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## Report on experimental results of a sub-GV/m photocathode gun

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A program to develop a sub-GV/m rf photocathode gun is underway at Argonne Wakefield Accelerator (AWA) facility as a pathway towards producing brighter electron bunches. The X-band rf gun is powered by high-power, short rf pulses (9-ns FWHM), which, in turn, are generated by AWA's high-current drive beam. In a previous proof-of-principle experiment, an unprecedented gradient of 400 MV/m on the photocathode surface was demonstrated. In this talk, we present recent progress and our R&D roadmap for the next several years.

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