2W of RF power which eliminates the need of an expensive high power RF system and saves a facility footprint. Euclid is developing a continuous wave (CW), 1.5-cell, MeV-scale SRF conduction cooled photogun operating at 1.3 GHz. We aim for generation of the first beam in 2024. In this paper, we present the most up-to-date progress including results of the first cool down of the gun-cavity in the newly developed conduction cooled cryomodule and LLRF system development.

Footnotes

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