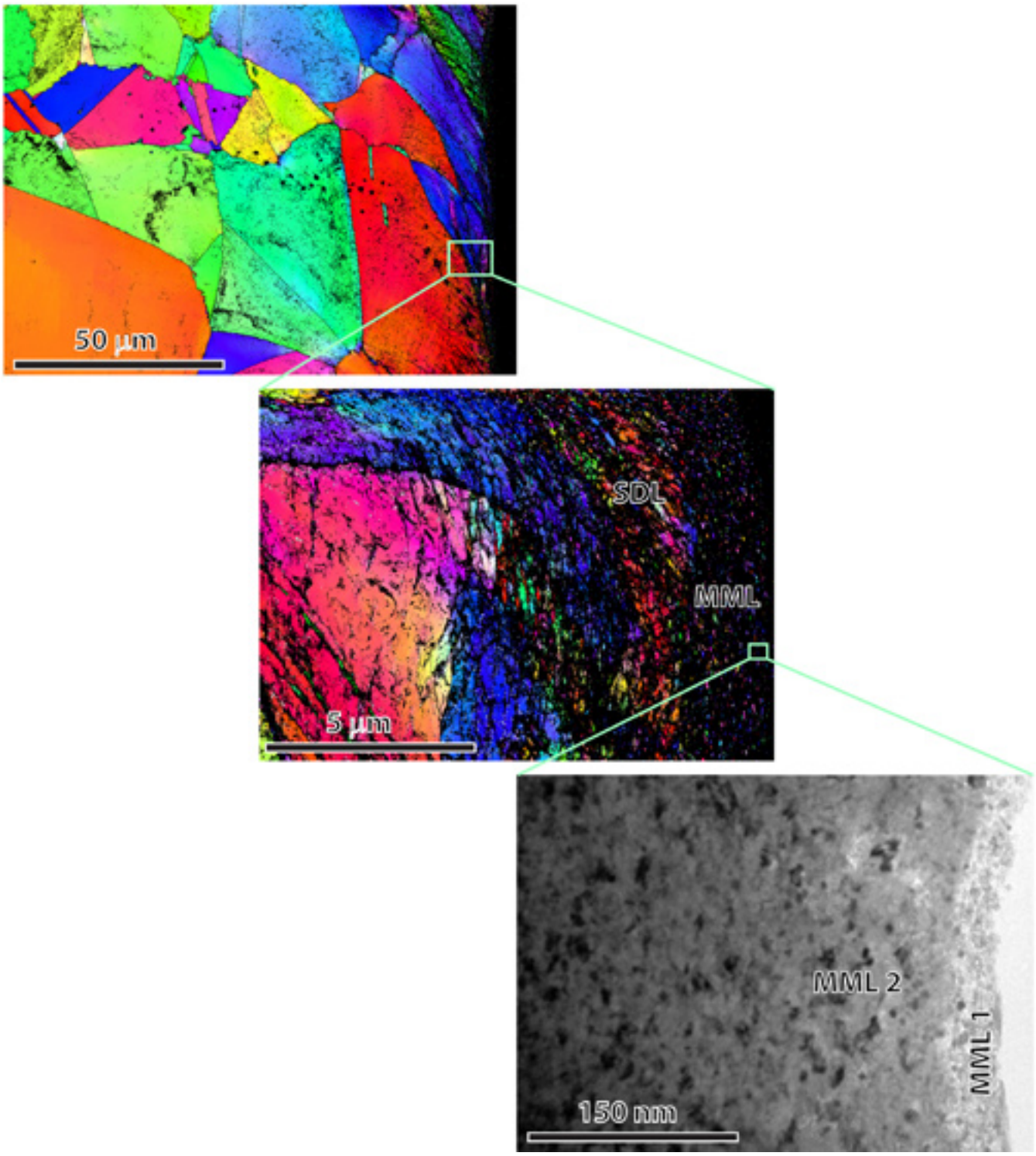
Department of Materials Science and Engineering

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN



SUMMER 2007 ALUMNI NEWS

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Coming in August: a new look for MatSE online

www.mse.uiuc.edu

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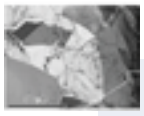


Cover Image

Multiscale characterization of the microstructure of a bronze pin worn against a hard martensitic stainless steel. The sliding direction is vertical and the pin surface is at the right of each figure. The top two figures are orientation maps obtained by electron-back scattered diffraction in a scanning electron microscope. Severe deformation (SDL) is evidenced by the grain shape distortion. Bottom image: a nanocrystalline mechanically mixed layer (MML) is shown by transmission electron microscopy to be comprised of two sublayers, starting with a porous Cu-depleted layer (MML1) and a nanocomposite of bronze and Fe_2O_3 (MML2).
Image courtesy of Wenjun Cai and JB Singh.

From the Head

Dear alumni:

I am pleased to report a big change that occurred this year – the second floor hallway in the Materials Science and Engineering Building has been replaced. This was more than a simple replacement of the institutional brown linoleum on which almost all of you walked. The wooden sub-flooring was removed as well – we even found a newspaper page from 1908 in the sub-flooring. Workers poured a concrete sub-floor and put down new flooring tile. Take a look at the back cover of this newsletter to see the difference. The pictures really do not do justice to how this has transformed the building. To the alumni who made this possible, a big thank you. We are now working on getting the first floor remodeled and the old machine shop renovated.

Each year I am impressed with our students for many different reasons. They get involved in a wide range of activities and show incredible leadership. This year one of our undergraduates, Jennifer Gaddis, who is particularly passionate about sustainability and environment, convinced us that we need to introduce courses in materials science and engineering related to ensuring a secure and sustainable environment. This is part of a campus-wide effort Jennifer is involved with. Her energy and enthusiasm are contagious, and this fall we will introduce the first of what I hope will be many courses on materials and the environment. The introduction of this course is timely as our research portfolio in energy and environmental issues continues to grow.

The next academic year will mark the twentieth year of the Department of Materials Science and Engineering at the University of Illinois, and we plan to mark the occasion with a celebration. To help us celebrate we would like to invite you to join us. The success of this department is directly related to our alumni, first the metallurgists and ceramists who provided such an excellent base from which to launch the new department, and second the graduates of the new program. We hope you will be able to join us and take the opportunity to renew old acquaintances and make new ones, meet the faculty, and see the changes that have happened on campus. Details about the event can be found inside.

We will be in Detroit at the MS&T meeting in September. I hope you will join us if you are attending the meeting or live in the area. We will be honoring Professor David Payne who will receive the Robert B. Sosman Award from the American Ceramics Society at the meeting.

On a final note, I want to thank you for all that you have done and continue to do for the department. Without your help and support, we would not be what we are today.

Ian M. Robertson
Willett Professor and Department Head

MatSE Calendar for Sale

After last year's success with our calendar, we are continuing the tradition this year! Attractive 12-month calendar (January 2008 - December 2008) features artistic images from graduate student research in the Department of Materials Science and Engineering at the University of Illinois.

The calendar includes TEM, SEM, STM, and optical images, as well as images from computer simulations. All black and white images have been enhanced with color, so every month has beautiful, full-color images. Calendar dimensions are 17" x 11" when fully opened; pages are 8.5" x 11".

The price is $15, including shipping (for calendars shipped in the United States; extra charge for shipping overseas). All proceeds from sales will go towards promoting science education in local Champaign-Urbana schools.

To order your calendar, please send a check for $15 (made payable to the University of Illinois) to:
MatSE Calendar
1304 W. Green St.
Urbana, IL 61801

The calendar was created by graduate students in the MRS chapter at the University of Illinois. For more information, e-mail matsecalendar@gmail.com. To see a sample page from last year's calendar, go to www.mse.uiuc.edu/matsecalendar.html.

Scale effects in chemical mixing forced by plastic deformation

By Prof. Pascal Bellon

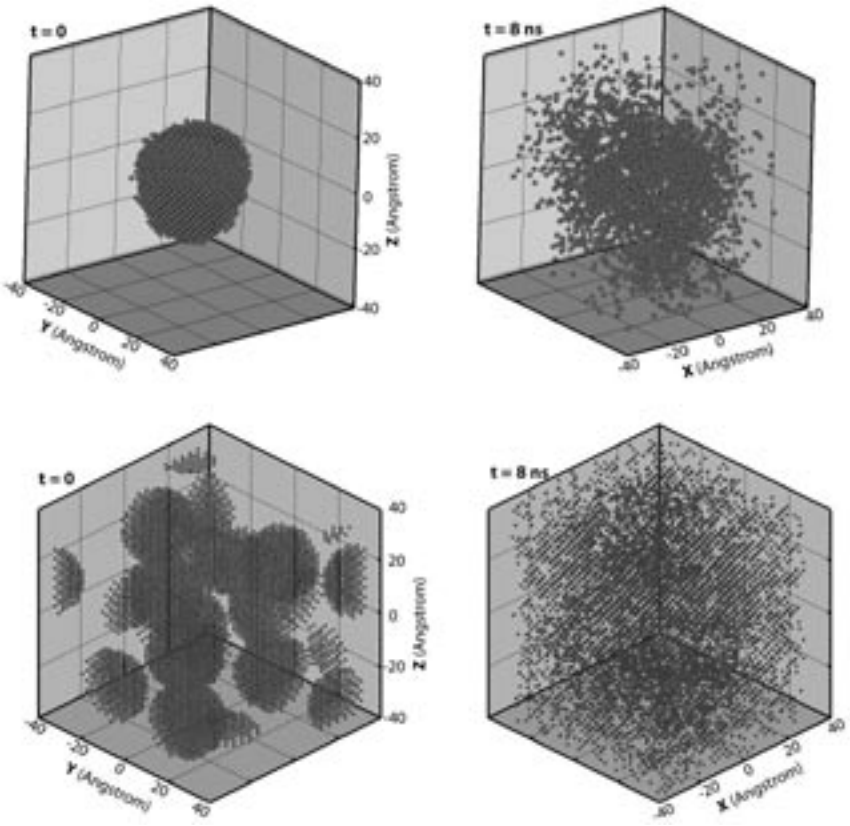
As we all know, oil and vinegar can be mixed by stirring with a fork, producing an emulsion. But is it possible to achieve a similar result with immiscible elements in the solid state? And if so, why? Our research has provided new results that answer these questions.

The shaping of metallic alloys is often achieved by taking advantage of the capacity of these materials to deform plastically, for example by rolling, extrusion, and drawing. Materials in service may also be subjected to plastic deformation, as for instance at the contacting surfaces of sliding bodies subjected to frictional wear. In a program sponsored by the National Science Foundation, we study how plastic deformation, in addition to accommodating permanent strains, can also affect the distribution of alloying elements in a given material. This mixing forced by plastic deformation can stabilize nonequilibrium phases or microstructures, and in turn, for instance, affect wear resistance.

For materials subjected to unlubricated friction, we have found that nanocomposites form spontaneously in tribofilms found at the interface of the two sliding bodies. As illustrated on the cover page figure for a bronze pin worn against a martensitic stainless steel, these tribolayers form on top of a severely deformed layer. The extension, the composition, and the scale of these nanocomposites have been elucidated using scanning electron microscopy combined with electron back-scattered diffraction (EBSD-SEM), and advanced transmission electron microscopy (TEM).

In collaboration with Prof. Averback, through a program supported by the Department of Energy, we have recently uncovered that the chemical mixing forced by plastic deformation differs intrinsically from the mixing that would be produced by a diffusive process, such as random walk. We have shown that the mixing forced by plastic deformation is superdiffusive, that is, the mixing efficiency increases with the length scale considered, as observed for instance in convective fluid flows. A practical consequence is that the rate of dissolution of pre-existing precipitates, for a given volume fraction of precipitates, scale inversely with the diameter of the precipitates. This unusual dependence has been confirmed by atomistic computer simulations, as illustrated in the figure below. These results can be directly used in practical situations, for instance to determine the amount of plastic deformation required to homogenize an engineering alloy.

A second important consequence of the scale dependence of the mixing forced by plastic deformation is that materials may spontaneously self-organize into composites when the forced mixing competes with thermally activated precipitation. In close analogy with the oil-vinegar emulsions prepared by stirring these immiscible liquids with a fork, the scale of these composites can be adjusted by varying the intensity of the deformation, or the temperature. These results suggest new strategies to design alloys that will produce lubricious nanocomposites, thus reducing friction and wear.



Pictured at right: Molecular dynamics simulations of the dissolution of a precipitate in an alloy subjected to repeated bi-axial straining. For the same volume fraction of precipitates, ≈8%, the microstructure with a single precipitate (top row) is not yet fully dissolved after a true strain of 40, whereas the microstructure starting with 10 precipitates (bottom row) is already randomized. *Image courtesy of Samson Odunuga.*

Alumni Board welcomes new members


Paul Clem

Paul Clem (PhD Cer '96) is a Principal Member of the Technical Staff in the Microsystem Materials Department at Sandia National Laboratories, where he has worked for the last 11 years on materials development and integration for integrated electronics, MEMS devices, RF devices, and superconducting applications. He has published 55 papers, received three US patents, and is Secretary of the Electronics Division of the American Ceramic Society, a General Chair of the IEEE Ultrasonics, Ferroelectrics, and Frequency Control Division, and an associate editor of the Journal of the American Ceramic Society. Clem has received the 2007 IEEE UFFC Ferroelectrics Young Investigator Award and the 2007 University of Illinois MatSE Young Alumnus award, and has received outstanding research awards from the Materials Research Society and American Ceramic Society. He and his wife, Christina, have a son, Stephen.


Matt Janet

Matthew Janet (BS Cer '97, MS MatSE '00) has served a variety of positions, beginning with refractory process engineering for Ipsen Ceramics, followed by basic research into processing/property relationship understanding at Caterpillar linking his M.S. degree to an industrial application. He then moved to 3M and has worked in inorganic materials processing and optical materials product development for the past 7 years. Janet has remained close to the MatSE Department and serves on the University of Illinois recruiting team for 3M. He and his wife, Mandy, have a one-year old son, Lucas.


Katy MacGregor

Katy MacGregor (BS MatSE '02) is a metallurgical engineer at Caterpillar, Inc. in East Peoria, IL. After graduation, MacGregor began working for Caterpillar in the Engine Division. From 2004-2005 she worked in Advanced Materials Technology in the Technology & Solutions Division, performing failure analysis on undercarriage components. From 2005 to the present, MacGregor has been the metallurgist for the Undercarriage Products Group, a design group responsible for worldwide undercarriage design and production for Track-Type Tractors, Excavators, and Track-Type Loaders. Here she assists with materials selection, failure analysis, supplier development, and manufacturing support. MacGregor actively participates in Caterpillar's on-campus recruiting at Illinois for MatSE graduates and summer interns. She is a member of the Peoria Chapter of ASM, having served as the historian and publicity chair. She resides in Peoria with her husband, Scott.

David Teter (BS Met '90, PhD Met '96) has been employed with Los Alamos National Lab since graduation. He served as Technical Staff Member in the Metallurgy Technology group (MST-6) from 1997-2002, then Weapons Project Leader for Metals Issues from 2002-2006. He is currently the Project Leader for the Enhanced Surveillance CSA/Case effort. The main focus of this program is to understand and quantitatively predict lifetimes of materials, components and assemblies. Teter has been part of teams which have received Awards of Excellence for the Nuclear Weapons Program and Stockpile Stewardship Program in 1999, 2000, 2001 and 2004. Since 2005, he has been the Deputy Group Leader of MST-6 where he leads a diverse technical organization which uses materials technology to support national security. Teter and his wife, Heather, have two daughters, Monika (12) and Melissa (9). He enjoys coaching basketball and softball and watching the kids develop their skills and develop good teamwork.


David Teter

Britt Turkot (BS Met '90, MS Met '92, PhD MatSE '96) has been employed at Intel Corporation since 1996, filling various roles throughout her tenure in the Lithography department within Intel Portland Technology and Development. Currently she is a senior principal engineer and engineering group leader responsible for lithographic process development in support of shrink and enhancement technologies. In addition Turkot is responsible for the technology transfer of lithography process support for Intel manu-


Britt Turkot

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Alumni Board

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facturing facilities startup. Outside the workplace, she enjoys coaching girls' competitive softball and spending time with her husband Bob (UIUC Nuclear Eng BS '90, MS '92, PhD '96) and two daughters.

Matthew Zaluzec (BS MET '84, PHD MATSE '90) is Manager of the Materials and Nanotechnology Department at Ford Motor Company's Research and Innovation Center. His research staff is focused on the development of next generation paint, plastics, and light metals research and he is responsible for Ford Motor Company's Analytic Surface Science and Materials Characterization Laboratories. From 1984 to 1987, he was employed by the Dow Chemical Company where he worked on plastics and lightweight magnesium materials. Zaluzec has received numerous technical achievements awards for developing advanced joining and coating technology, including 2 Henry Ford Technical Achievement awards. In 2007, he was awarded the SAE-Henry Ford II Award for Automotive Excellence for his work on advanced automotive body structures. He has been granted 34 U.S. Patents (104 patents worldwide) and has presented and/or published over 75 technical papers. He is a member of ASM, ASME and SAE and is the current Chairman of USAMP (United States Automotive Materials Partnership). Zaluzec is married with two children and is a second degree black belt instructor in Tae Kwon Do.

Matthew Zaluzec

Freshmen experience EOH

By Margaret Shyr, MSE 182 Teaching Assistant

Last fall, MatSE freshmen proposed topics for Engineering Open House (EOH) projects as a requirement for MSE 182: Introduction to Materials Science and Engineering. The 70 students not only drew from class lectures for ideas but also from everyday applications of materials science: the submissions this year were impressive with regards to their ambition of scope but also their creativity and genuine focus on the EOH audience—school children from K-12.

> *One of the most challenging aspects of EOH was finding a way to demonstrate how a particular materials science phenomenon works—while appealing to such a wide audience.*

The final topics ranged from conventional materials such as: composites, shape memory materials, LEDs, photochromic materials, piezoelectric materials to whimsical ideas such as polymer slime, make-up, candy, sporting goods, and gum. Then, working in teams of 6-7, the students researched the materials science aspects of their topics and designed interactive demonstrations of their ideas. After developing these ideas over five months, the students came together on EOH day.

"Photochromic Materials": Matt Menke, Felix Hotama, David Duterte

One of the most challenging aspects of EOH was finding a way to demonstrate how a particular materials science phenomenon works—which are hard to explain even with equations and a textbook—while appealing to such a wide audience. Judging from the displays this year and the large crowds drawn to the individual topic booths, the students accomplished their goal wonderfully and by doing so, demonstrated to their younger peers that materials science and engineering is fun!

"Make-Up": Meghan McKelvey

Class Notes

1950s

Bruce Aufderhaar (BS MET '56) has recently retired and is giving some general talks to grade school children on the engineering field and metallurgy in particular. He and his wife, Helen, live in Greenville, SC.

Al Klein (BS MET '55) visited campus on May 29. He and his wife Jane are retired and live in Palatine, IL.

1970s

Jen Lee (MS MET '78, PHD MET '84) is working in the Materials Engineering Department at Space Systems Loral in Palo Alto, CA. The company is a leader in communication satellite manufacturing.

Robert Shull (MS MET '73, PHD MET '76) visited India for the first time in August 2006, a week prior to attending the 8th International Conference on Nanostructured Materials held in Bangalore, India. Mishra, Shull and Chakravorty (see photo on this page) were very close as graduate students at Illinois but had lost track of each other in the interim 30-40 years. They arranged a reunion in New Delhi during Shull's visit.

1980s

Joseph Kaplan (BS CER '81) is a Senior Process Engineer at Owens Corning's Delmar Manufacturing Plant. He recently received his 25-year service award from Owens Corning.

1990s

Leighton Hill (MS MATSE '99) is an Information Warfare Officer for the US Navy. He has deployed on an aircraft carrier and a submarine, with more trips scheduled. He and his wife, Melissa, and baby, Olivia, live in San Antonio, TX.

Sanak Mishra (MS MET '70, PHD MET '73) Vice President, Indian Institute of Metals and Chief Executive Officer for Mittal Steel India Corporation, New Delhi. **Robert Shull**, Vice President, TMS, Group Leader of the Magnetic Materials Group, National Institute of Standards and Technology, Gaithersburg, MD.
Sudhansu Chakravorty (MS MET '70, PHD MET '75) Senior Vice President, Usha Martin Limited, Usha Alloys and Steels Division, Jamshedpur, India.

Charles Lakeman (MS CER '91, PHD MATSE '94) was named Vice President of TPL's Micropower Division in December 2006. The Micropower Division is developing power systems for wireless sensors combining energy harvesting with custom designed energy storage systems based on microbatteries and microsupercapacitors. He was employed by Texas Instruments (TI) until he joined TPL in March 1998. He has been instrumental in creating and leading TPL's micropower program since January 2002 and has been awarded three patents. He lives in Albuquerque, NM, with his wife, Susan, and two sons, Jonathan (3) and Michael (18 months).

Jason Sebastian (BS CER '96) received his Ph.D. in MatSE from Northwestern University and is now employed with QuesTek Innovations, a small materials design company located in Evanston, IL.

My Nguyen (BS CER '96, MS MATSE '97) is working on solar cell technology for SunPower Corporation in San Jose, CA.

Jeffrey Ruppel (BS MATSE '98) has joined Barnes & Thornburg LLP as an associate in the firm's Chicago office. He is a member of the Intellectual Property Division. Ruppel earned JD and MBA degrees from the University of Illinois in 2006. He and his wife, Jennifer, and son, Gavin, live in Naperville, IL.

2000s

Laura Copp (BS MATSE '04) has relocated to Minnesota to work at the Caterpillar Paving Products Facility in Brooklyn Park. She is a Supplier Development Engineer for non-metallic commodities that are purchased by the Minneapolis site.

Pam Roley (BS MATSE '05) wed Adam Rosenberger on June 23. She received her master's degree in education this year and will be a process engineer at Alcoa in Evansville, IN.

We want to hear from you!
Contact the Editor at
brya@uiuc.edu

Department Notes

Angus Rockett, **Pascal Bellon** and **Paul Braun** were named Accenture Outstanding Advisors.

John Rogers received the Tau Beta Pi Daniel C. Drucker Eminent Faculty Award. This award recognizes faculty in the College of Engineering who have received national or international acclaim for dedication to academic excellence through teaching and research and have made exemplary contributions to the understanding of their fields.

Moonsub Shim received the Xerox Award from the College of Engineering.

Angus Rockett was named an Honorary Knight of St. Patrick.

J.J. Cheng was selected for a competitive award from the Prostate Cancer Foundation. **Gerard Wong** and Yi Lu (Chemistry) are co-investigators on the research project.

MatSE seniors **Jennifer Gaddis** and **Marie Mayer** were selected for the 2007 Knights of St. Patrick.

Scott Cronin and **Matthew Duch** were selected for the Senior 100 Honorary. One hundred U of I students were selected by the for this year's honor based on their academic standing and their involvement, initiative and leadership in both campus and community activities.

Abhishek Chatterjee, Ph.D. student in Pascal Bellon's group, **James Rinne**, Ph.D. student in Pierre Wiltzius' group, and **Janet Wong**, Ph.D. student in Steve Granick's group, received Mavis Memorial Fund Scholarships from the College of Engineering.

Khalid Hattar, Ph.D. student in Ian Robertson's group, won the Materials Today cover competition for 2006. His image appeared on the journal's December 2006 issue.

Brandon Howe, Ph.D. student in Ivan Petrov's group, received the Graduate Student Silver Award at the International Conference on Metallurgical Coatings and Thin Films.

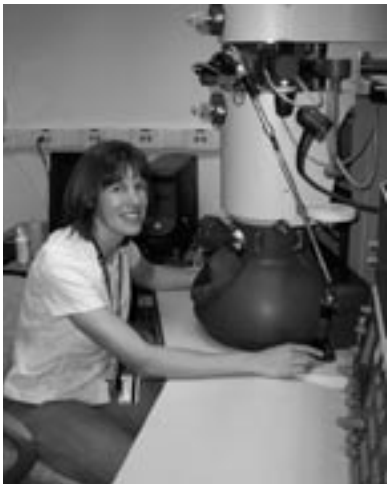
Yu Yang, Ph.D. student in John Abelson's group, received the MRS 2007 Spring conference Graduate Student Silver Award.

Zeba Farheen Abdul Samad, Ph.D. student in Jim Economy's group, received the PerkinElmer Award from the Society of Plastics Engineers.

This summer the MatSE Department, in partnership with the ASM Foundation, will hold a Materials Camp for high school science and math teachers. The camp will take place on the Urbana-Champaign campus the week of July 9-13. Teachers will learn how to integrate simple labs and experiments using everyday materials into their existing lesson plans to actively engage students in applied science.

Summer Reading

This summer, add to your reading list two new authors with ties to MatSE: Lisa Dougherty (PhD MatSE '01) and Lisa Mazzocco (currently a sophomore). "The Concertmaster: Lure of the Stringed Siren" is Dougherty's first novel, a story of a young, gifted violinist who stumbles into a violent altercation and finds his life changed. The novel is part of a two-part series; Dougherty hopes to publish the second book by the end of this year. She says, "It has been tough finding time to complete the final edits of the second book while working full-time at LANL, raising two children, training for the Leadville 100 ultramarathon race, and moving into a new house." Dougherty is currently a postdoctoral associate in the MST-8 (Structure/Property Relations in Materials Science Technology) group at Los Alamos National Lab.



Lisa Dougherty

Lisa Mazzocco

Mazzocco's "A Tale from the Stall Side," is a children's book about American Saddlebred Horses, told from the point of view of one of the horses. Mazzocco, a 2006 graduate of Champaign Central High School, has been riding horses since the age of 6. She has participated in numerous competitions, which have provided a lot of the material for her first book. Mazzocco hopes "A Tale from the Stall Side" will hope promote the Saddlebred to young riders.

MatSE celebrates 20 Years!

Twenty years calls for a celebration! The Department of Materials Science and Engineering (MatSE) was established in 1987 with the merger of the Departments of Ceramic Engineering and Metallurgy and Mining Engineering. Although a relatively young department, MatSE actually was built on a tradition of excellence that dates back to the founding of the University of Illinois in 1867, when the university was required to have a mining program as part of its mission as a land-grant institution.

To celebrate 20 years of MatSE, the department is holding a reception on Friday, October 12. All alumni are invited to the celebration; the classes of 1987-2007 are especially encouraged to attend. The reception will be held from 6:00-7:30 p.m. at the Illini Union on the University of Illinois campus. A cash bar and hors d'oeuvres will be provided.

Register for the event on-line at www.mse.uiuc.edu/alumni/20years.html or call 217-333-8312. If you have pictures from your student days that we could use in a slide-show, please contact Cindy Brya at brya@uiuc.edu.

Lemelson Prize finalist

Matthew Meitl, Ph.D. student in John Rogers' group, was one of eight finalists for the $30,000 Lemelson-Illinois Student Prize. The award is offered through a partnership between the University of Illinois and the Lemelson-MIT Program, a non-profit organization that recognizes outstanding inventors, encourages sustainable new solutions to real world problems, and enables and inspires young people to pursue creative lives and careers through invention.

Matthew Meitl

Meitl has developed an entirely new concept in the fields of micro- and nanofabrication and a new fabrication technique that uses kinetically switchable adhesion. Through his work, he has created a pick-and-place manufacturing tool without moving parts—capable of incredible throughput and control.

Research briefs

A team of researchers led by **Steve Granick** has resolved a controversy about the behavior of water when placed in contact with water-repellant surfaces. Their findings were reported in the journal Physical Review Letters (December 31, 2006).

The University of Illinois is licensing technology for flexible electronics, the result of research by **John Rogers** and **Ralph Nuzzo** (Chemistry).

Researchers at Illinois, Lehigh University, and Purdue have developed an approach that uses dense arrays of aligned and linear nanotubes as a thin-film semiconductor material suitable for integration in electronic devices.

David Cahill and co-investigators at the University of Oregon, RPI, and Argonne National Lab have come up with a new insulation material with the lowest thermal conductivity ever measured for a fully dense solid.

Research led by **Jian Ku Shang** suggests that the optoelectronic properties of palladium oxide nanoparticles embedded in a titanium oxide matrix could be used to kill bacteria and power electronic devices.

Gerard Wong and colleagues have found an underlying molecular cause for one form of deafness, while exploring the physics of hearing. They reported their findings in a paper accepted for publication in the journal Physical Review Letters.

Nancy Sottos, Scott White (Aero), and **Jeffrey Moore** (Chemistry) have found a novel way to manipulate matter and drive chemical reactions along a desired direction. The new technique utilizes mechanical force to alter the course of chemical reactions and yield products not obtainable through conventional conditions. The journal Nature included a paper describing their technique (March 22, 2007).

Paul Braun and **Jennifer Lewis** have created a germanium inverse woodpile structure that has one of the widest photonic band gaps ever reported.

Ken Schweizer and his research group have developed a theory that predicts how polymer glasses age. The findings were reported in the journal Physical Review Letters (April 20, 2007).

In Memoriam

Walter Bartow (BS Cer '40) died November 16, 2006. He played professional baseball with the Chicago Cubs as a pitcher for a short time after receiving his engineering degree. He was employed by American Lava in Chattanooga until he volunteered for duty in the U.S. Army Air Corps during World War II. He was employed with Western Electric (AT&T, Bell Labs) in Chicago. He helped design the microwave communication system that is still in use today, earning 52 patents for AT&T. Bartow lived in Naperville, IL, for 49 years and was on the board of directors for the Ray Graham Association for People with Disabilities for more than 20 years. He was preceded in death by his first wife, Marie. He is survived by his wife, Laura Cox Bartow; two daughters, Elaine and Carolyn; and one stepson, F. Holland "Buddy" Cox.

James Bechtold (BS Met '47, MS Met '49) died March 31, 2007, in Vero Beach, FL. He was a director of materials research at Westinghouse Electric in Pittsburgh. He was a member of the American Society for Metals, Vero Beach Orchid Society, and the Rotary Club. He was a member of the President's Council at the University of Illinois and a long-time supporter of the MatSE Department. Survivors include his sons, Tom, Scott, and Fred; and daughter, Maria.

Howard Beede (MS Met '46) died December 17, 2006, in Burlingame, CA. He was a licensed metallurgical engineer, State of California, at the time of his death. He served with distinction in the U.S. Army in the South Pacific during World War II and was awarded a Bronze Star and an Oak Leaf Cluster. After the war, Beede settled in the Bay Area working for Chevron, Pacific Gas and Electric, Consolidated Western and American Bridge, both divisions of U.S. Steel, and S&Q Construction. At the time of his retirement from American Bridge in South San Francisco, he was the Assistant Plant Manager. He is survived by his wife of 59 years, Erline, and sons Tom and Bob.

Dick Burrus (BS Mining '53) died January 6, 2007. He served in the Army Corps of Engineers from 1954 to 1956 as a first lieutenant. He married Kathleen on January 17, 1959, in Birmingham, AL. Burrus was employed by Boeing as an engineer and manager and retired in 1995. He enjoyed his family, pheasant hunting, fishing, skiing and flying. In addition to his wife, survivors include his children, Linda, Susan and Craig.

Howard Miner (BS Met '38) died February 11, 2007, in Aurora, IL. He was employed as a foundry man for more than 40 years before retiring from Beloit Corp. in 1978. He was an avid outdoorsman and enjoyed hunting and fishing. A skilled woodworker, Miner manufactured several fine pieces of furniture and wood carved several kinds of birds. He is survived by his wife of 16 years, Jeane Roberts; son, Richard; daughter, Victoria; and stepsons, Jim and Dick Roberts.

Arthur Roughley (BS Met '52) died April 6, 2007. He is survived by his wife, Jacqueline, and son, Norman.

Richard Rowe (BS Cer '42) died February 26, 2007. He served in the Navy during World War II. He was a 46 year member of the Kiwanis and past president of the Logan Kiwanis. He is survived by his wife of 64 years, Pat; and sons, Tim and Ted.

Donald Scheck (BS Met '52) died September 24, 2006. He married Marlene Zulke in 1952. In 1966, he received his Ph.D. from Purdue University. Scheck taught in the General Engineering Department at the University of Illinois for 13 years and in the Industrial and Systems Engineering Department at Ohio University for 18 years. He later developed an international consulting business. Survivors include his wife; two daughter, Roxanne and Carla; and two sons, Gregory and Christopher.

Adler Spotte (BS Mining '40) of Kingwood, WV, died January 11, 2007. He married Helen Hancock on September 18, 1937. Upon graduation, he was employed by Hanna Coal Company in St. Clairsville, OH. Following his service in World War II, Spotte spent the remainder of his career working in the coal fields of West Virginia, Virginia, and Kentucky serving as President of the Blacksville Division of Consolidation Coal Company in Morgantown, WV; and Vice President of Operations for Pittston Coat Company in Clarksburg, WV. Upon retirement he formed a mining consulting corporation, Equity Sales and Engineering. He worked until his mid 80s. Spotte is survived by his wife, Helen; one son, Stephen; and daughter, Jane.

Paul Robert (Bob) Sprehe (BS Met '56) died February 7, 2007. Sprehe served as a first lieutenant with the U.S. Army. He received his MBA from Northwestern University and was employed as an Economist with the Department of Natural Resources in Baton Rouge, LA. He was actively involved in his church and community and was known as Coach Sprehe to the many children on his soccer, baseball and basketball teams. Sprehe is survived by his wife of 41 years, Carolyn; daughters, Elizabeth and Didi; and son Michael.

Hans Thurnauer (1908-2007)

Hans Thurnauer (MS Cer '32), a kind and generous benefactor of the MatSE Department, died February 2, 2007, in Boulder, Colorado. In 1995, Thurnauer established a scholarship fund in honor of his mentor, Professor Cullen Parmelee. Professor Parmelee, head of the Ceramics Department at the University of Illinois, gave a lecture at the Technical College in Berlin when Thurnauer was a student. Thurnauer was so impressed by Parmelee's presentation that the following year he came to the U.S. for a master's degree. An illustrious career in ceramics followed, along with a Ph.D. from the Technical University of Berlin. In 2003 Thurnauer established a professorship in MatSE at Illinois.

Highlights of Thurnauer's career include Director of the American Lava Corporation, United Nations Director of Israel Ceramic and Silicate Institute, and Technical Advisor to the President and General Manager of Coors Porcelain Company. After his retirement from industry, he worked for the International Executive Service Corps, to carry out assignments for ceramic assistance in South Korea, Indonesia, Singapore, Turkey and Nepal. His professional honors include Fellow of the American Ceramic Society (1945); ACerS Edward Orton Jr. Memorial Lecture (1977); the Alumni Award for Distinguished Service in Engineering from the University of Illinois (1987); and ACerS Distinguished Life Member (1996).

Thurnauer was a resident of Boulder for 40 years. He was an avid hiker and cross-country skier. An active member of the Colorado Mountain Club, he joined club members to climb Mt. Kilimanjaro well into his second retirement. He was preceded in death by his first wife, Lotte Oettinger; his second wife, Elba Dolores; and his son, Peter. He is survived by his daughters: Dorothy Kaplan and husband Donald, Marion Thurnauer and husband, Alexander Trifunac; six grandchildren; two great-grandchildren and daughter-in-law Milena Renshaw.

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MSEB Renovation

The second floor hallway of the Materials Science and Engineering Building received an “extreme makeover” at the beginning of this year. The first photo above shows the hallway before the makover, with an aging brown floor and bright fluorescent lighting strip. In the next photos, the sub-flooring is being removed (above) to get ready for the new concrete flooring (below). The last photo shows the remodeled hallway with new drop ceiling and flooring.

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