

Fabrication of probe type carbon nanotube point emitters and their Field emission characteristics

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We report the field emission characteristics of a probe type carbon nanotube (CNT) point emitter fabricated by attaching CNT bundles onto the tip of atomic force microscope (AFM) probe. The bundles of single-walled carbon nanotubes (SWCNTs) and double-walled carbon nanotubes (DWCNTs), which were synthesized by a hydrogen arc discharge, were attached on the tip of AFM probe using a dielectrophoresis method in order to fabricate the SWCNT or the DWCNT emitter. After attaching a bundle of CNTs on the AFM tip, field emission of an individual SWCNT or DWCNT bundle was measured and investigated.