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Control of CNTs density through Co deposition time via PECVD

Byung ho Ha, In wha Lee, Yong suk Shin, Hyun suk Kim, Serng yerl Park, Young Jin Lee,
Yun hee Kim Ji hoon Yang, Chong yoon Park,
CNNC, Sung Kyun Kwan University

Many research have been tried to control CNTs density on various substrate. Because CNTs on substrate had the different field emission property as the CNTs density is dense or sparse(1). For control of CNTs density, density of catalyst particles must be controlled, but controlling catalyst layer deposited was more difficult using PVD(sputtering). We have controlled density of Co particles by means of adjust of deposition rate with electro-chemical deposition method, which is easier than PVD. So we controlled the size and Co nano-particles to control the density of CNTs with the management of Co deposition time from 0.1sec to 10sec on TiN coated Si (100). CNTs was grown by PECVD, The size and distribution of Co nano-particles varied by Co deposition time. The density of grown CNTs was changed by Condition of substrate preparation

[Reference]

(1) Soo-Hwan Jeong, et al., Appl. Phys. Lett 78, 2052 (2001)

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