

NANO HIGHLIGHT

Nanomaterials Application Center Established

PIs: Walt Trybula, Ph.D., Gary Beall, Ph.D., Clois Powell, Ph.D., Greg Spencer, Ph.D.
Texas State University – San Marcos

The Nanomaterials Application Center (NAC), a collaborative effort between industry and universities, was established in early 2003. Efforts are directed at fundamental understanding of nano material properties and their incorporation into products that address specific needs. From the industry viewpoint, this effort trains scientists and engineers that can work in the nano realm. This training of people to think, develop new concepts, and create novel products is key to the university mission. NAC addresses the needs of both industry and academia as technology moves further into the nano realm.

Examples of current activities

- | | |
|------------------|--|
| Chemistry based: | 1) Improved material for transparent armor |
| | 2) Enhanced copper for increased uniformity |
| Physics based: | 3) Dense nanowires with positioning for memory |

The improved material for transparent armor achieves its properties through the incorporation of nano particles. Professor Beall has been the lead on this effort, which has demonstrated a superior material. The enhanced copper effort incorporating nanocomposites for increased uniformity is under the direction of Professor Powell. This work is directed at addressing the issues with copper line widths below 50nm. The work of Professor Spencer is directed at creating precise arrays of nanowires that have the capability of being developed for memory applications. Additional efforts involving the investigation and application of nano-based technology are being conducted at various NAC member institutions. Additional information is available through NAC.

NAC provides the necessary link between leading edge research and the companies who are trying to develop products in the nano realm. We have experts in physics, chemistry, and engineering at a number of universities who work as teams on challenging problems. One major issue with nano is that most small to medium sized companies do not have the capabilities to understand or even measure the nanomaterial properties. The universities have the tools and expertise to accomplish the required tasks. The collaborative effort enables the creative people at companies to move forward with plans for products that will succeed. Success is measured by the rapid commercialization of innovative ideas.

For more information on our efforts, please contact us directly. Inquiries by potential new members are always welcome. Collaboration is the key to progress in the nano realm.

References (10 point font)

[1] For further information about these projects link to <www.nanotxstate.org> or email <w.trybula@txstat.edu>