



# NANOMATERIALS

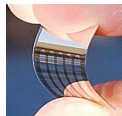
The Nanotechnology Center at the University of Arkansas at Little Rock (NCUALR) was established in 2006 to foster nanoscience and innovation, to serve the scientific community and industry through research and outreach, and to accelerate technological innovations into practical applications for society.



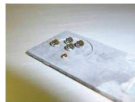
Nanotube-based antenna/sensor



Anticounterfeit security taggants



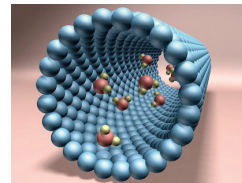
Organic solar cells



Superhydrophobic Coatings



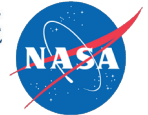
Electrodynamic dust screen



## Key Benefits

- ✓ Significantly increased antenna bandwidth
- ✓ Virtually impossible to replicate taggants
- ✓ Novel anti-icing approaches
- ✓ Completely transparent and flexible dust screens
- ✓ Flexible and low-cost solar cells

## PARTNERS & COLLABORATORS



US Army Corps of Engineers®  
Cold Regions Research and Engineering Laboratory



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nanoIMG

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Researchers at NCUALR have developed a wide variety of advanced nanomaterials such as nanotube inks, nanorods, thin films, and high-quality graphene sheets. Nanotube inks may be used to print on filters, solid substrates, transparent sheets, and flexible and transparent substrates. Nanorods may be used to alter surfaces so that they exhibit different properties such as not allowing water to deposit on the surface.

## Applications

### HIGHER YIELD ANTENNAS/SENSORS

Our nanotube-based antennas are flexible, cheap, and more efficient and can also act as sensors.

### ANTICOUNTERFEIT SECURITY TAGGANTS

These taggants have spectroscopic, magnetic, optical and/or electrical properties that can be incorporated into products individually or simultaneously.

### ANTI-ICING COATINGS

Thin films have a high-aspect ratio nano-texture to prevent the formation of ice.

### ELECTRODYNAMIC DUST SCREENS

Unseen to the human eye, carbon nanotubes can be applied to a multitude of surfaces to repel dust.

### ORGANIC PHOTOVOLTAIC DEVICES

Nanotube-based organic solar cells, though not as efficient as current technology, are simple to produce, cheaper, and greener.

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NCUALR has 4 issued patents, 27 patent applications, & 3 spin-off companies. We welcome new partners from business and industry!