

Abstract Submitted  
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**Conformal Coating of Carbon Nanotube Forests** DAVID KANE, RICHARD VANFLEET, ROBERT DAVIS, Brigham Young University, TED WANGENSTEEN, Moxtek, INC, REESE PETERSON, Brigham Young University — Carbon nanotube forests have a unique vertical growth that has been coupled with materials infiltration techniques including LPCVD, CVD, and electroplating to make a range of structures. Examples include MEMS, chromatography media, and batteries where the novel features include high aspect ratios and infiltration using a wide variety of materials. The CNT template with nanotube spacings on the order of 100 nm and heights up to 250  $\mu\text{m}$  creates difficult challenges to uniform coating of the infiltration materials. Atomic Layer Deposition, where diffusion into the forest and the deposition reaction are uncoupled may be the ideal infiltration process in these structures. We will discuss experiments where ALD was used to deposit oxides into CNT forests. Various chemical priming and surface functionalization were explored. This is a work in progress and ideal coating processes have not yet been determined.

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