

226e Synthesis and Characterization of F-Swnt/Npc Nanocomposites

Bo Yi, Henry C. Foley, and Ramakrishnan Rajagopalan

Single wall nanotubes (SWNT) have many promising applications in making composites due to their interesting mechanical, electronic and thermal properties. The main drawback in the use of SWNT in carbon/carbon composites is its poor dispersion in the precursor matrix. One of the ways to improve the dispersion of SWNT in the precursor is to functionalize the SWNT to promote the interaction between SWNT and the precursor. In our study, functional SWNT (f-SWNT) is prepared by treating SWNT with sulfanilic acid, sodium nitrite and AIBN in oleum. The f-SWNT with sulfonic acid group may be uniformly dispersed in furfuryl alcohol (FA) and work as the polymerization catalyst. F-SWNT/NPC nanocomposite is achieved by pyrolysing f-SWNT/PFA. Raman and HRTEM will be used to characterize the dispersion of SWNT in NPC. Physical properties, like mechanical properties, pore size distribution and electronic properties of these nanocomposites will be measured.