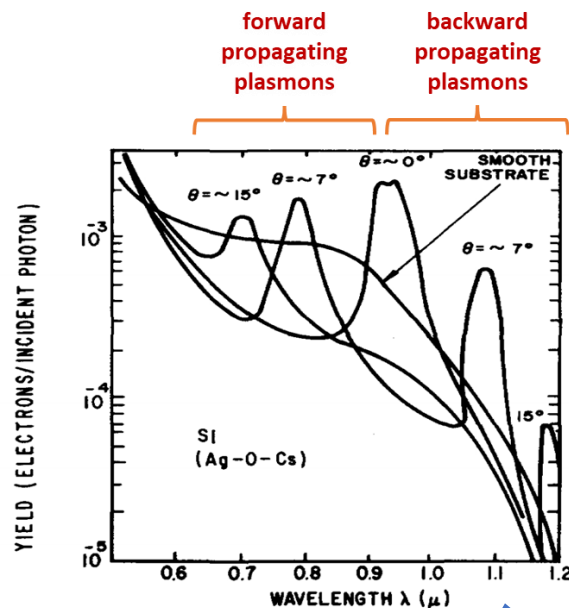
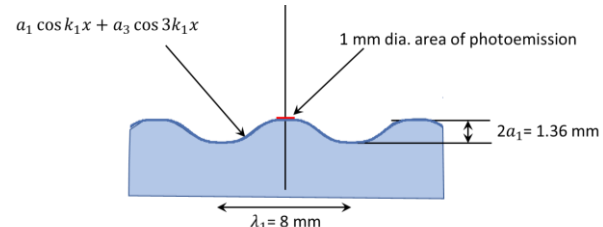


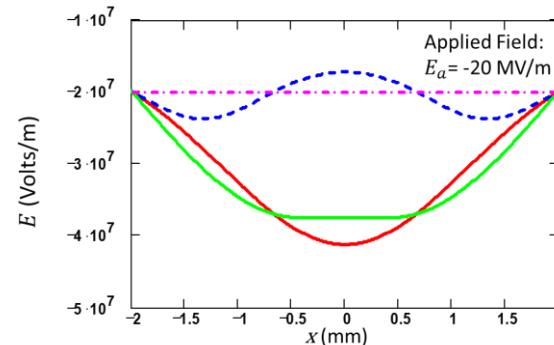
Grating tuned cathodes give high QE at photo threshold\*



Adding a spatial third harmonic flattens the enhanced field at the hilltops where the cathode is located

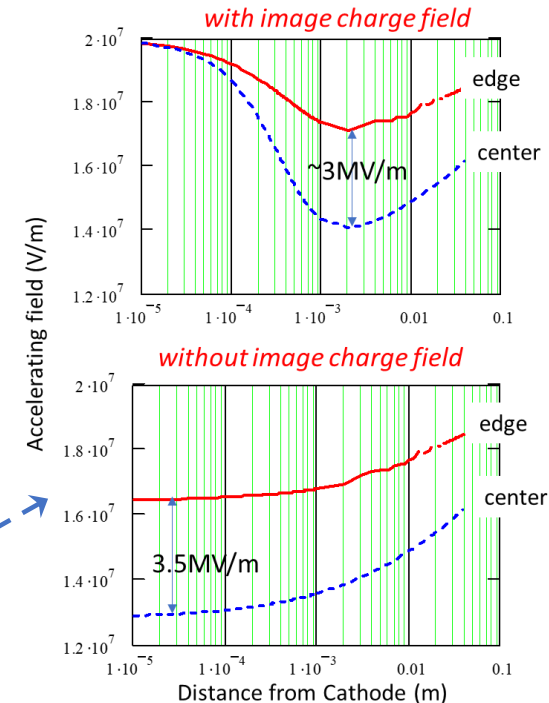


The 20 MV/m applied field is enhanced a factor of 1.85 to 37 MV/m. The field is flat over the photocathode's 1 mm diameter area.

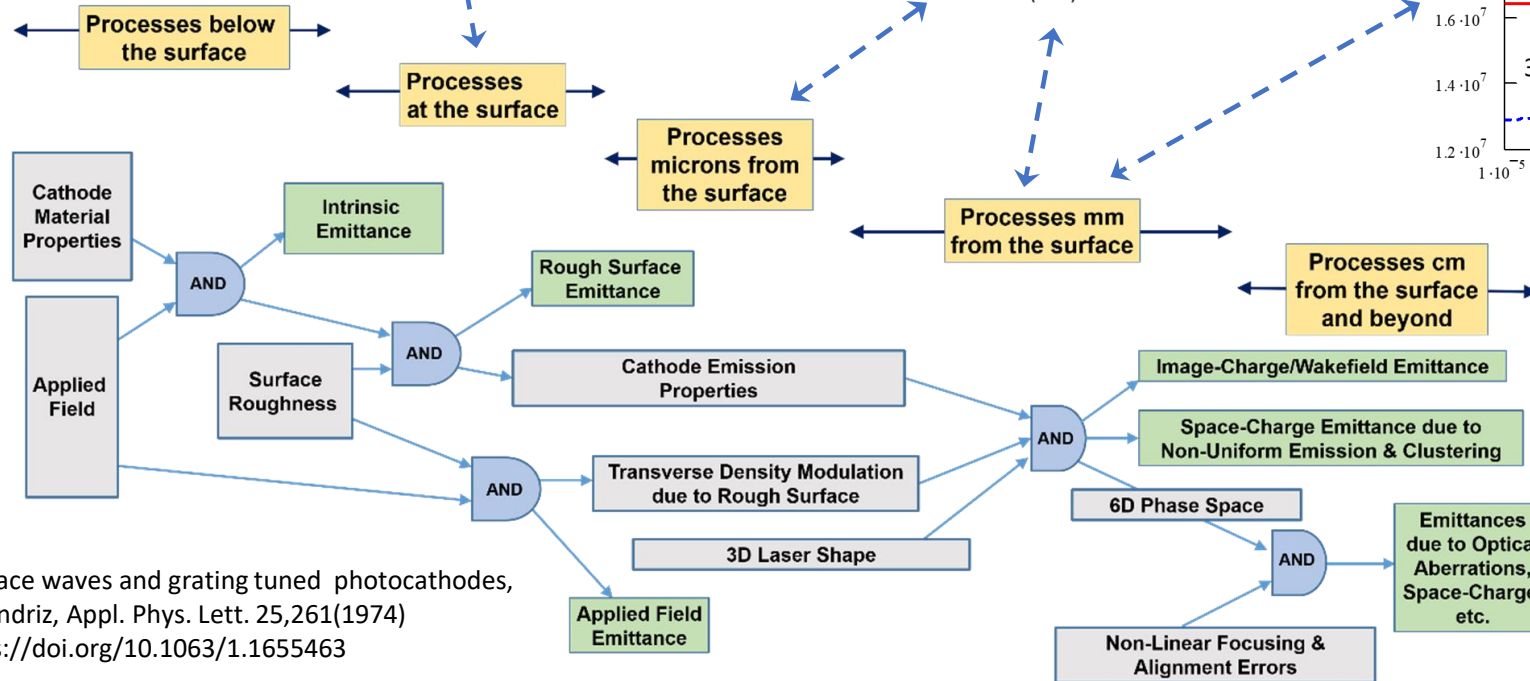


Meta-cathode doesn't improve beam quality

100pC, 3amp-peak, cathode radius 1mm, 20MV/m applied field+ bunch space charge field ...



- ❖ Meta-cathode update
- ❖ Structured cathode surface to enhance and linearize the applied field near the cathode surface
- ❖ Endriz's Grating Tuned Cathode with high QE at photoelectron threshold.



\*Surface waves and grating tuned photocathodes, J.G. Endriz, Appl. Phys. Lett. 25,261(1974) <https://doi.org/10.1063/1.1655463>