

Abstract Submitted  
for the MAR11 Meeting of  
The American Physical Society

**Single-walled carbon nanotube buckypaper and mesophase pitch carbon/carbon composites**<sup>1</sup> JIN GYU PARK, NAM GYUN YUN, YOUNG BIN PARK, RICHARD LIANG, LLOYD LUMATA, JAMES BROOKS, CHUCK ZHANG, BEN WANG, HIGH-PERFORMANCE MATERIALS INSTITUTE, FSU COLLABORATION, NATIONAL HIGH MAGNETIC FIELD LABORATORY, FSU COLLABORATION — Carbon/carbon composites consisting of single-walled carbon nanotube (SWCNT) buckypaper (BP) and mesophase pitch resin have been produced through impregnation of BP with pitch using toluene as a solvent. Drying, stabilization and carbonization processes were performed sequentially, and repeated to increase the pitch content. Voids in the carbon/carbon composite samples decreased with increasing impregnation process cycles. Electrical conductivity and density of the composites increased with carbonization by two to three times that of pristine BP. These results indicate that discontinuity and intertube contact barriers of SWCNTs in the BP are partially overcome by the carbonization process of pitch. The temperature dependence of the Raman shift shows that mechanical strain is increased since carbonized pitch matrix surrounds the nanotubes.

<sup>1</sup>High-Performance Materials Institute, NSF DMR-0602859, NSF DMR-0654118

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Date submitted: 19 Nov 2010

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