

Electromagnetic Detecting and Energy Converting Coated Nanotubes

Coated carbon nanotubes which aid in energy collection and conversion

Researchers at Georgia Tech have explored nanostructure-based semiconductors that exhibit improved energy collection and conversion. Through their efforts, a system has been designed that is made up of multiple layers of coatings formed on aligned arrays of carbon nanotubes for this purpose. These layers are capped by a transparent, metallic coating to form arrays that demonstrate broadband detection and energy conversion of electromagnetic energy. The antenna coupled structure operates in the solar spectrum as a detector and energy harvester. This invention can be used for infrared detection at room temperature, as well as, IR and solar energy harvesting with efficiencies that have no theoretical limit.

Summary Bullets

- **Unlimited** — No limit to energy collection
- **Efficient Energy Collection** — Useful in Solar Spectrum

Solution Advantages

- **Unlimited** — No limit to energy collection
- **Efficient Energy Collection** — Useful in Solar Spectrum

Potential Commercial Applications

- Computer Engineering
- Military-Grade micro EM detectors
- IR detection
- IR and Solar Energy Conversion
- Biomedical applications

Background and More Information

Carbon nanotubes are a form of carbon, similar to graphite found in pencils. They are hollow cylindrical tubes and are 10,000 times smaller than human hair, but stronger than steel. They are also good conductors of electricity and heat, and have a very large surface area. CNTs can act as antennas for radios and other

electromagnetic devices. The use of carbon nanotubes in energy applications could improve the efficiency or reduce the cost of batteries, solar cells, and fuel cells.

Inventors

- Dr. Baratunde Cola
Associate Professor - Georgia Tech School of Mechanical Engineering
- Asha Sharma
Graduate Research Assistant - Georgia Tech School of Mechanical Engineering
- Virendra Singh
Graduate Research Assistant - Georgia Tech School of Mechanical Engineering

IP Status

<p>Patent application has been filed</p>: US61/716101

Publications

[GEEKOUT: Heating Up the Energy Sector with Baratunde Cola](#), -

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