

National Nanotechnology Initiative

Nanotechnology Signature Initiatives

What is a Nanotechnology Signature Initiative?

Nanotechnology Signature Initiatives (NSIs) are multiagency initiatives designed to spotlight technology areas of national importance that may be more rapidly advanced through enhanced interagency coordination and collaboration.



Four current signature initiatives:

- Sustainable Nanomanufacturing
- Nanoelectronics for 2020 & Beyond
- Water Sustainability through Nanotechnology
- Nanotechnology for Sensors & Sensors for Nanotechnology

Nanotechnology for Sensors and Sensors for Nanotechnology Improving and Protecting Health, Safety, and the Environment

Enabling and overcoming barriers to the next-generation of biological, chemical, & nanoscale sensors.

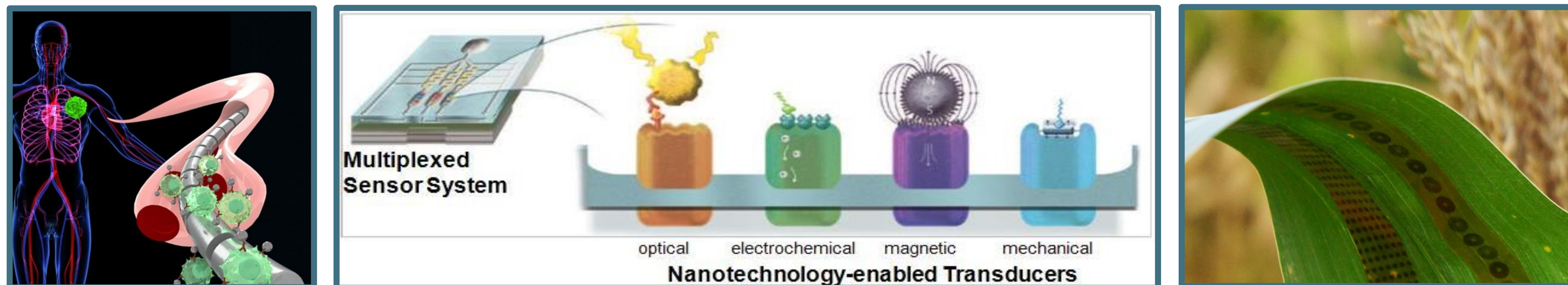


Photo credits, from left: Sam Gambhir, Stanford University Medical School; Jeff Morse, University of Massachusetts at Amherst; Liang Dong, Iowa State University

Sensors are part of our everyday world. Nanotechnology is enhancing the detection, sensitivity, specificity, and portability of physical, chemical, and biological sensors.



Photo credits, from left: John Rogers, Northwestern University; Daniel Heller, Memorial Sloan Kettering Cancer Center; Vaporsens (vaporsens.com)

Thrusts:

- Using nanotechnology and nanoscale materials to build more sensitive, specific, and adaptable sensors in order to overcome the technical barriers associated with conventional sensors
- Developing new sensors to detect engineered nanomaterials across their life cycles, in order to assess the potential impact on health, safety, and the environment



Water Sustainability through Nanotechnology Nanoscale Solutions for a Global-Scale Challenge

Aiding the development of technological solutions to alleviate current stresses on the water supply and provide methods to sustainably utilize water resources in the future.

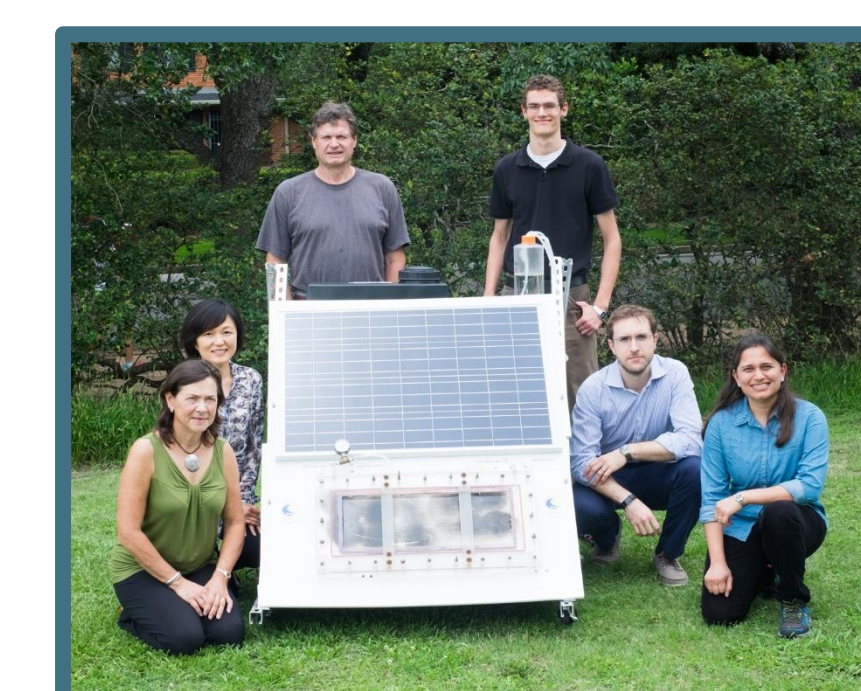
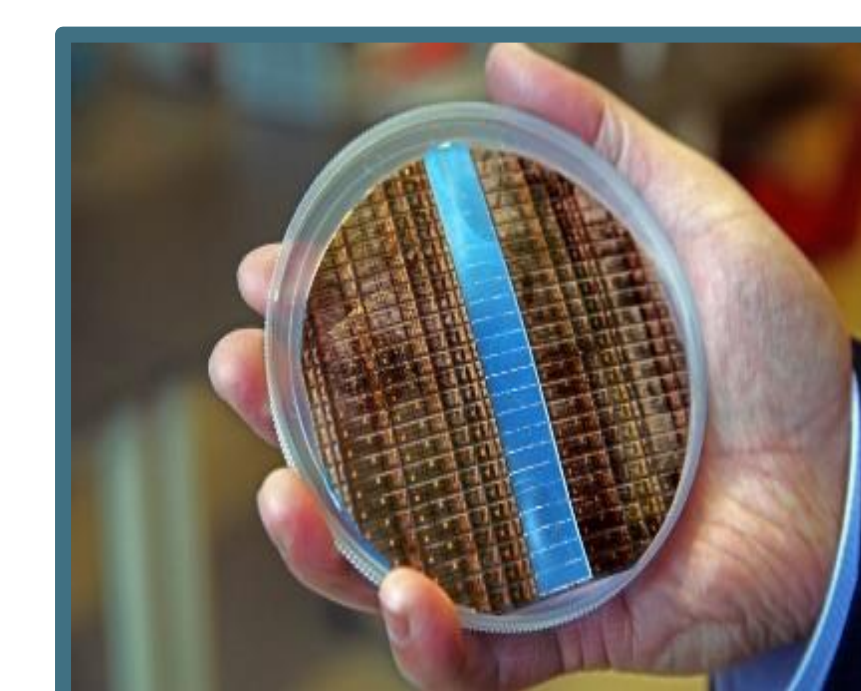


Photo credits, from left: U.S. Department of Energy; NanoAffix (nanoaffix.com); Rice University

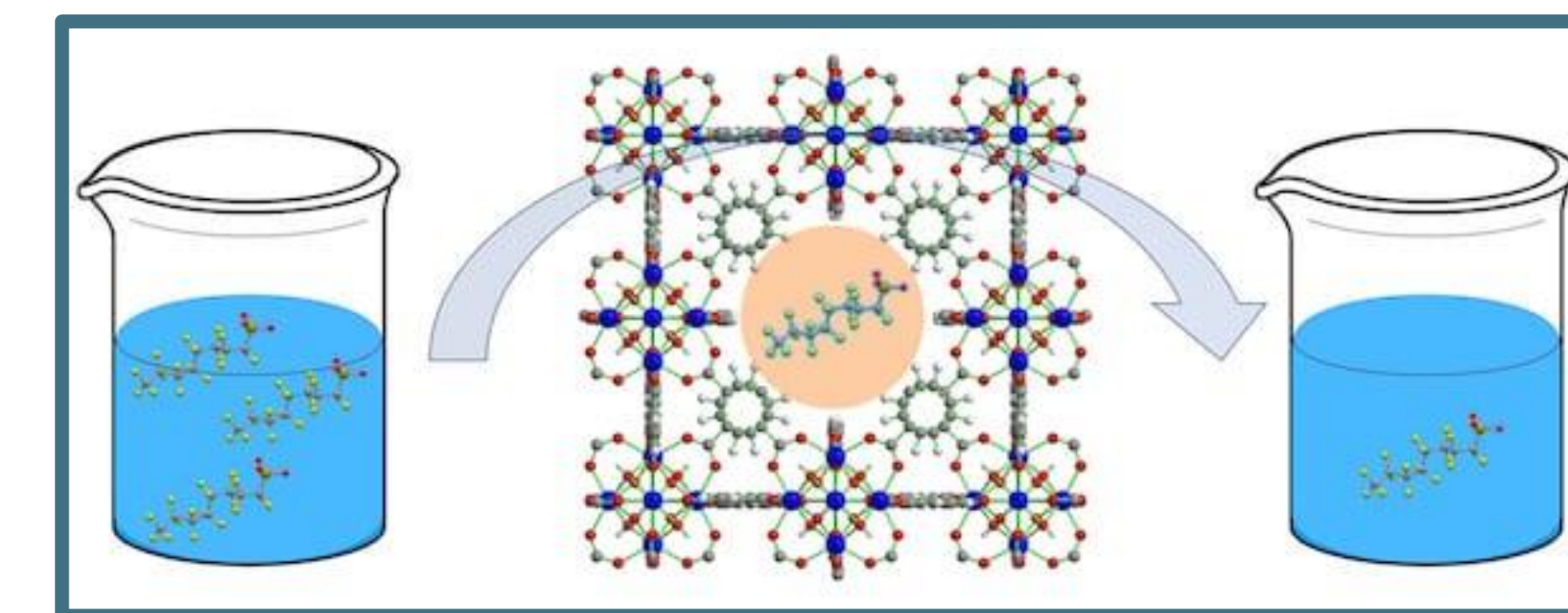
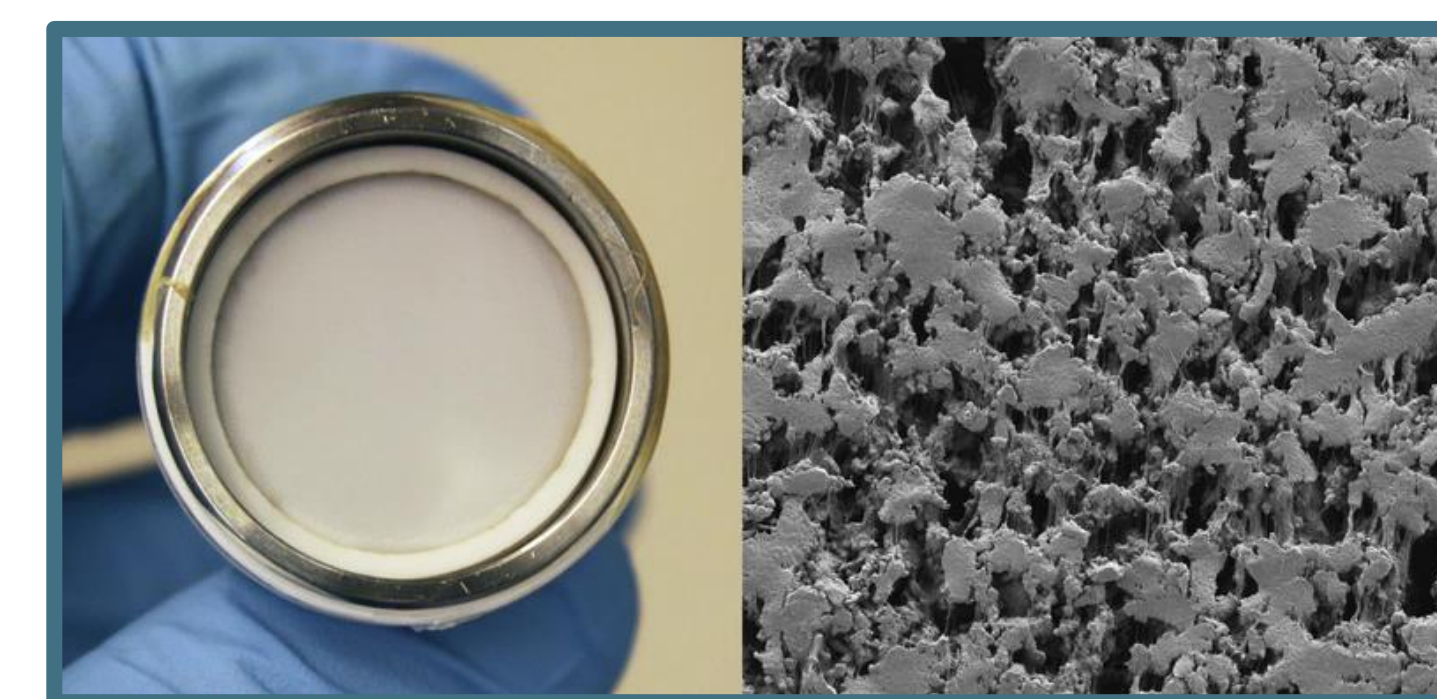


Photo credits, from left: Wyss Institute at Harvard University; Chelsea Clark, Rice University

Thrusts:

- Increase water availability using nanotechnology
- Improve the efficiency of water delivery and use with nanotechnology
- Enable next-generation water monitoring systems with nanotechnology

Participating agencies:



Engage with the NSI Community

- Public webinars
- Collaborative networks
- Informational sessions & town hall gatherings at technical meetings & conferences
- Federal/Industry/University partnerships

Sensors NSI Webinar Series

Nanotechnology for a New Generation of Gas Sensors:
An Industrial Perspective on Fundamental, Applied, and Commercialization Aspects

Dr. Radislav Potyrailo - GE Global Research



October 2, 2019
1:00 PM – 2:00 PM EDT



For more information on how to engage, go to nano.gov. For more information on the public webinars, go to: nano.gov/PublicWebinars.