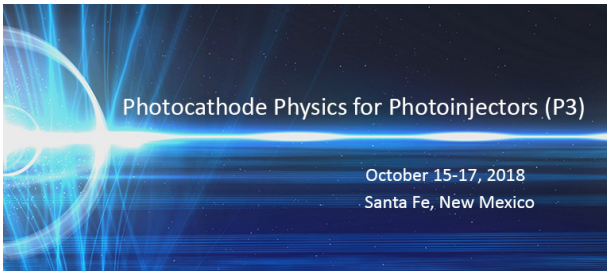

Contribution ID: **88** Type: **not specified**

Robust Cs2Te and Mg photocathodes in SRF gun at ELBE center successful for CW IR FEL and THz radiation

Tuesday 16 October 2018 17:25 (20 minutes)

Quality of photocathodes is one of the critical issues for the stability and reliability of the light source facility. In 2014, SRF gun-I with Cs2Te provided stable electron beams successfully for IR FEL at HZDR [1]. Cs2Te worked in SRF gun for more than one year without degradation. Currently, Mg photocathodes with QE up to 0.5% are applied in SRF Gun II, which is able to generate e- beam with bunch charges up to 200 pC in CW mode with sub-ps bunch length for the high power THz radiation facility for the ELBE users [2].
1. J. Teichert et al., Free-electron laser operation with a superconducting radio-frequency photoinjector at ELBE, Nuclear Instruments and Methods in Physics Research A 743 (2014) 114-120
2. Xiang et al., Study of Magnesium Photocathodes for Superconducting RF Photoinjectors, IPAC 2018, Vancouver, Canada, April 29 –May 4, 2018

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