The collapse was attributed to a design deficiency that resulted in a gusset plate failing during ongoing construction work.

Now, an interdisciplinary team of researchers at the University of Delaware is developing a novel structural health monitoring system that could avert such disasters in the future.

Erik Thostenson and Thomas Schumacher, both affiliated faculty members in the UD Center for Composite Materials, have received a three-year $300,000 grant from the National Science Foundation to investigate the use of carbon nanotube-based sensing composites for structural health monitoring of civil infrastructure.

In preliminary research, the two found that a carbon nanotube hybrid glass-fiber composite attached to small-scale concrete beams formed a continuous conductive skin that is exceptionally sensitive to changes in strain as well as to the development and growth of damage.

Click here to read the entire story in UDaily
Advani Named ME Department Chair

Suresh Advani, George W. Laird Professor, has been named chair of UD’s Department of Mechanical Engineering. Advani is also associate director of the Center for Composite Materials, a position he has held since 2000.

Advani joined the UD faculty in 1987 after earning a bachelor’s degree in mechanical engineering from the Indian Institute of Technology in Bombay, India, and a doctorate from the University of Illinois at Urbana-Champaign.

“My goals as chair include mentoring young faculty and building stronger interdisciplinary ties for research in areas such as composites, energy and biomechanics,” Advani says. “I also want to increase interactions with local industry so that we can expand our opportunities for collaborative research, student internships, and senior design projects.”

Advani’s research interests are in materials and processing, rheology, fluid mechanics and heat transfer as applied to composite processing, and alternate energy sources such as fuel cells and hydrogen storage.

He has co-authored over 200 journal articles and has contributed chapters to over twenty books. He also co-authored a recent text, Process Modeling in Composites Manufacturing.

Advani is a Fellow of the American Society of Mechanical Engineers and is the North American Editor for the journal Composites A: Applied Science and Manufacturing. He has graduated over 70 master’s and Ph.D. students and was awarded the Outstanding Doctoral Graduate Student Advising and Mentoring award in 2008.

2012 Fall Lecture Series

The Department of Chemical and Biomolecular Engineering is hosting its 2012 Fall Lecture Series, featuring the work of distinguished researchers from prestigious institutions across the country.

All lectures take place at 10:00 a.m. in Room 102 Colburn Laboratory. The lectures are free and open to the public. Refreshments will be served 15 minutes prior to all lectures.

Click here for the full schedule.
CCM Doctoral Student Receives TRFA Award

Gaurav Pandey, a Ph.D. student in mechanical engineering, has received an Honorable Mention in the 2012 Thermoset Resin Formulators Association (TRFA) Excellence in Thermoset Polymer Research Award competition for his paper “Smart Tooling for Thermoset Polymer Based Fiber Composites,” which was co-authored by E. Thostenson and D. Heider.

In addition to receiving an award certificate and a gift card, Pandey will have his technical paper posted on the TRFA website and included on the CD of conference proceedings that will be presented to all attendees of the TRFA 2012 Annual Meeting. He has also been invited to provide a poster of his research for display at the TRFA Tabletop Showcase on October 29th.

CCM Founding Fathers Portraits On Display

These amazingly life-like portraits of the CCM Founding Fathers, Prof. Tsu-Wei Chou, Prof. Jack Vinson, Prof. Byron Pipes, and the late Prof. Roy L. McCullough were painted by artist Lisa Bartollozzi. Lisa’s work has been presented in a number of solo exhibitions, including shows in Wilmington, Philadelphia, New York and Florence, Italy.

Hung on September 12, 2012, the paintings can be found in the upstairs lobby of The Composites Manufacturing Science Laboratory.
Out of this world

UD professor reports smart fluids research in scientific journal

7:53 a.m., Sept. 18, 2012--Imagine a computer chip that can assemble itself.

According to Eric M. Furst, professor of chemical and biomolecular engineering at the University of Delaware, engineers and scientists are closer to making this and other scalable forms of nanotechnology a reality as a result of new milestones in using nanoparticles as building blocks in functional materials.

Furst and his postdoctoral researchers, James Swan and Paula Vasquez, along with colleagues at NASA, the European Space Agency, Zin Technologies and Lehigh University, reported the finding Sept. 17 in an article in the Proceedings of the National Academies of Science (PNAS) online edition.

Entitled “Multi-scale kinetics of a field-directed colloidal phase transition,” the article details how the research team’s exploration of colloids, microscopic particles that are mere hundreds the diameter of a human hair, to better understand how nano-“building blocks” can be directed to “self-assemble” into specific structures.

The research team studied paramagnetic colloids while periodically applying an external magnetic field at different intervals. With just the right frequency and field strength, the team was able to watch the particles transition from a random, solid like material into highly organized crystalline structures or lattices.

According to Furst, a professor in UD’s Department of Chemical and Biomolecular Engineering, no one before has ever witnessed this guided “phase separation” of particles.

“This development is exciting because it provides insight into how researchers can build organized structures, crystals of particles, using directing fields and it may prompt new discoveries into how we can get materials to organize themselves,” Furst said.

Article by Karen B. Roberts

Click here to read the entire story in UDaily.
**NEW PUBLICATIONS**

**Journals**


**Conferences**


Keep a look out for the October 2012 Composited Update, which will highlight the impressive new capabilities CCM has acquired over the past year.

DONT MISS IT!
We would like to thank all of our current consortium members for continuing to participate in our research and development activities.

To learn more about the benefits of becoming a member, please visit us on the web at www.ccm.udel.edu/Consortium/benefits.html