Nanotube research is conducted by Tsu-Wei Chou (left), Pierre S. du Pont Chair of Engineering, and Erik Thostenson, assistant professor of mechanical engineering





Richard Wool, professor of chemical engineering, Director of ACRES (Affordable Composites for Renewable Research), and winner of the 2011 ACS Affordable Green Chemistry Award



Faculty Positions in Composites

The College of Engineering at the University of Delaware invites nominations and applications for tenure-track faculty positions. Highly qualified candidates will be considered at the level of assistant, associate professor and full professor (tenure or tenure-track).



December 2010

The Cluster Hiring will span multiple years until all positions are filled. We are interested in candidates in any general areas of composites, but are looking to significantly expand in the areas of design, multi-scale structural analysis, processing and manufacturing, automation and health monitoring of novel composites with emphasis on multifunctional, adaptive and functionally graded materials and structures. The appointment of the selected candidate will be in one or more of the following departments, Mechanical Engineering, Chemical Engineering, Material Science and Engineering, Civil and Environmental Engineering and Electrical and Computer Engineering. Joint appointments across departments will be considered. The selected candidates will enjoy the full benefits of being designated an affiliated faculty of the Center for Composite Materials (CCM). CCM, founded in 1974, has been designated a Center of Excellence in Composites continuously since 1985 by NSF, ARO, ARL and ONR. CCM has state of the art facilities for synthesis, thermal, chemical and mechanical characterization, processing, inspection, manufacturing science and modeling and simulation that are housed in two buildings providing more than 50,000 sq ft of laboratories and office space available for affiliated faculty and students. CCM currently involves more than 240 affiliated faculty, professional staff, post-docs, graduate and undergraduate students and interns from three colleges and seven departments. CCM also enjoys strong industrial support with more than 60 companies participating in our industrial consortium.

Prof. of physics &

astonomy John Xiao

Nowak, one of the

center's principal

investigators

(seated), director of the UD

Center for Spintronics and

Biodetection with Edmund

University of Delaware Center for Composite Materials



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Annual research expenditures are in the \$10-12M range with more than \$100M in funding currently awarded. Applicants should hold a Ph.D. in engineering, or closely related field. Successful candidates at the Assistant Professor level are expected to have demonstrated excellence in innovative research and show the potential for high quality teaching and mentoring. For positions at higher ranks, an outstanding and internationally recognized research program, along with proven high-quality teaching and mentoring, is required. Candidates with proven leadership experiences in major research and education initiatives are of great interest.

Applicants should send a curriculum vitae, a statement of research and teaching interests and achievements, and a list of at least four references to <u>http://www.engr.udel.edu/facultysearch</u> (preferred); or by mail to Composite Cluster Faculty Search Committee, 120-122 E. Delaware Avenue, University of Delaware, Newark, DE 19711.

The University of Delaware is an equal opportunity employer. Women and minorities are encouraged to apply. If you have any questions, please contact Professor Suresh Advani at <u>advani@udel.edu</u>.

Established in 1974, the Center for Composite Materials is an internationally recognized hub for composites research, education, and technology transfer. CCM has been designated a Center of Excellence in Composites continuously since 1985 by the National Science Foundation, the Army Research Office, the Army Research Laboratory, and the Office of Naval Research.

CCM offers a broad range of benefits to affiliated faculty:

• State-of-the-art facilities for synthesis; thermal, chemical and mechanical characterization; processing; inspection; manufacturing science; and modeling and simulation housed in two buildings comprising 50,000 square feet

• More than 240 affiliated faculty, professional staff, post-docs, graduate and undergraduate students and interns from three colleges and seven departments

· Joint appointments to foster an intellectually stimulating interdisciplinary environment

• A model undergraduate research program that serves some 60 students every year, providing them with real-world problems and interactions with composites scientists and engineers working for industry and government

· Graduate students who are actively involved in materials professional societies

• More than 60 current industrial sponsors, ranging from small local businesses to major corporations, whose representatives work closely with CCM faculty, students, and research staff

Affiliation with a thriving College of Engineering that has grown from 90 faculty to more than 130 over the past few years
New campus buildings and campuses under development:

 Interdisciplinary Science and Engineering Laboratory (ISE-Lab) that will promote integration of science into the curriculum and house research institutes focused on energy and the environment

• Science & Technology Campus on the site of the former Chrysler assembly plant in Newark that will house new activities with the nearby Army Research Laboratory as well as new small business ventures expected to spin off from University research

COMPOSITES UPDATE December 2010

Delaware has Strong Presence in Wind Energy

CCM's Dirk Heider and John Tierney recently attended the American Wind Energy Association (AWEA) Conference in Atlantic City, NJ in October, 2010.

"The event was a great opportunity to showcase the entire state of Delaware in terms of its efforts in offshore wind," Heider says, "including the University of Delaware's research strengths and the capabilities and optimum location of the Port of Wilmington."

UD and Gamesa Technology Corporation recently joined forces to install a utility-scale two-megawatt wind turbine at the University's Hugh R. Sharp Campus in Lewes. The joint venture, First State Marine Wind, is a partnership between UD-owned Blue Hen Wind and Gamesa USA.

The partnership is the result of synergies that emerged from wind research being conducted at UD's College of Earth, Ocean, and Environment and its College of Engineering, the State of Delaware's interest in offshore wind, the City of Lewes' interest in innovative energy opportunities, and Gamesa's interest in improving its understanding of the effects of marine conditions. (from left) Stephanie McClellan PhD, DNREC, John Haroldson, Port of Wilm, John Pastor, Dept of State, Barbara Dehaven, DEDO, John Tierney PhD, UD-CCM, Dirk Heider PhD, UD-CCM, and Tom Keefer, Port of Wilmington



There is strong interest from European and U.S. wind turbine suppliers to build up East Coast operations to supply proposed wind farms, and Delaware is in an ideal position to contribute—from materials research to testing and implementation.

A team from UD, including Heider, recently met with Del. Gov. Jack Markell in China to discuss potential collaboration with a Chinese wind company in the State of Delaware.

COMPOSITES UPDATE December 2010

NEWS NEWS

Creating jobs is Governor Markell's top priority," says Barbara DeHaven, Business Development Manager in the Delaware Economic Development Office, "and he sees offshore wind as an industry that can not only bring near-term jobs, but also transform Delaware's economy in the long run, providing good-paying, skilled employment opportunities. Delaware has a strong, pro-business environment, a highly competitive tax structure, access to a skilled and highly educated workforce, and a strategic location that makes it a primary candidate for companies to locate here. Delaware understands the needs of the wind industry-from power purchasing to supply chain to policies."

Article by Diane Kukich



The BEST PLACE to enter the emerging U.S. offshore wind market

College of Engineeering Proudly Welcomes 17 New Faculty

A fall reception was held for all new College of Engineering Faculty on September 16, 2010, during which presentations were given by new faculty to current faculty. Held in the Gore Recital Hall at the Roselle Center for the Arts, the event was followed by an open reception for all faculty, staff, spouses and significant others.



<u>Please click here</u> to watch a video of this historic event, featuring remarks by College of Engineering Dean Michael Chajes and UD Provost Tom Apple. (*Run time: 1:14:25*)

New faculty members are: Wilfred Chen, James Clause, David Colby, Juejun Hu, Feng Jiao, Michael Klein, April Kloxin, Christopher Kloxin, X.Lucas Lu, Julia Maresca, Ioannis Poulakakis, Thomas Schumacher, Hagit Shatkay, Karl Steiner, Jonghwan Suhr, Kristina Winbladh, and Chengmo Yang.

COMPOSITES UPDATE December 2010

UDaily Article

UD doctoral programs rank among nation's best in National Research Council assessment

3:56 p.m., Sept. 28, 2010 - The University of Delaware's doctoral programs in biomechanics and movement science, chemical engineering, linguistics and cognitive science, materials science and engineering, and mathematics rank among the top graduate programs in their fields in the United States, according to the latest assessment by the National Research Council (NRC).

The NRC's Data-Based Assessment of Research-Doctorate Programs, released Sept. 28, uses



new statistical sampling methods to present ranges of rankings, which take into account some 20 variables, from faculty productivity to graduate placement. The measures are based on data from the 2005-2006 academic year that were submitted to the NRC in 2006 from 5,000 programs at 212 universities, spanning 62 fields.

All five of UD's top-rated doctoral programs also won high scores for research activity, a major category that considered average number of publications by the faculty, the average number of citations of those publications, the percent of faculty with grants, and faculty awards.

Click here to view entire story in UDaily.

Paulo de Freitas, Jr. (right), recent UD doctoral alumnus in biomechanics and movement science, with doctoral adviser Prof. Slobodan Jaric. The two are developing a diagnostic device that can measure hand function more precisely than ever before and serve as an early detection tool for multiple sclerosis and other neurological disorders.

Photo courtesy of UDaily

COMPOSITES UPDATE December 2010

CONSORTIUM MEMBERS

We would like to thank **SABIC Innovative Plastics US LLC**, Exton, PA, for becoming our newest Consortium Member. We would like to thank **SURVIC Engineering**, Belcamp MD, for the recent renewal of their consortium membership, and for continuing to participate in CCM's 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**

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Celebrating 35 years of significant contributions to composites science and technology, the education of students, and the creation and transfer of technology to industry.

This is a newsletter publication of the University of Delaware Center for Composite Materials Please visit us on the web at <u>http://www.ccm.udel.edu</u>

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