TREND 2005

Measurement of Quantum Efficiency of Cesiated Silver Photocathodes

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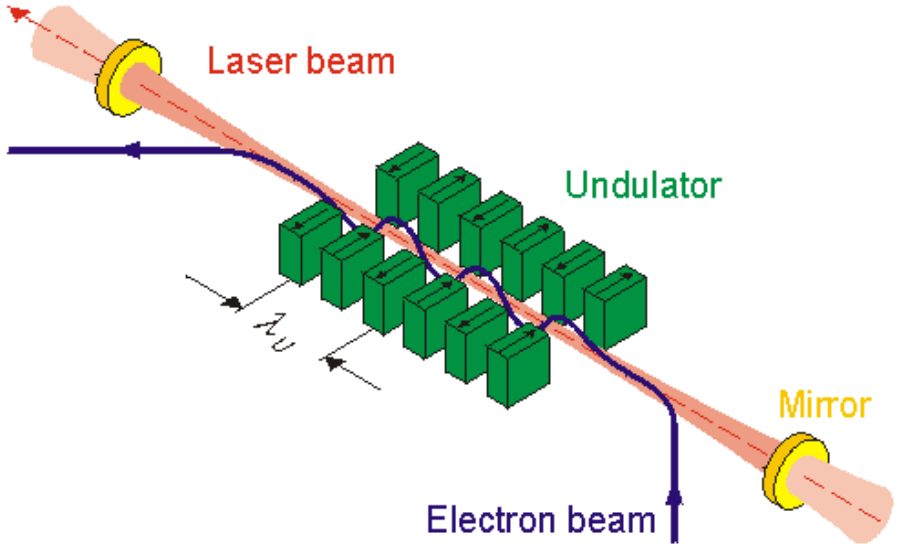
INSTITUTE FOR RESEARCH IN
ELECTRONICS
& APPLIED PHYSICS

Purpose

High-quality electron beams



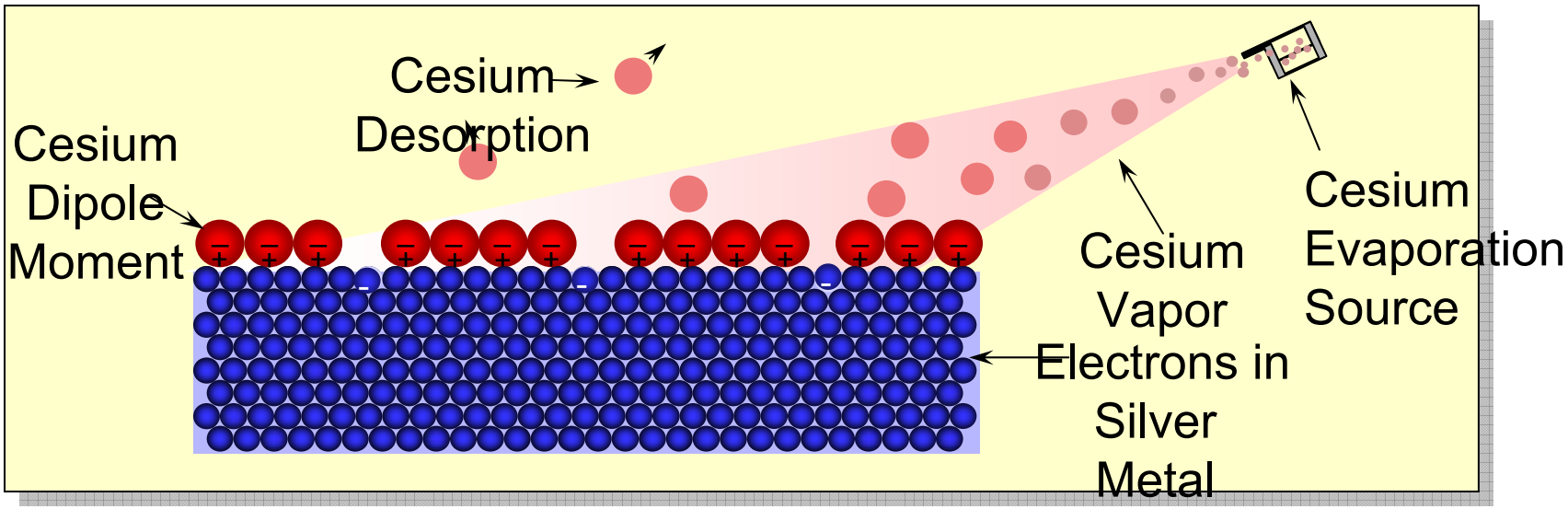
Free-electron lasers (FELs) ⟶

- Nanotechnology
- Biomedical Research
- Defense Systems

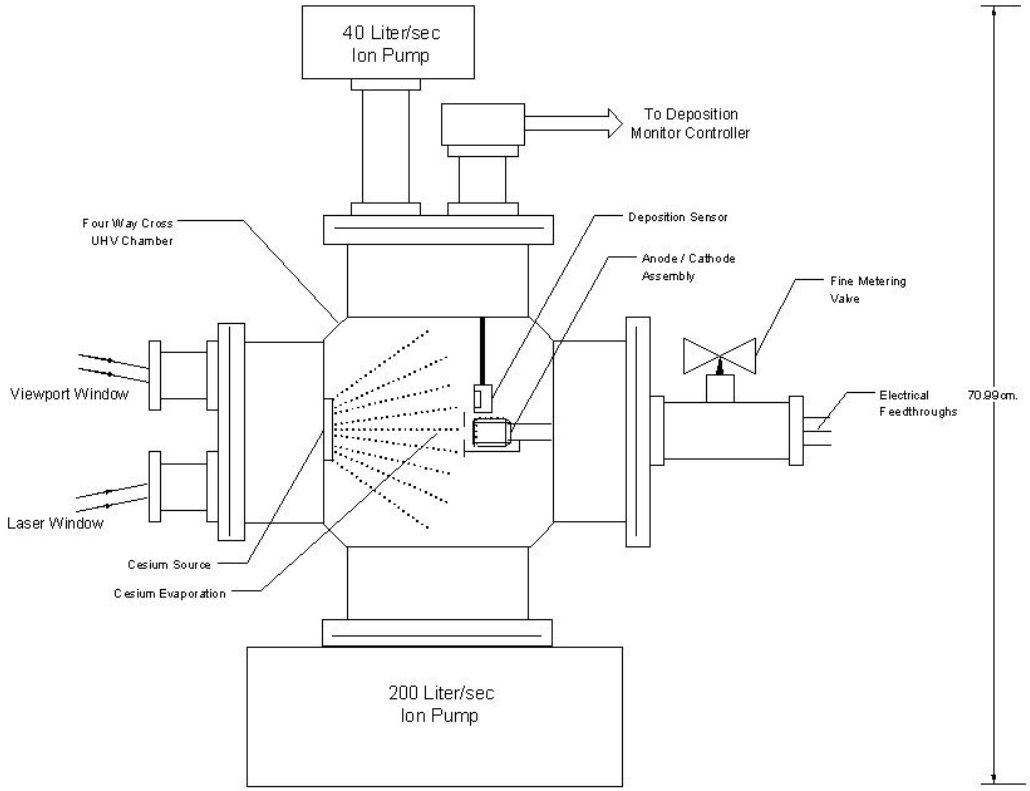
Photocathodes

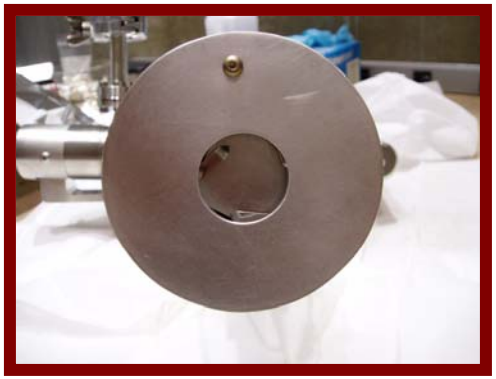
Material	λ(nm)	QE at λ (%)	Lifetime
K_2CsSb	527	8	$T_{1/2}$<4h
Cu	266	1.4e-4	> 100kh

$$QE = \frac{e^-_{out}}{p_{in}}$$

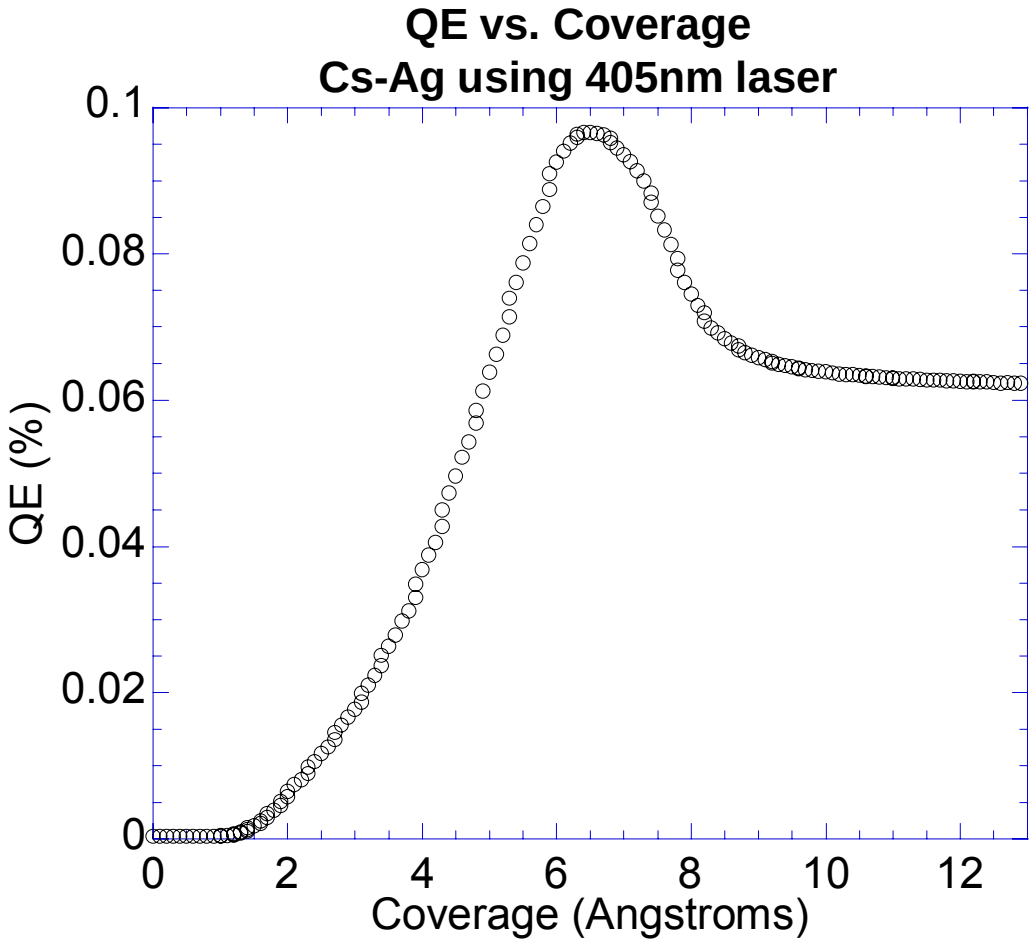


Experimental Procedure

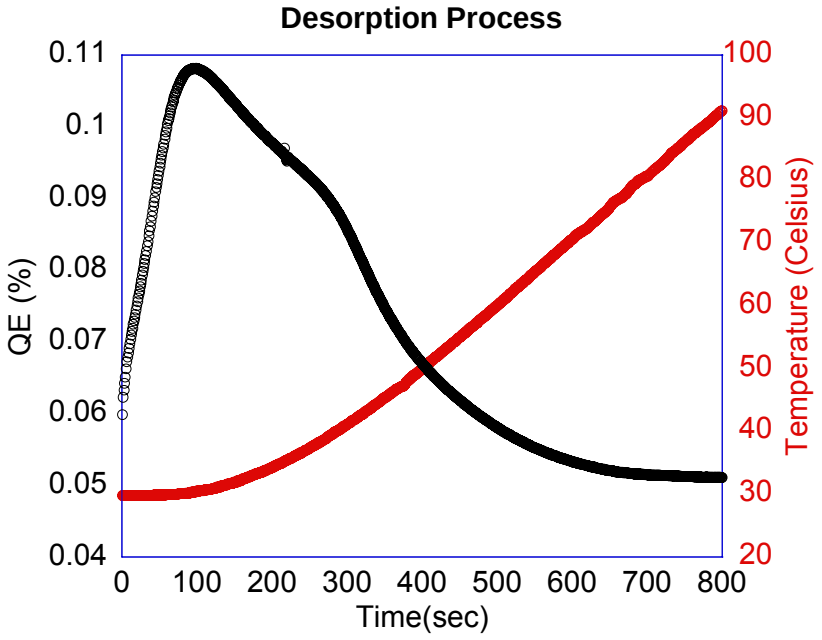




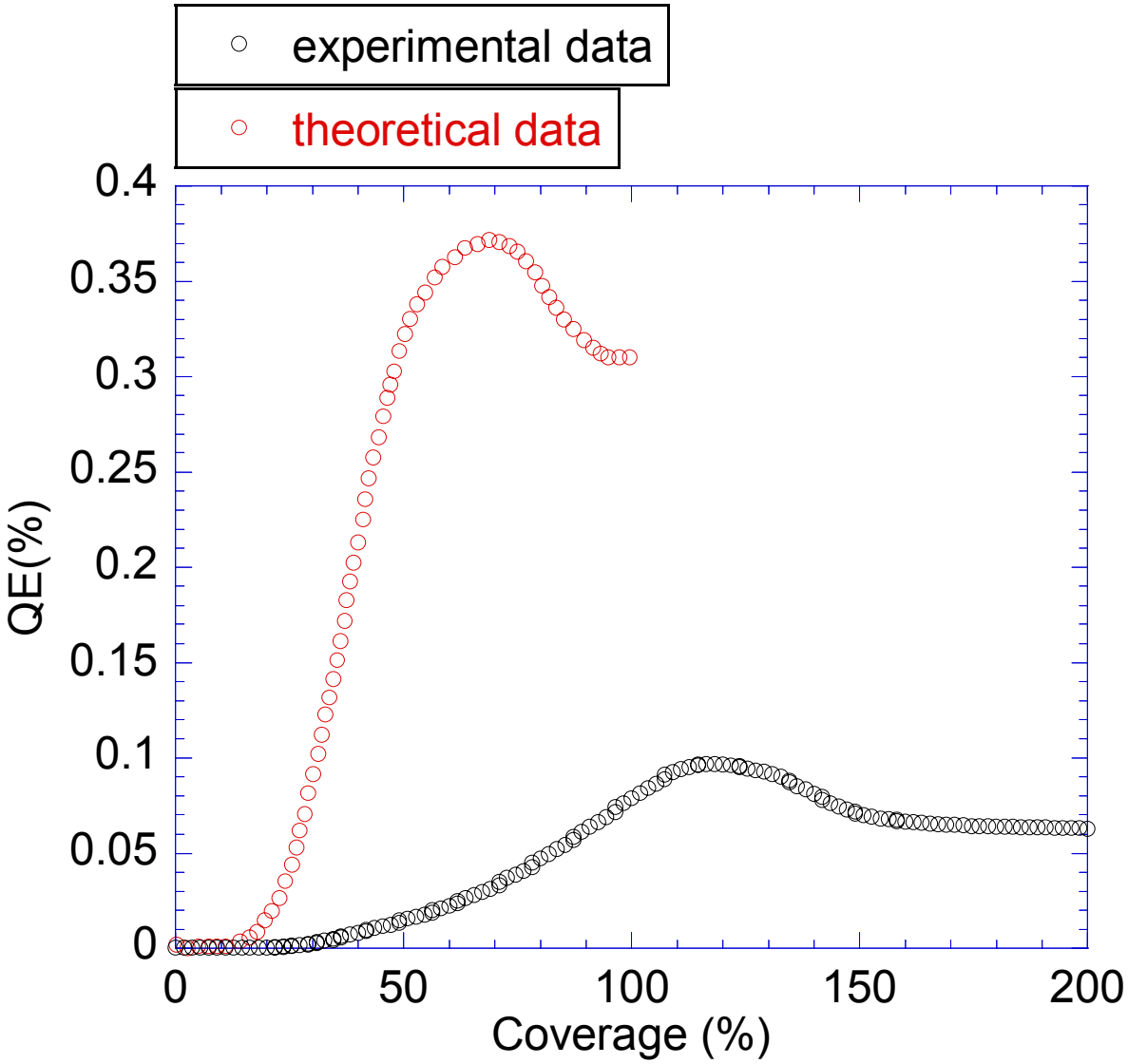
Observations



$T_{1/e}$≈166hrs



Comparison to Jensen Theory



Future Work: Dispenser Cathode