

Characterization of Cesium Tungsten Dispenser Photocathodes

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Collaborators:

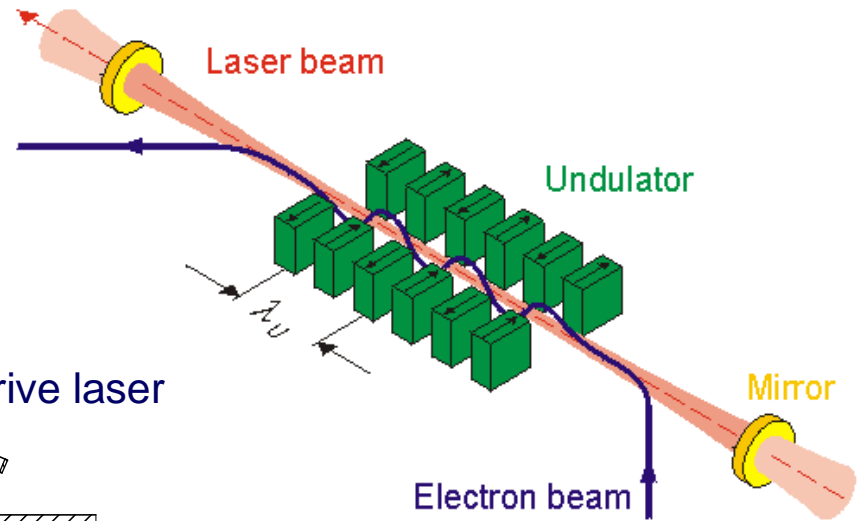
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& **APPLIED PHYSICS**

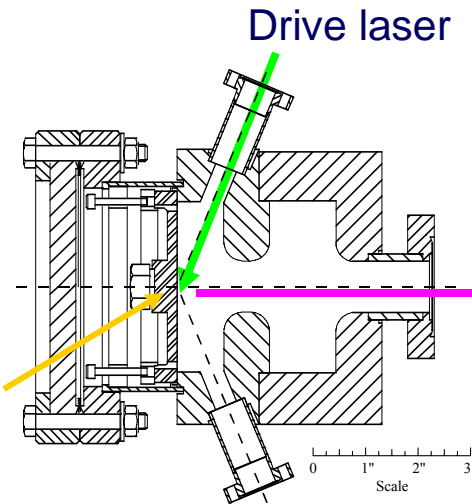


Photocathode Applications



$$QE = \frac{\text{electrons}_{\text{out}}}{\text{photons}_{\text{in}}}$$

Photocathode



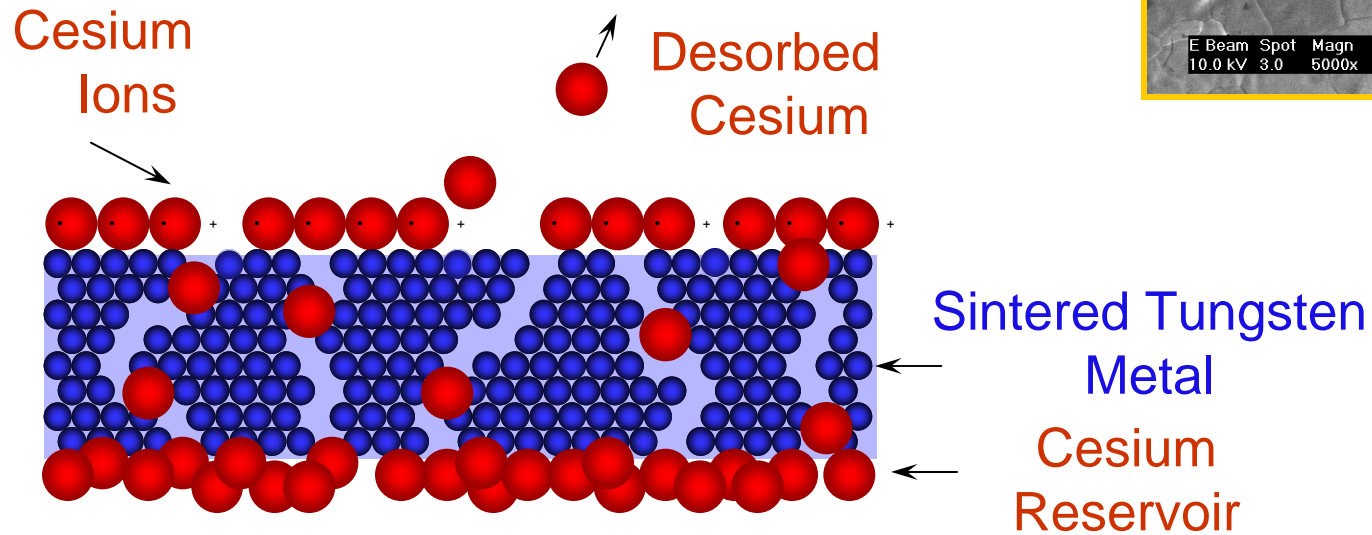
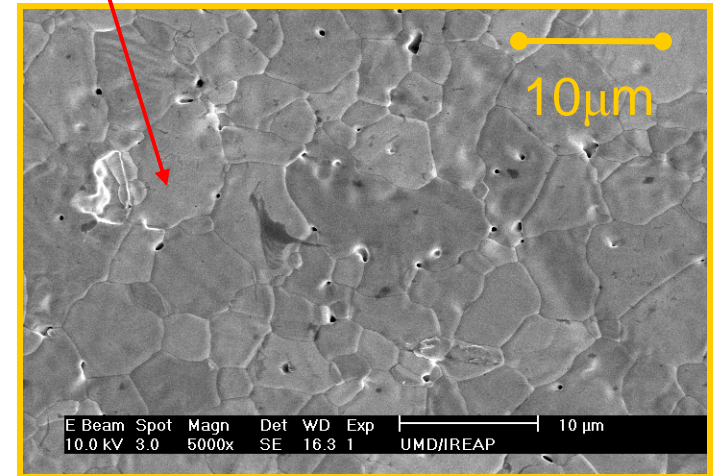
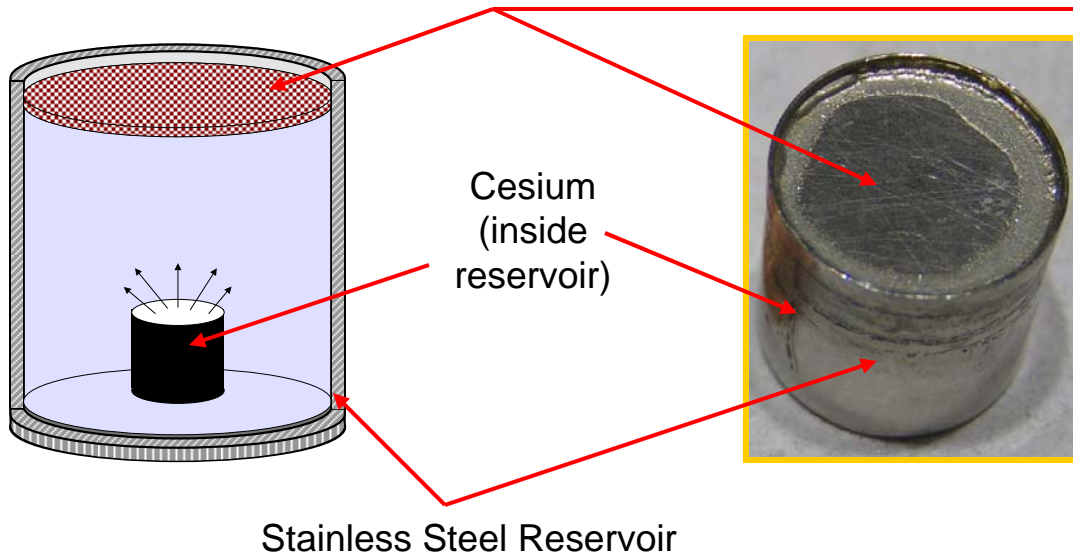
References:

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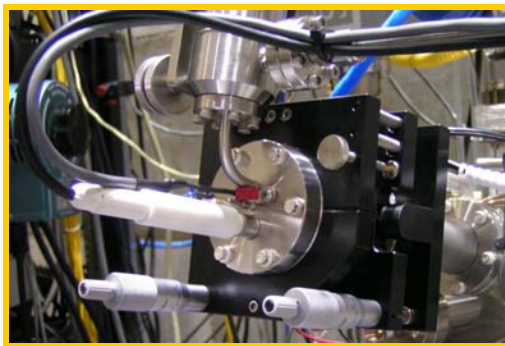
Dispenser Cathode Introduction

Photoemitting surface: Sintered Tungsten Disk

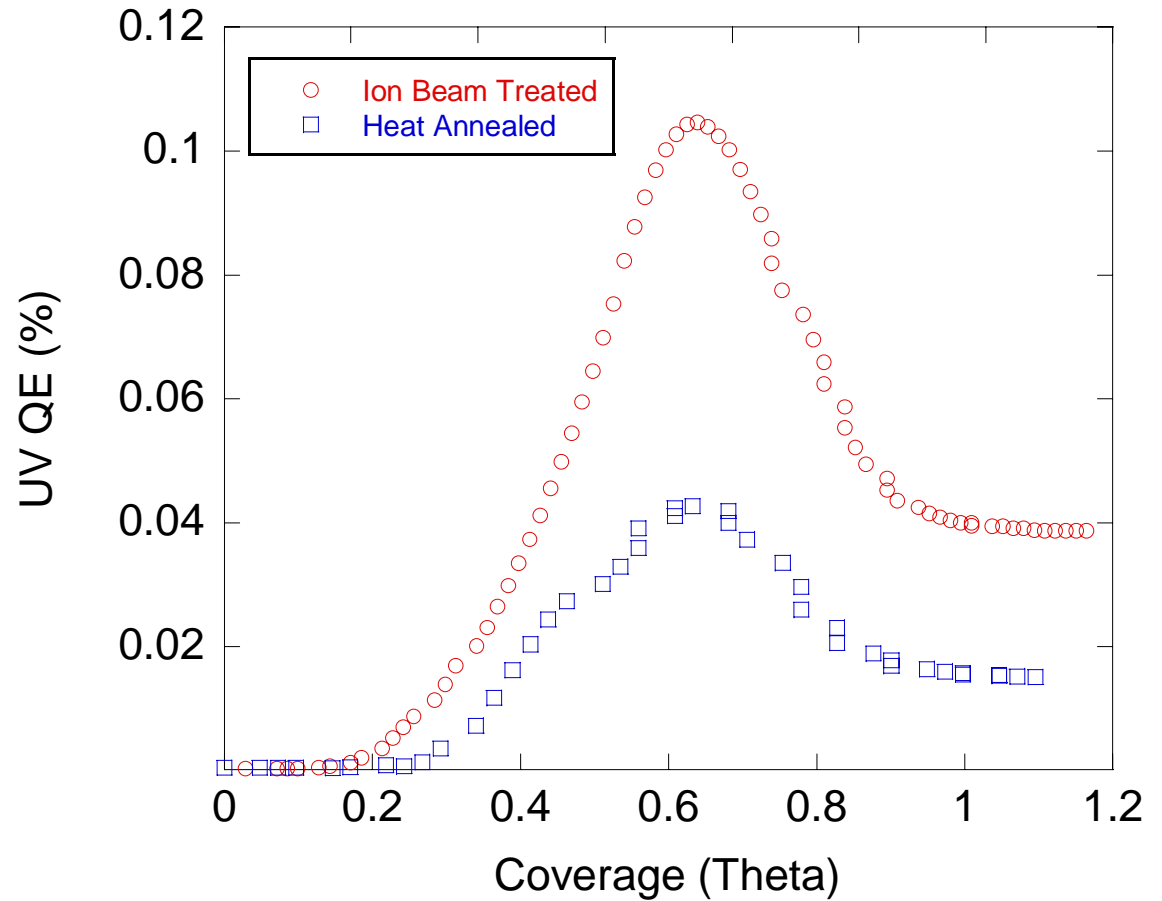


Argon Ion Beam Cleaning

Ion Gun



**QE vs. Coverage:
Comparing Anneal and Ion Beam Treatment**



Dispenser Characterization

Temp (°C)	Max QE (%)
100	~ 0
148	0.014
175	0.068
192	0.086

Workfunction: $\Phi=1.3\text{eV}$

energy required of an electron to escape from the lattice into vacuum

Richardson Plot

