

ABSTRACT**FIELD EMISSION DEVICE AND METHOD OF FABRICATING SAME**

5 This invention relates to a method of fabricating a field emission device (FED) by using a carbon composite film, the composite film providing a field emission layer which consists of fine carbon-metal grains and/or carbon nanotubes, so that (a) a threshold voltage required for emitting electrons from the field emission device can be lowered significantly; (b) a stable electron beam of the field emission display device can be
10 increased; and, (c) emission uniformity and emission spot density can be greatly improved. The fabrication method involves preparing a metal-carbon composite film on a suitable substrate using an appropriate deposition technique. The carbon composite film is then thermally treated post-deposition, so as to form nano-particles and/or nanotubes in the film. Post-treatment of the composite film may involve annealing or plasma etching
15 using hydrogen or hydrocarbon gas to reduce the electron emission barrier. During deposition of the metal-carbon composite film, the composition of the metal content in the film can be tuned to control the field emission properties of the field emission component.

Figure 6 is to be published



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