

Fabrication of CNT based Field Emitter Array for Enhancement of Current Density

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One of our achieved milestones in producing CNT based field emitter was to reach a DC current density of more than 300 A/cm^2 . This current density was achieved by purposely producing a small emitter with an emission area of $75 \times 75 \mu\text{m}^2$; therefore the overall current emission from the emitter was only about 20mA. In order to improve the total current emission from a practical size cathode, we are developing and fabricating CNT based field emitter arrays (FEAs).

This talk will present the current situation for the fabrication of our CNT FEA, its emission characteristics in comparison with our conventional emitter, its lifetime, and plans to fabricate single and double gate FEAs.

1

