

Photocathode Physics for Photoinjectors 2018



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< 10 meV MTE from Cu

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The brightness of electron beams is limited by the smallest possible mean transverse energy (MTE) of electrons emitted from the photocathode. In this talk, I will show the various factors that limit MTE and show how by minimizing each of these factors we obtained a record low MTE of 6 meV from the (100) surface of Cu. I will also describe the instrumentation developed to measure such a small MTE. Finally, I will talk about the various ongoing efforts within the Center for Bright Beams to obtain such small MTE along with large charge densities to increase the brightness of electron beams by two orders of magnitude.

Presenter: Dr KARKARE, Siddharth (Arizona State University)

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