

# Self-Assembled, Nanostructured Carbon for Energy Storage and Water Treatment

## Industrial Technologies Program Nanomanufacturing Project

### Nanotechnology Discovery



### Energy Storage for Production, Transmission, and Use

Ultracapacitor materials: low cost, high energy density



Market: grid stability, renewables, and transportation growth: 15-25%/year

### R&D to accelerate application:

- Optimize materials
- Improve economics
- Scale up manufacturing

### Demonstration & Deployment

Capacitive deionization systems

Energy-efficient desalination; treatment of industrial and produced water



250 TBtu/yr potential impact by 2015

### Energy-Efficient Treatment of Water – the next limited resource

## Honeywell

Honeywell Specialty Materials – Materials for ultracapacitors

## CAP

Campbell Applied Physics – Capacitive deionization systems for water treatment

### Industry Partners



U.S. Department of Energy  
Energy Efficiency and Renewable Energy

Bringing you a prosperous future where energy is clean, abundant, reliable, and affordable

## OAK RIDGE NATIONAL LABORATORY

MANAGED BY UT-BATTELLE FOR THE DEPARTMENT OF ENERGY