Nanomaterials Applications Center

Nanotechnology

Nano is not about size as much as size is about nano. As the dimensions of objects shrink to the realm of sub 100mm, interesting things start to happen. The traditional properties that have been employed to design and build the objects in our world may not be the same! The point of change for some properties of a few materials has been determined, e.g., gold, with its "constant" melting point of 1064ºC, exhibits a decrease in melting point as the particle size shrinks below 10nm. The vast majority of material size-property changes are yet to be determined. Developing new products based on nano properties requires the ability to understand the behavior of the material at these sizes. The NAC researchers have experience in the nano realm. Products have been and are currently being developed by the researchers for member companies. Quick response teaming provides for rapid development of technology. Contact us to find out how we can assist in your technology development.

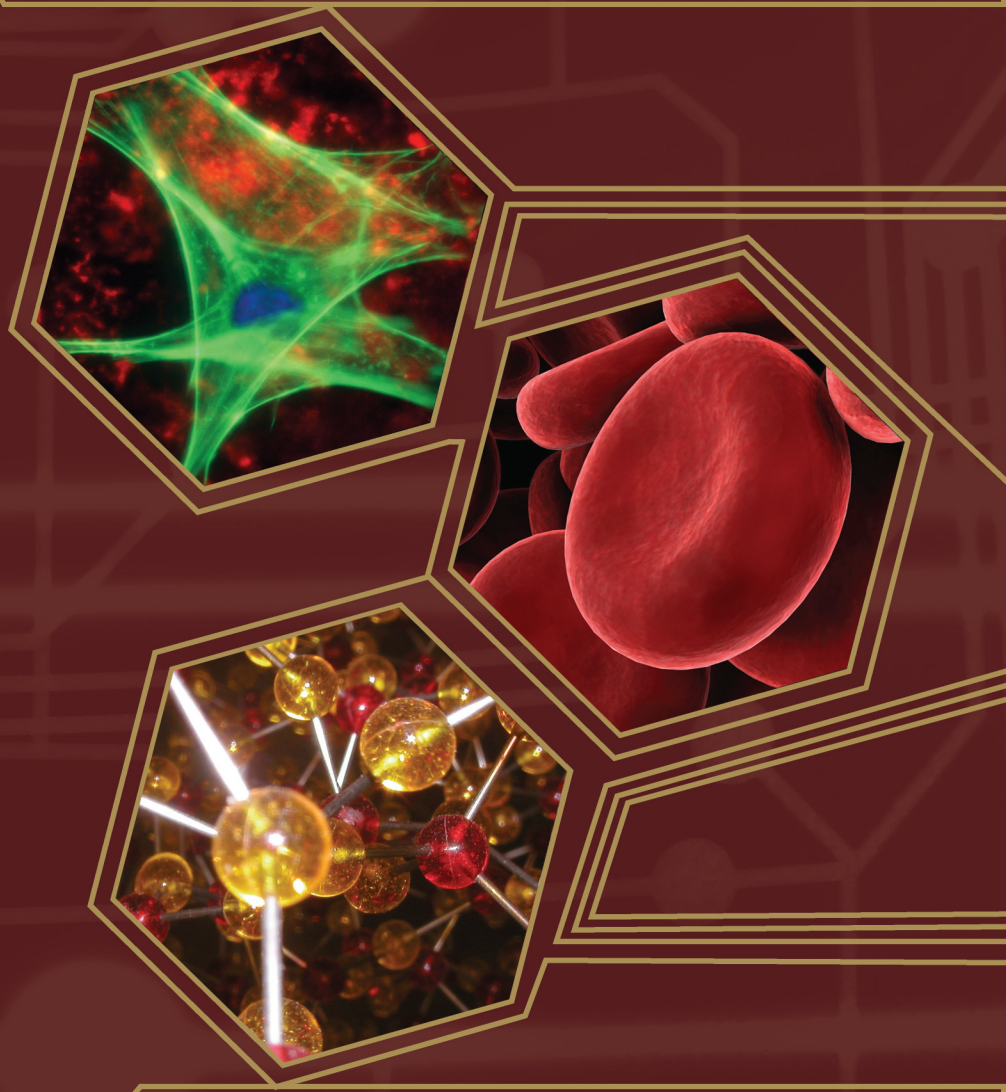
A Selection of Available Capabilities

Fabrication tools

- Optical and e-beam Lithography
- Plasma-enhanced chemical vapor deposition
- Physical vapor deposition
- Reactive ion-etching
- Oxidation/diffusion furnaces
- Thin film depositions

Characterization/Testing tools

- Atomic Force Microscope
- Scanning Electron Microscope
- Transmission Electron Microscope
- X-ray Crystallography
- IR, visible, UV, flame, atomic absorption, and interference spectrometers.
- 400 MHz FT NMR
- Simulated Solid Rocket Motor



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Texas State University-San Marcos, San Marcos, TX 78666

TEXAS STATE UNIVERSITY
SAN MARCOS
The rising STAR *of Texas* ™

Texas State University-San Marcos is a member of the Texas State University System.

Nanomaterials Application Center

The Nanomaterials Application Center at Texas State University (NAC) coordinates, facilitates, and expedites nanoscience and nanoengineering developments to drive commercialization of innovation that benefits society. The membership of the NAC consists of academic institutions, research organizations and for-profit corporations. The research efforts focus on all forms of nanotechnology, with efforts ranging from the fundamental understanding of the unique characteristics of the nano particles to applications that incorporate and leverage their unique properties.

Mission

The Nanomaterials Application Center coordinates, disseminates information, facilitates and participates in nanoscience and nanoengineering applications to expedite the commercialization of inventions.

Goals

- Enable collaboration and development of strategic partnerships among commercial organizations, high technology entrepreneurs, and academic researchers.
- Accelerate the development of high technology and the dissemination of these developments in order to expedite commercialization.
- Enhance the environment for emerging and existing technology companies by providing a base of scientists, engineers, and technicians who are fully cognizant of all aspects of the technologies and their applications.
- Develop an interactive collaboration of international academic institutions to provide a broad range of research expertise with a wide selection of leading edge experimental equipment.

Areas of Interest

The NAC is involved in all forms of nanotechnology. These range from nanocrystals and nanoclusters to carbon nanotubes; conducting, semiconducting, magnetic and superconducting nanomaterials, nanowires, and quantum dots; polymer-templated nanostructures; self-assembly and supramolecular assembly of biopolymer and biomimetic structures; molecular and nano-electronics and single electron devices; MEMS and NEMS devices; and reduced dimensionality and complex-structured materials.

Benefits of Membership with NAC

- Access to scientific know-how and advanced instrumentation for nanotechnology through Texas State's own laboratories and research centers.
- Access to other world-class institutes through Texas State's many academic partners.
- Access to a highly skilled, scientific workforce.
- Access to business and scientific expertise of the Center's partners.
- The capability to rapidly assemble multidisciplinary teams with a wide range of experimental, theoretical, and simulation skills.
- The ability to focus powerful resources on their immediate, critical path challenges.
- Specialized arrangements for acquiring technology services.
- Merging the strengths of private business, government, and academia in joint projects.

NanoExpress

NanoExpress is a monthly email publication of Nanomaterials Applications Center (NAC) at Texas State University-San Marcos. NanoExpress is devoted to providing information on technological advances, applications, and business news to nanotechnology professionals across the globe. Additionally, NanoExpress is the only magazine devoted to business and job creation through current and successful breakthroughs in nanotechnology.

Nanotechnology Colloquium Series

A cutting-edge series presenting and discussing issues related to the development, application and commercialization of nanotechnology. These leading edge presentations are held every other Monday. Please check the web site (www.nanotxstate.org) or the NanoExpress publication for details of speakers and topics. This long running series has recorded previous presentations and copies of selected topics can be acquired per instructions on the Colloquium page.

For more information, please visit the NAC website at www.nanotxstate.org or contact us.

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