361e Influence of Chemical Treatment on the Conductivity of Swnt-Based Thin Films

Federico A. Scodelaro, Leandro Balzano, and Daniel E. Resasco

Single-walled carbon nanotubes (SWNTs) offer an exceptional potential for application in solid-state sensors, fuel cell electrodes and capacitors. In this contribution, composite thin films of different compositions (SWNT / SWNT-Ionomer / SWNT-Ionomer-Noble Metal nanoparticles) have been prepared using a variety of techniques (airbrushing / brush-painting / solution casting / vacuum filtering). The magnitudes of the electrical and ionic conductivity for the different compositions of films were investigated, and the change in conductance was monitored when subjecting the films to a variety of chemical treatments and processing conditions. SEM and surface area measurements were used to analyze structural changes occurring under these conditions. Potential applications of these chemiresistive materials will be presented.