

Abstract Submitted
for the SHOCK09 Meeting of
The American Physical Society

Growth and characterization of one-dimensional tilted carbon nanorod arrays synthesized by the catalyst-assisted oblique angle deposition technique HONGXIN ZHANG, PETER FENG, Universidad de Puerto Rico — One-dimensional tilted carbon nanorod arrays were synthesized on molybdenum substrates by using the catalyst-assisted oblique angle deposition technique. The structures of the one-dimensional tilted carbon nanorods evolve with substrate temperatures, but otherwise identical growth conditions. The crystallographic structures, chemical compositions, and bond structures of the tilted carbon nanorods were investigated by using X-ray diffraction, energy dispersive x-ray spectroscopy, X-ray photoelectron spectroscopy, and Raman scattering spectroscopy. The cross-sectional SEM image showed the multilayered tilted carbon nanorods were also obtained. The electron field emission behaviors of the obtained one-dimensional carbon tilted nanorod arrays were greatly improved with the increase of substrate temperature. Meanwhile, the sample with multiple layers of carbon tilted nanorods exhibits better field emission behaviors than those with single layer.

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Date submitted: 24 Feb 2009

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