A method in which CNTs are held in dispersion via the utilization of brief mechanical force and copolymers, and the superhydrophobic coatings created from such dispersions.

Carbon nanotubes (CNTs) are projected to dramatically change how we look at electronics, architecture and optics in the future. Their unique properties such as unmatched tensile strength, distinctive electrical attributes, superhydrophobicity, and ability to efficiently conduct heat, make them a highly desirable material for future applications. Despite their enormous potential, the current applications for CNTs are generally limited. One of the greatest challenges faced for the development of CNT-based technologies is their dispersion and stabilization in a solvent media - mostly due to strong van der Waals interactions. Current methods either reduce the conductivity of the CNTs or utilize highly corrosive and toxic chemicals, greatly limiting their applications.

Technical Details

The invention is a method of dispersion using only an initial mechanical force and a mixture of copolymers to hold the CNTs in solution. Results have shown that after one hour, the CNTs continued to be held in dispersion with up to 90% of them still considered isolated.

Benefits

- Method does not require the use of corrosive or toxic materials
- CNTs conductivity is not reduced
- CNTs are not chemically modified

Applications

- Protection against lightning strikes, electromagnetic shielding and heat dissipation

Technology #31164

- US Patent 8,211,969 B2

Inventors

Qun Huo, Ph.D. • Lei Zhai, Ph.D. • Jianhua Zou

For more information, contact:

Brion Berman | 407.882.0342 | brion.berman@ucf.edu | Tech ID #31164
UCF Office of Technology Transfer | 12201 Research Parkway, Suite 501, Orlando, FL 32826