

Abstract Submitted
for the 4CF13 Meeting of
The American Physical Society

Functionalizing **Carbon Nanotube Forests with 1,5-diaminonaphthalene** BENJAMIN POUND, T.C. SHEN, Utah State University — Carbon Nanotube (CNT) Forests are vertically grown carbon nanotubes. They can be as tall as millimeters, with radii from less than one nanometer (single-walled) to tens of nanometers (multi-walled). Their high surface area to volume ratio provides a unique material system for biosensor applications. However, the CNT surface does not provide covalent bonding sites to many antibodies of interest. One approach is to attach linker molecules with aromatic rings via π -stacking to the CNT surface and activating the linker molecules to bind covalently to specific antibody molecules. Unfortunately, the conventional solution-based functionalization approach often leads to collapse of the CNT forest and hence a significant loss of binding sites. In this presentation we report our study of depositing 1,5-diaminonaphthalene on CNT forest by a vapor deposition method. We characterize the amount of deposition by fluorescence spectra. We plan to pattern CNT forest to further enhance the surface coverage by varying the geometry of CNT forest columns.

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Date submitted: 18 Sep 2013

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