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High gradient operation of cryogenic C-band RF photogun at UCLA

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Future electron accelerator applications such as x-ray free electron lasers and ultrafast electron diffraction are dependent on significantly increasing beam brightness. We have designed and produced a new CrYogenic Brightness-Optimized Radiofrequency Gun (CYBORG) for use in a new beamline at UCLA to study the brightness improvements achievable in this novel low temperature high gradient accelerating environment. We are currently in the process of commissioning the photogun for operation with peak cathode fields in excess of 120 MV/m. We report here on the status of conditioning the photogun and report on dark current measurements and maximum field achieved thus far.

Footnotes

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Paper preparation format

Region represented

North America

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