

NASA Langley Research Center is actively seeking partnerships and collaborations to commercialize its Carbon Nanotube Polymeric technologies.

The Market Opportunities

- Electrostatic dissipative coatings
- Optically transparent, conducting films
- Thermal optical coatings
- Fibers and foams
- Electromagnetic displays
- Antenna/Second-surface mirrors

The Benefits

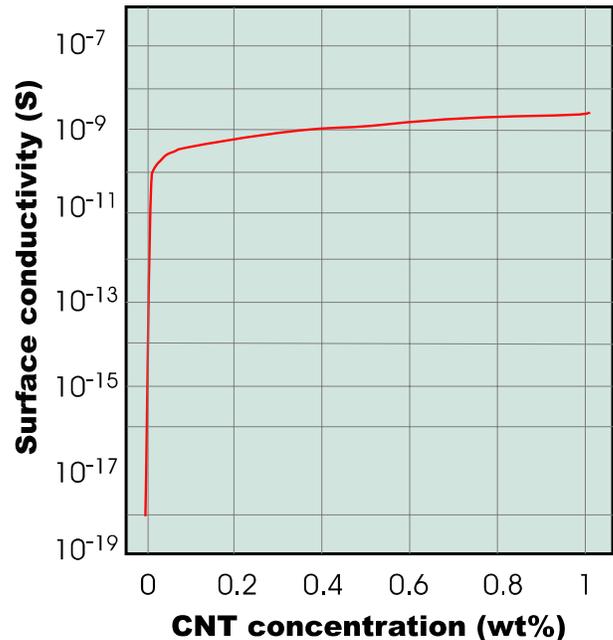
- Polymer films and/or coatings with enhanced electrical conductivity (10-12 orders of magnitude) and with high retention of optical transmission properties
- Unique combinations of properties can be achieved such as thermal conductivity, electrical conductivity, and optical transmission
- Process only requires a small amount of carbon nanotubes
- Provides a unique approach to tailor polymer film properties for special applications

The Technology

This technology consists of a process to disperse carbon nanotubes (CNT) into polymer matrices (polyimides, etc.) on a nanoscale level such that significant improvements in electrical conductivity are achieved without significant reduction in other key features such as optical transmission. Aromatic and conjugated polymers were preferred for this technology development with the aromatics (polyimides) exhibiting better dispersions of the CNT. The polymer CNT composites exhibited

Carbon Nanotube Polymeric Composite

Polyimide/Carbon Nanotube Films



Surface Conductivity of Polyimide/CNT Nanocomposite Films

significantly improved electrical conductivity (10-12 orders of magnitude) with only a nominal loss in optical transmission. This technology development represents a significant advance in electrically conducting, optically transparent polymers for applications such as coatings or composite films.

Additional Information

To discuss in detail how this technology can profit you and your business, please contact:

NASA Langley Research Center
17 West Taylor Street • Mail Stop 200
Hampton, VA 23681-2199
phone: (757) 864-1614 • fax: (757) 864-8314
e-mail: keith.e.murray@nasa.gov