

Nanotechnology Research

The Houston region is home to a plethora of other nanotechnology research facilities outside of Rice University.

- **University of Houston's Science and Engineering Research and Classroom Complex** is a new 200,000 square foot facility being built by world renowned architect Cesar Pelli, which will allow researchers from the Cullen College of Engineering and the College of Natural Sciences and Mathematics to closely collaborate on groundbreaking research in fields such as bionanotechnology, nano-lithography, materials, and optoelectronics. More than 10 federal agencies fund BioNano Technology research projects at the University of Houston, including the National Science Foundation (NSF), the National Institutes of Health (NIH), the U.S. Department of Energy and NASA.
- **University of Houston's Texas Center for Superconductivity** - The Nanoscale Materials and Applications division has programs in nanomagnetism, inorganic nanomaterials, bionano materials, and organic films and nanocomposites. A new initiative, the Houston International Materials Forum (HIMF), is being established to support an environment for the world's brightest minds to brainstorm selected crucial issues of current materials. It is anticipated that HIMF will become one of the world's leading venues for intellectual inquiry and exchange in HTS and complex materials.
- **University of Houston's Center for Nanomagnetic Systems** researches a range of topics related to the development and applications of novel magnetic materials and devices at nanoscale dimensions which are related to existing and future technologies such as disk drive storage and probe storage based on MEMS, Magnetic Random Access Memory (MRAM), and magnetic cellular logic.
- **University of Houston's Department of Chemistry and Biomolecular Engineering** does work in materials including superconductor synthesis, nanocomposite materials, novel materials for drug delivery, protein crystal growth, catalyst development, and the development of new biotech separations agents.
- **University of Houston's Center for Materials Chemistry (CMC-UH)** is the continuation of the Materials Center that was established by the National Science Foundation in 1996. Specific nanotechnology targets include the preparation of hybrid inorganic-organic nanoparticles and thin films and biologically active templates and nanostructures. Potential applications include lasing materials, light-harvesting devices, chemical and biological sensors, targeted drug delivery, and artificial skin and bone.
- **NASA's Texas Institute of Intelligent Bio-Nano Materials and Structures for Aerospace Vehicles (TiiMS)** brings together some of the top researchers in Texas and the world — including a Nobel laureate and several members of the National Academies — in biotechnology, nanotechnology, biomaterials and aerospace engineering to develop the next generation of bio-nano materials and structures for aerospace vehicles. TiiMS universities include Texas A&M University, Prairie View A&M University, Rice University, Texas Southern University, the University of Houston and the University of Texas at Arlington.
- **Center for Nanospace Technologies** is a private Houston, Texas-based, internationally focused, 501 (c) (3) nonprofit scientific research and education foundation chartered to conceive, establish, and conduct cutting-edge technology, research, and development in the areas of aerospace, education, energy, life sciences, and shipping & transportation.
- **Johnson Space Center's Carbon Nanotube Project** is focused on developing bulk nanotube production, purification and application of Single-Wall Carbon Nanotubes (SWNT). The goal of the project is to develop nanotube applications for use in human

space exploration. Because of their superior strength-to-weight ratio, SWNT composites are expected to reduce spacecraft weight by 50% or more. Other exploration applications include energy storage, life support systems, thermal materials, nanoelectronics, nanosensors, electrostatic discharge materials, and biomedical applications.

- **Houston Technology Center (HTC)** is the largest technology business incubator / accelerator in Texas and the center for technology entrepreneurship in Houston. HTC provides in-depth business guidance, access to capital, introduction to service providers and entrepreneurial education to client companies representing the following key sectors: Energy, Life Sciences, Nanotechnology, NASA-originating technologies and Technology.
- **Alliance for NanoHealth (ANH)** was initially formed by the five major research institutions in the Texas Medical Center, the first collaborative research effort to bridge gaps between medicine, biology, materials science, public policy, and nanotechnology. Member institutions include the Baylor College of Medicine, M.D. Anderson Cancer Center, Rice University, the University of Houston, The University of Texas Health Science Center at Houston, Texas A&M University and the University of Texas Medical Branch.
- **Baylor College of Medicine's Department of Molecular & Cellular Biology (MCB)** is recognized internationally for research in regulation of gene expression, hormone action, molecular genetics and gene therapy. Specific areas of research focus on nano-scale reproductive biology, developmental biology, neurobiology and cancer.