Contribution ID: **874** Contribution code: **TUPA030** Type: **Poster Presentation**

Mean Transverse Energy and Degradation Measurements on a Caesium Telluride Photocathode

Tuesday, 9 May 2023 16:30 (2 hours)

Fourth generation light sources require high brightness electron beams. To achieve this a cathode with a high quantum efficiency and low intrinsic emittance is required while also being robust with a long lifetime and low dark current. Alkali-metal photocathodes have the potential to fulfil these requirements and, as such, are an important area of research for the accelerator physics community.
A Cs-Te photocathode grown at STFC Daresbury Laboratory is presented. Important photoemissive properties such as quantum efficiency (QE), mean transverse energy (MTE) and lifetime have been investigated using the Transverse Energy Spread Spectrometer (TESS). Elevated MTE beyond the Cs_2Te photoemission threshold is reported as well the QE decrease and MTE increase when a Cs-Te photocathode is subject to progressive oxygen degradation.

Funding Agency

Footnotes

I have read and accept the Privacy Policy Statement

Yes

Primary author: CHURN, Hugh (Science and Technology Facilities Council)

Co-authors: JONES, Lee (Science and Technology Facilities Council); NOAKES, Tim (Science and Technology Facilities Council)

Presenter: JONES, Lee (Science and Technology Facilities Council)

Session Classification: Tuesday Poster Session

Track Classification: MC2: Photon Sources and Electron Accelerators: MC2.T02: Electron Sources