

Development of CW SRF L-band photoinjector for future High-Duty-Cycle EuXFEL

The future high repetition rate upgrade of the EuXFEL assumes the implementation of a continuous wave (CW) electron source. A CW photoinjector based on the 1.3 GHz SRF gun cavity is the preferred option for EuXFEL. Recently, we demonstrated the possibility of achieving a peak axial electric field of 55 MV/m with a copper photocathode installed. Further steps include advanced metal photocathode R&D and constructing a test stand facility (ts4i) that will enable 6D phase space characterization. In this talk, we introduce the history of the development of the SRF gun cavity and report on the present status of our R&D efforts.

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