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Effects of ion irradiation of screen-printed carbon nanotubes use in for field emission display applications

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The effect of argon ion irradiation on the field emission and luminescent properties of screen-printed carbon nanotubes (SP-CNT) with square pixels was examined, to further improve field emission displays (FED) applications to CNTs. Persistent problems associated with SP-CNTs such as bent or/and buried CNTs and the degradation in binder-residue-induced emission were improved as a result of the permanent straightening of CNTs and protruding CNTs from binders by the irradiation treatment, in addition to its surface cleaning effect. The finding here in suggest that ion irradiation treatment is an effective method for achieving uniform field emission and to reduce the aging of SP-CNTs.