

COLLEGE OF ENGINEERING

DEPARTMENT OF ELECTRICAL ENGINEERING

PENNSTATE



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Did you Know?

You can find classmates through the Penn State Alumni Association if you are a member.
<http://www.alumniconnections.com/olc/pub/PST/homepage.cgi>

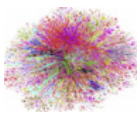
The Electrical Engineering Alumni Association has a LinkedIn page listed as SPSEE.
http://www.linkedin.com/groups?home=&gid=717427&trk=anet_ug_hm

Heath Hofmann, associate professor of electrical engineering, was featured in President Graham Spanier's State of the University Address.
<http://president.psu.edu/sou/articles/sou2009.html>

The Penn State Bookstore sells College of Engineering golf shirts.
Visit the store when you're in town - not available online yet.

The Electrical Engineering Magazine goes to press this month.
To get your copy in the mail, please forward your address to cls118@psu.edu.

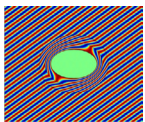
DEPARTMENT RESEARCH AREAS



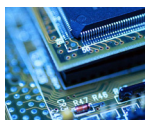
Communications and Networking



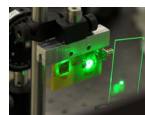
Control Systems



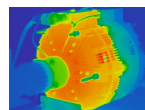
Electromagnetics



Electronic Materials and Devices



Optical Materials and Devices



Power Systems



Remote Sensing and Space Systems



Signal and Image Processing

NEW FACULTY POSITION CREATED

Uncontrolled climate change due to unconstrained use of fossil fuels presents a daunting future. In considering the various energy options, the sun is the clear champion providing the earth with enormous amounts of natural energy. The known tool for directly converting solar energy into a useful form is semiconductor photovoltaic devices, which convert the electromagnetic field energy in sunlight to electrical energy. While historically a 'niche' technology, solar cell technologies are becoming extremely important as a means for providing large scale carbon free energy.

The Penn State Institutes of Energy and Environment is supporting the hiring of a new faculty member in the area of photovoltaics. This new position will support cooperative efforts among the Departments of Electrical Engineering, Chemistry, Architectural Engineering, and Energy and Mineral Engineering, although it will be housed and co-funded in the Department of Electrical Engineering.

The department is currently seeking candidates for this tenure-track position with expertise in the areas of third generation photovoltaics; organic and flexible photovoltaics; and light-matter interactions at the nanoscale, nanophotonics, and plasmonics. We are excited about the potential of having such expertise in our department and look forward to the interdisciplinary approach needed to make this successful.

Alumni Involvement in the Department

Our department alumni association is kicking off the academic year with a meeting in October. At this meeting, the group will outline their plans for interacting with students, faculty and alumni. There are several student activities which involve alumni and/or corporate sponsors. A complete list of these activities and how you can become an active part of these activities will be included in the November newsletter. Please consider becoming involved. In a survey of the students in spring, many of our undergraduate students indicated that they wanted to have more contact with alumni. They are interested in learning more about the career paths available and any side roads you may have taken. We would like to hear your stories, so that we can share them with our students. If you have time to impart your wisdom on these fresh young minds, please contact Cathy McClellan, cls118@psu.edu, 814-863-0253.

Are there other ways to become involved? You bet.

We are always looking for donations, sponsorships, and student support. Can't give enough to make a difference? It all makes a difference. You can sponsor a monthly newsletter, provide some much needed lab equipment for one of our student learning labs, or donate to a scholarship fund for our undergraduate or graduate students. The list is long; the possibilities are endless. Contact Greg Laur, gLaur@enr.psu.edu, 814-865-0299 or Cathy McClellan, cls118@psu.edu, 814-863-0253.



Department Head Ken Jenkins with Yong Wang, who received his Ph.D. under the direction of Professor Qiming Zhang

THE INTERNATIONAL CENTER FOR ACTUATORS AND TRANSDUCERS

The 56th ICAT/JTAS Joint International Smart Actuator Symposium will be held on Oct. 6-7 at The Penn State Conference Center Hotel. The focus will be on compact and simple structured solid state actuators and integrated sensors.

You are invited to attend this symposium to share knowledge of current progress made in actuator/transducer materials, device designs and applications. If you are interested in presenting a poster at this symposium, please contact the symposium organizer as soon as possible. Company exhibitions and posters are also welcome.

Visit the conference Web site for registration and lodging information: <http://www.mri.psu.edu/centers/icat/news.asp>

STUDENT SPOTLIGHT

Ali Enteshari is optimistic about his future as well he should. Originally from Iran, Enteshari earned his bachelor's and master's degrees in electrical engineering from Sharif University of Technology in Tehran-Iran. Upon graduation, he accepted a position as a senior engineer at MicroModje Industries in Tehran, a telecommunication products and services company. Enteshari then joined the Advanced Technology Information Processing Systems Laboratory at the University of Calgary in Canada in 2003 as a research assistant. These experiences focused Enteshari's research efforts and solidified his interest in returning to academia to further his education.



In August 2006, Enteshari came to Penn State pursuing a Ph.D. degree in electrical engineering. He joined the Center of Information and Communications Technology Research which is directed by **Mohsen Kavehrad**, W.L. Weiss Professor of Electrical Engineering. Kavehrad was the thesis co-adviser for Enteshari's adviser at Sharif University in Tehran. Penn State was thus a natural choice for Enteshari. "The electrical engineering department has a very good reputation. I have some friends who graduated from Penn State and now have positions at prestigious companies. In addition, I was familiar with Professor Kavehrad's work and reputation," commented Enteshari.

Enteshari started his research on ultra high-speed data transmission over standard twisted pair copper cables after his first semester at Penn State. This research, supported by Nexans Inc. for leading edge wired line communication systems, has attracted many leading telecommunication industries and academia. His paper on this work won the best paper award at the DesignCon 2009 conference, Santa Clara, CA, which is a highly prestigious conference among the leading industries such as IBM, Intel, Cisco, Infinioen and many others. This award goes to papers which make a substantial contribution to the educational mission of DesignCon, reporting on important results, methodologies, or case studies of special significance.

In addition, his research at Penn State earned Enteshari the electrical engineering department's Melvin P. Bloom Outstanding Doctoral Research Award. Upon earning his Ph.D. this fall, Enteshari will join Starkey Labs at its world headquarters in Eden Prairie, MN, as a Digital Signal Processing Engineer.

UPCOMING EVENTS:

Oct. 2: SPSEE Meeting, Nittany Lion Inn, 3 p.m.

Oct. 6-7: Smart Actuator Symposium

Oct. 17: Homecoming Tailgate, Space 1109, 10:30 a.m.

FACULTY NEWS

Sven Bilén, associate professor of electrical engineering, was recently elected to the grade of associate fellow in the American Institute of Aeronautics and Astronautics.

Iam-Choon Khoo, William E. Leonhard Professor of Electrical Engineering, presented a keynote plenary invited paper at the 7th International Symposium on Modern Optics and Applications (ISMOA) on Sept. 14, held at the Institut of Technology, Bandung, Indonesia. The subject of his presentation was "Liquid Crystals." While there, he also gave two tutorial lectures on liquid crystal-line material physics and optical applications in an adjoining Workshop. ISMOA is sponsored by the Optical Society of America and the Abdus Salam International Centre for Theoretical Physics, Trieste, Italy.

Raj Mittra, professor of electrical engineering, presented four papers

at a conference in Korea in August. The titles of the papers are: "Some Recent Developments in the Design of Platform-Tolerant RFID Tags", "Characteristic Basis Function Method (CBFM)—An Iteration-Free Domain Decomposition Approach in Computational Electromagnetics", "Small Antenna Design for UWB, Sensors, RFID Tags and Other Applications and Their Performance Enhancement Using EBGs and Metamaterials" and "GEMS: A general-purpose EM simulation software for solving Antennas, EMI and EMC problems and its Benchmark-performance Comparison with other leading commercial EM solvers"

Doug Werner, professor of electrical engineering, presented an invited paper titled "A Novel Miniature Wideband Stacked-Patch Antenna Design using Matched Impedance Magneto-Dielectric Substrates" at the Metamaterials 2009 Conference held in London, England on Aug. 30-Sept. 4. Werner co-authored this paper with Frank Namin, Zikri Bayraktar, Tom Spence, Micah

Gregory, Ping Werner, and Elena Semouchkina. A second paper co-authored by Werner, Elena Semouchkina and Carlo Pantano titled "An Optical Cloak Composed of Identical Chalcogenide Glass Resonators" was also an invited paper.

Qiming Zhang, Distinguished Professor of Electrical Engineering, gave an invited plenary lecture titled "Polarfluoropolymer Based Capacitors with Ultrahigh Energy Density" at the 9th International Conference of Properties and Applications of Dielectric Materials in China in July.

Zhang also gave an invited presentation titled "Multifunctional Electroactive Polymer Devices" at the International Meeting of Ferroelectrics in China in August.

Zhang gave an invited presentation titled "Solid State Micro-Cooling Devices Based on Giant Electrocaloric Effect" at the

International Symposium of Integrated Ferroelectrics in Colorado Springs, CO in September.

FACULTY SPOTLIGHT

We welcome our newest faculty member, **Vishal Monga**, assistant professor, in the Department of Electrical Engineering. Originally from India, Monga received his M.S. and Ph.D. degrees from the University of Texas at Austin. He spent four years as a member of the research staff at Xerox Research Center and Labs in Webster, NY and Palo Alto, CA. His experience in research involved the development of novel color transformations, color profiles, document processing, and digital imaging technologies.

As a member of the Signal and Image Processing Research Area, Monga is currently teaching Introduction to Digital Signal Processing. His research centers on detection and optimization theory and their applications in statistical signal and image processing; and in multimedia security including anti-piracy and content authentication.

Monga benefited from his work in corporate research labs by working on projects with real world applications in areas of high impact such as security, color printing and display. His move to Penn State was motivated by a desire to return to the academic world along with the reputation of the signal processing area of the electrical engineering department at Penn State. Monga stated, "The



department has excellent breadth in signal processing. I will be able to add to it with a focus on strong computational approaches to imaging and multimedia signal processing problems which will both bring added diversity to the program as well as strengthen the underlying research base."

Monga is an active member of IEEE and has served on program committees and journal editorial boards as well as fulfilled leadership positions in the local chapter in NY. Among his many honors, Monga received the Young Engineer of the Year Award in 2007 from the Rochester Engineering Society, the Society for Imaging Science and Technology Raymond Davis Scholarship in 2004, and the President's Silver Medal at the Indian Institute of Technology in 2001.

In his spare time, Monga writes poetry (some of which have been published) as well as essays on contemporary philosophy. He also enjoys western classical music especially Beethoven. Monga and his wife, Nimisha, live in State College.

SOCIETY OF PENN STATE ELECTRICAL ENGINEERS

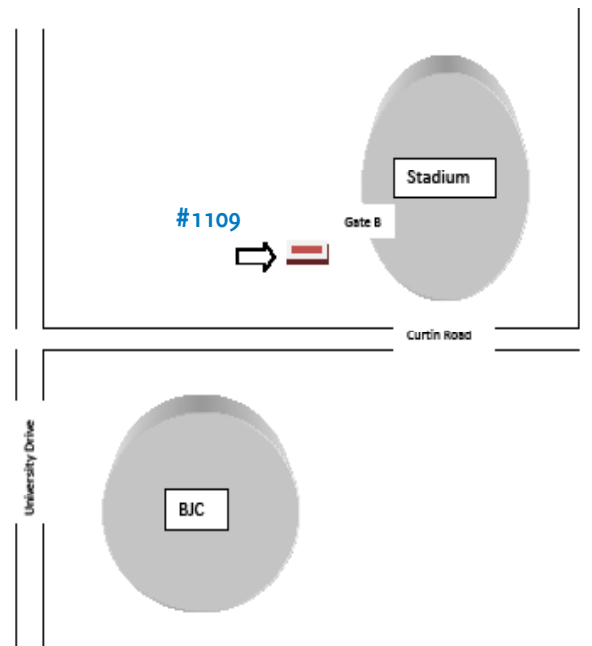
Meeting and Reception

The Society of Penn State Electrical Engineers (SPSEE) kicks off the 2009-2010 academic year with a meeting and reception on **Oct. 2** at the Nittany Lion Inn. The meeting will be held in the The Penn State Room from **3-5 p.m.** Items on the agenda will include the activities of the three committees, news on the state of the department, and a presentation by Professor **Thomas Jackson**. A reception will follow from **5-7 p.m.** Please RSVP to Cathy McClellan cls118@psu.edu or call 814-863-0253.

Homecoming Tailgate

A homecoming football tailgate for alumni, faculty, and staff will be held on **Oct. 17** prior to the game beginning at **10:30 am**. Kick-off is 3:30 p.m. We will be located at RV parking space **1109** which is the first row of RV's west of the stadium on the paved lot near Gate B. The parking space for our tailgate has been generously donated by Electrical Engineering alum, **Joe Sullivan**. Please see the map for location. While an RSVP is not needed, it would help with the planning: Cathy McClellan cls118@psu.edu or call 814 863-0253. **Please stop by!**

Map to tailgate site on Oct. 17



ALUMNI NEWS

You never know where you'll find Penn State Engineering Alumni

Chris Barber, research associate in acoustics at Penn State's Applied Research Lab (ARL) and an electrical engineering instructor, spent a week this summer participating in acoustic testing of U.S. Navy ships at the Navy's Atlantic Test and Evaluation Center in Andros Island, Bahamas, to gather data for a Penn State ARL computational modeling and simulation project. The testing was conducted aboard three U.S. Navy destroyers, the USS Roosevelt (DDG 80), the USS Oscar Austin (DDG 79) and the USS Winston S. Churchill (DDG 80) while operating with the range vessel Ranger.

Once onboard, Barber discovered that the USS Winston S. Churchill was commanded by a Penn State electrical engineering alum, Commander **Fred Pyle**, BSEE 1990. In addition to Barber's team, there were several Penn Staters on board the Ranger as well, including **Glenn Eckenrode**, BSME 2002 from the Naval Surface Warfare Center.

As the destroyer made a close approach to the range vessel during one of the test runs, Capt. Pyle used the ship's loudspeaker to greet the team aboard Ranger with a rousing "We Are" -- which was answered by Ranger with an equally enthusiastic "Penn State." Barber commented that "the test turned out to be very successful. It's always great to run into Penn State alumni doing well, especially when they happen to command a guided missile destroyer."

Updates

Robert D. Goldblum, BSEE '61 (University Park) and MSES '68 (Great Valley) founded two businesses during his career, an engineering publishing company and an engineering services company, which he sold ten years ago when he retired. He is a life fellow of IEEE and continues to be active in professional society activities serving on the board of directors of the EMC Society. He currently resides in Palm Beach Gardens, FL. Bob is interested in hearing from classmates. His email address is: rgoldblum@comcast.net.



Do you have any news to share?

Do you have a great Penn State story?

Send to: Cathy McClellan, cls118@psu.edu

Contact Information:

Department of Electrical Engineering, 121 Electrical Engineering East, University Park, PA 16802, Phone: 814-865-7667, FAX: 814-865-7065

Web: www.ee.psu.edu

Please submit news items to: Cathy McClellan at cls118@psu.edu

This publication is available in alternative media on request.

Penn State is committed to the affirmative action, equal opportunity, and the diversity of its workforce.

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