

ENGINEERING News

Kazuo Inamori School of Engineering
Alfred University

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Short Courses and Outreach Summer 2009

7 courses are available!

First-rate equipment and comfortable classrooms complement SOE faculty skills to create an invigorating collegiate atmosphere.

Expand your horizons!
Short Courses - lifelong learning for professional success!

<http://engineering.alfred.edu/shortcourses/>

Richard Brow '80 & '82, is Scholes Award Lecturer

Holmes Auditorium, Harder Hall
Thursday, April 16, 2009 11:15 AM

Dr. Richard K. Brow (AU CE 1980, MS Ceramic Science 1982), Curators' Professor of Ceramic Engineering, Materials Science & Engineering Department, Missouri University of Science & Technology, Rolla, MO, will present the 2009 Samuel R. Scholes Sr. Award Lecture on April 16, 2009. His lecture is entitled "Engineering the Random Network: Scenes from One Career (so far) in Glass Science."

Brow speaks from an extensive research career (so far) - that has involved studies of the structure and properties of inorganic glasses, including the development of new compositions for electronic, optical, biomedical and other applications. Brow has published over 150 papers on his research and has been awarded ten US patents, and has received a number of awards for his research, including recognitions from the American Ceramic Society and the International Commission on Glass.



Dr. Richard K. Brow

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Amarakoon addresses local legislators

CACT's local economic impact vital to Western New York

Dr. Vasantha Amarakoon, Director of the Center for Advanced Ceramic Technology (CACT) and Professor at the NYS College of Ceramics at Alfred University was the invited program speaker at the March 20, 2009, meeting of The Inter-County Association of Western New York. The Legislators met at AU's Susan Howell Hall to discuss issues that directly affect western New York.

Amarakoon's presentation highlighted the CACT's mission to generate economic impact for New York State by collaborating with industry by providing analytical services and applied research customized for each client company. Amarakoon also explained how industry funds can be leveraged with state and federal programs to achieve both the sponsoring company and CACT's goals.

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Science on Wheels - "Cool" science is a hot topic!

Science on Wheels, a group of dedicated volunteer undergraduate and graduate students and staff, brings hands-on science to middle school students in the Alfred region. So far this year, the group has conducted four on-campus programs with admirable success and rave reviews.

The visiting students (and equally keen adults) experiment with slime (at right), wall-walkers and optics, had hair-raising experiences with a Van de Graaff generator, and even poured hot glass!



continued on page 7

Knox and George to serve on ACerS Presidents Council

Graduate student Victoria Knox is the 2009 Council Chair of the American Ceramic Society's growing student-led group called the President's Council of Student Advisors (PCSA). PCSA's mission is to engage students as active and long-term leaders in the ceramics community and to increase participation in ACerS at the local and national levels. PCSA was established in January 2008.



In 2008, Knox, then programming chair, was instrumental in organizing events at MS&T including lab demonstrations and a tour of McDanel Advanced Ceramic Technologies (Beaver Falls, PA) facilities. At ICACC (aka "Cocoa Beach") meeting, PCSA organized a new "Schott" drop competition, manned its own booth and helped monitor sessions during the technical meeting.

As Council Chair, Knox and the PCSA officers will work toward expanded goals:

- Expand PCSA membership
- Continue raising sponsorships
- Strengthen and solidify the student-professional connection within the ceramics community
- Create a ceramics-oriented demonstration kit for K-12 students
- Create more ceramics-focused content for the materials student community
- Promote research and encourage PCSA involvement at conferences

Jaime George (senior, BMES) is also a PCSA delegate. She is active in the Programming Committee which is currently working to create a ceramics-focused demo kit for K-12 students.

Odink Award honors for glassblowing skill

Anatoly Kishinevski, GES senior, has been awarded Alfred University's Harry J. Odink Memorial Award "skills and enthusiasm for research and engineering in a laboratory setting" for his contributions to technical and scientific glassblowing.

Kishinevski is president of the Alfred Technical Glass Club. He is well known for his enthusiastic and skilled contributions to the Engineering Materials Science Day Program where his demonstrations of technique draw interested crowds of future scientists and engineers.

Says Kishinevski, "I have been working as a scientific glassblower since my senior year of high school ... since coming to Alfred [University] I have embraced the world of scientific glassblowing."



Engineer-Athletes win top honors

AU men's swim team won its third straight Upper New York State Collegiate Swimming Association (UNYSCSA) and Empire 8 titles. At the UNYSCSA/Empire 8 championship meet, diver Kameron Chambliss (junior MSE) won both the 1-meter and 3-meter Empire 8 diving titles to claim First Team all-conference and Diver of the Meet honors!



Skier **Lauren Pfeifer** (junior MSE), has been named a United States Collegiate Ski Association (USCSA) All-American.

Pfeifer was named a Second Team All-American after finishing 12th in the combined individual standings at the USCSA National Championships, held March 4-7, in Winter Park, CO.

It marks the third year Pfeifer has been named an All-American skier.



Top honors for Charity!



On March 21, 2009, the Alfred University Men's Soccer team hosted a charity 3 x 3 "lose the shoes" soccer tournament for the benefit of Grassroot Soccer. Among the 25+ teams were numerous undergraduate engineers and graduate students (we can't name them all), at least one faculty member, Dr. Herbert Giesche, and dedicated soccer players from the Alfred, NY, area schools and soccer leagues. The event raised over \$1700!

Grassroot Soccer was established by Ethan Zohn, winner of "Survivor: Africa," with most of his \$1M winnings. The nonprofit organization is fighting the AIDS in Africa training professional soccer players to be HIV/AIDS educators. (go to <http://www.grassrootsoccer.org/> to learn more)

Career prospects good for AU engineers

CDC Internship & Summer job fair indicates good opportunities outlook



Eric Hosey (left) of Emhart discusses prospects with Griffin Patterson (sophomore, MSE).

The Alfred University McComsey Career Development Center (CDC) hosted a mid-winter Employment Internship & Summer Job Fair on February 19, 2009. Over 50 companies and organizations were represented, many seeking engineers!

Although the Fair's focus was on internships and summer jobs, many engineering firms present were also accepting resumes for possible co-op openings. Engineering co-ops are professional, paid positions and are usually designed as unique projects by each company, so speaking with interested undergraduates is often the first step toward justifying a co-op opening.

Current economic conditions may have had an effect on late 2008 hiring, but job prospects looked good going into 2009!

Alumni in the news ...

Sehirlioglu '00 wins ITTC award

Dr. Alp Sehirlioglu (MS CE 2000), currently a Research Scientist affiliated



with Case Western Reserve University working at NASA Glenn Research Center in Cleveland, OH, has won the prestigious Lucks award from the International Thermal Conductivity Conference (August

29 - September 2, 2009, Pittsburgh, PA USA).

"The Lucks Award" is given at the International Thermal Conductivity Conference / International Thermal Expansion Symposium (ITTC/ITES) in the memory of Charles F. Lucks, to a young scientist who has entered the field of thermophysics within maximum three years, for outstanding contributions in the field of thermophysics, including thermal expansion or other related properties.

As an award winner, Sehirlioglu will give the keynote lecture and the plenary lecture during ITTC. His talk is entitled:

"Crystal physics and macroscopic symmetry revealed by thermal expansion measurements"

The ITCC and ITES meetings are held concurrently every two years to provide a forum for the free exchange of ideas, advancement of the science,

training of new professionals, and discussions of the state-of-the-art in thermophysics.

Winters '67 honored by ASTM for outstanding technical leadership

Nicholas Winters (BS CE 1967), consultant, has been recognized with the ASTM International Award of Merit and accompanying title of fellow. The Award of Merit is the highest organizational recognition for individual contributions to ASTM standards activities.



Winters, member of ASTM International since 1978 and past chair of Committee F02, was cited "for outstanding leadership, guidance and technical contributions to ASTM International Committee F02 on Flexible Barrier Packaging in developing and publishing global standards in support of the flexible packaging industry."

Winters works on several F02 subcommittees and task groups and is chair of Subcommittee F02.40 on Package Integrity. Previously, Winters received awards of appreciation from F02 in 2001 and 2006; he also serves on Committee D10 on Packaging.

Miller '87 tapped by Harper International

Charles W. Miller (BS CE 1987) has been appointed by Harper International, a global provider of



advanced thermal processing systems, to the position of President.

Miller joined Harper in 1995 and has performed in progressive management positions, most recently as Vice

President of International Business. Miller is recognized as a major contributor in establishing Harper International as a premier international supplier of comprehensive systems for continuous thermal processing of materials.

The Board of Directors stated, "We are confident that the selection of Mr. Miller as President assures the continued successful growth of Harper International. We look forward to leveraging his knowledge and experience in the thermal processing industry. This coupled with his demonstrated accomplishments and leadership will yield value for the shareholders, clients, and employees."

AU inaugurates Confucius Institute

Dr. Wilfred Huang, professor of management in the College of Business (and former member of the AU Industrial Engineering faculty), will serve as director of the Alfred University Confucius Institute, one of just over 200 worldwide and one of only 47 in the United States.



Dr. Wilfred Huang

The Institute at Alfred University is one of three in New York State. The invitation-only dedication ceremony is scheduled for May 3, 2009.

AU's College of Business joins a select group of colleges and universities internationally as host to a Confucius Institute, devoted to promoting Chinese language and culture through education. Created in December 2008 with support from the Office of Chinese Language Council International (Hanban), the AU Confucius Institute promotes Chinese language and culture through education, helping residents of New York State to understand China today.

Among the most exciting possibilities, says Huang, are trips to China conducted through the Confucius Institute at Alfred University. He will

be working with the International Programs office at Alfred University to develop additional semester- or year-long study abroad opportunities for AU students at Chinese institutions.

The Inamori School of Engineering is currently exploring collaborations and faculty/student exchange programs with several Chinese Universities and has maintained a strong relationship with Jingdezhen Ceramic Institute for many years.

Marlene Wightman, Director of Continuing Education/Outreach, is coordinating arrangements for the dedication ceremony of this important new program.

Enhanced opportunities for hands-on engineering

The Inamori School of Engineering's Mechanical Engineering program is expanding the capabilities of their student machine shop. The shop is critical to not only the ME Senior design projects but also to the Gravity Racer car system development and Battle-bot teams plus other engineering projects throughout the School's programs.



NYSCC, AU host teacher honors

The Kazuo Inamori School of Engineering and the NYS College of Ceramics at Alfred University recently sponsored a High School Math/Science Teacher Award competition.

AU students and alumni with majors in engineering, science, and math submitted applications with recommendations of high school

teachers who had influenced them in their previous studies.

The four winners were: Beth Howitt, mathematics teacher at Wellsville High School, Wellsville, NY; Eric McConnell, science teacher at Newport Junior/Senior High School, Newport, PA; James Sposato, mathematics teacher at Frewsburg Central School, Frewsburg,

NY; and Lynn Auble, technology teacher at Dansville High School, Dansville, NY.

Each winning teacher received a certificate and \$200 toward supplies, equipment, and field trips at their schools. The student nominee of each winner also received a gift certificate to the College Bookstore.

Engineering Week 2009

National Engineering Week (February 16-20, 2009) at Alfred University is full of fun activities for engineers and others to exercise their creative and problem solving skills to meet new challenges. In addition, it's almost the coldest week of the year, adding to the challenge of coming out from hibernation to do anything in the evening!

The full range of activities included a Rube Goldberg Competition,

Mousetrap Powered Car races, a MacGyver Competition, Pinewood Derby Car racing, and an Egg-drop Challenge from the top of the Davis Memorial Carillon. The week culminated in a (mercifully indoor) BBQ in the Powell Campus Center Knight Club.

Congratulations to our stalwart competitors - here's hoping for warmer weather next year!



Amarkoon speaks to legislators *(continued from page 1)*

In recent years, Allegany County has been noted as a home to many "Gazelle" businesses, those showing consistent job creation of 20% or more over at least 4 years - those new, rapidly growing firms the CACT and the Ceramics Corridor have helped to establish through access to research and affordable start-up

space to maintain that positive trend. Although a small county, our region was noted as recently as March 2009 (careerbuilder.com "The Work Buzz") as showing positive signs of job creation.

The presentation was followed by a luncheon and a tour of the Alfred Ceramic Corridor Innovation Center.

► *Dr. Amarakoon and Dr. Bill Hall, Dean of AU's College of Business and Allegany County Legislator, met on March 26 to discuss local business research needs as a follow-up to the March 20th Association meeting.*



CACT - Delphi Collaboration: Materials Development and Processing for Solid Oxide Fuel Cells

Solid oxide fuel cell research is paramount to successfully realizing increased fuel efficiency and is gaining momentum through the collaborative effort engaged by Delphi (Henrietta, NY), The Center for Advanced Ceramic Technology and Alfred University's Inamori School of Engineering. Current studies are focused on cost savings by increasing fuel cell life and reducing fuel cell production energy requirements.

Current research includes evaluation of various glasses and electrode materials formulations using X-ray characterization (directed by Dr. Scott Misture) and investigation of optimized firing techniques at the CACT's Nano Ceramics Fabrication Pilot Plant (direction by Gary Del Regno).



Fuel cell component bi-layers consisting of an electrolyte and conductor laminate are currently being fired at the Nano-electronics-Pilot Facility in the Alfred Ceramic Corridor Innovation Center using their custom designed ORNL-derived multi-atmosphere microwave furnace.

Scholes Lecture *(continued from page 1)*

Brow's lecture will explore the mysteries of structure and the endless engineering opportunities for this material to stimulate our mind. In his talk, he will explore some examples of how our understanding of glass structure led to the development of new compositions for different applications, including seals for pacemaker batteries and satellite components, solid-state lasers and

new low-temperature optics and try to show the lessons first learned as an AU student can still be applied to our current engineering challenges.

The lecture will be followed by the Scholes Award Luncheon in Susan Howell Hall (reservation required). After the luncheon, the AU Graduate Student Chapter of the Materials Research Society will sponsor a research poster session (upstairs)

from 2-3 pm - a great opportunity for continued networking while learning about current research in the Inamori School of Engineering!

For more information on the lecture or luncheon, contact Marlene Wightman, wightman@alfred.edu or go to http://engineering.alfred.edu/lectures/scholes_lecturer.html.

Faculty News

Dr. Scott Misture, Inamori Professor of Materials Science and Engineering, was invited to present an overview of "Characterizing Materials for Energy Conversion", focused on in-situ diffraction studies (both XRD and neutron) at Los Alamos National Lab's Lujan Neutron Scattering Center, March 3, 2009.

Misture's talk was part of a 1-day workshop on the future of two of the neutron scattering instruments - HIPPO (High Pressure and Preferred Orientation powder diffractometer), which has extensive capability to study powders at high temperatures and under pressure; and SMARTS (Spectrometer for Materials Research at Temperature and Stress), which is well-suited for high temperature stress and powder analysis.

Misture and graduate student Eric Nichols were advanced users of HIPPO during October of 2008, work that is soon to be published.

Dr. Doreen Edwards, professor of materials science and engineering, presented the February 5, 2009, Bergren Forum at Alfred University. Her topic was "Alternative Energy: Technology, Policy and Research." Edwards's talk included discussion on research conducted in the Inamori School of Engineering at Alfred University. The well-received seminar was also presented as a graduate seminar in AU's College of Business.



Edwards has also been invited to participate in an NSF workshop "The Symposium on Enabling Engineering Faculty as Academic Change Agents," June 25-26, 2009, in Chicago, IL. As a workshop participant, Edwards will develop strategies to engage the Inamori School of Engineering faculty for curriculum development.

Edwards is also on the organizing committee of a special MS&T09 symposium at which to honor the late Dr. Richard M. Spriggs.

Dr. Olivia Graeve, associate professor of materials science and engineering, travelled to Missouri University of Science and Technology (formerly the University of Missouri-



Los Alamos's Lujan Neutron Scattering Center workshop participants included (l-r) Tom Holden, Canada; Don Brown, LANL; Bjorn Clausen, LANL; Michel Barsoum, Drexel; Scott Misture; Ersan Ustundag, Iowa State; Hahn Choo, Univ. of Tennessee; and Ismail Noyan, Columbia University.

Rolla) in February to present the seminar "Advanced Sintering Processes for Nanocrystalline Materials." Graeve also presented a seminar in March at the University of Arizona on precipitation processes for the synthesis of nanopowders.



Dr. Alastair Cormack, Dean of the Inamori School of Engineering, has traveled extensively in 2009. In January, he was an invited lecturer at the 2nd African School on X-rays and Materials, held in Dakar, Senegal, January 19-25, on the structure of noncrystalline materials and their interaction with x-rays.



Cormack was an invited participant in a workshop on Glass surfaces and stress corrosion mechanisms at the nanoscale. The workshop, funded by The EU EFONGA (European Forum on New Glass Applications) project, brought together 15 scientists, mainly from Europe but including some from the US and Japan. The workshop was held at the CNRS Laboratories on the University of Montpellier in France from February 22-25.

Cormack, continued on to visit University College London to discuss recent research results with colleagues in the Department of Chemistry.

Cormack visited Iowa State University, giving a seminar in the Department of Materials Science and Engineering on March 12. While at ISU, he discussed the possibilities for collaboration with ISU colleagues on

research which will use their Virtual Reality facilities to visualize his models of glass structure in a dynamic mode.

Dr. William Carty, professor of ceramic engineering, will contribute to the 113th Metalcasting Congress (American Foundry Society, Las Vegas, NV - April 7-10, 2009), presenting The Development of an Improved Ceramic Shell for Investment Casting



Applications with co-authors Hyojin Lee, Edwin Reeves, Paul Ormond, and Randy Mauzy.

Carty will also contribute to NCECA's 43rd Annual Conference - Ceramic Interface: From Dawn to Digital (Phoenix, AZ - April 8-11, 2009) as an invited member of two panel discussions: "Clay Doctors" and "Glaze Doctors".

Dr. Jim Varner, Kruson Distinguished Professor of



Ceramic Engineering and "Ehrenmitglied" (honored member) of the Deutsche Glastechnische Gesellschaft (DGG), will be a participant in the DGG's annual meeting, May 18-20, 2009, in Amber,

Germany. Following that meeting, Varner will continue to Erlangen, Germany, to teach two short courses.

At the PacRim/ICG meeting (see page 8), Varner will chair the meeting of Technical Committee 6 (Mechanical Properties of Glass).

Solid State Ionics update (SSI- 17)

17th International Conference on Solid State Ionics

June 28 - July 3, 2009

Fairmont Royal York Hotel, Toronto, Canada

The clock is counting down to the start of The 17th International Conference on Solid State Ionics. With over 500 papers contributed, SSI-17 is shaping up to be an extraordinary conference.

Save \$100 by preregistering by April 15th!

Visit the website (<http://www.ssi-17.net>) for complete registration and travel information, including important and helpful links for hotel, airports and Canadian visa application.

Contact Marlene Wightman, wightman@alfred.edu, for further information.



Mark your calendar for Fractography of Glasses and Ceramics VI!

Following the highly successful 2006 meeting in Rochester, NY, preparations have begun on the latest in this important conference series, so mark your calendars for June 2010 and start preparing your contribution!

Conference proceedings will be published by The American Ceramic Society-John Wiley and Sons as part of the Ceramics Transactions Series.

Contact Dr. Jim Varner, varner@alfred.edu, for conference information.



Science on Wheels *(continued from page 1)*

The Science on Wheels program is supported by the Inamori School of Engineering with contributions of special materials and help from alumni and friends. Contributions have included the demonstration kit "Optics Suitcase" from Dr. Steve Jacobs (University of Rochester, Institute of Optics) and participation of alumnus Andy Norris of Vesuvius Hi-Tech Ceramics (Alfred Station, NY).

For more information on the Science on Wheels program, contact Marlene Wightman, Director of Continuing Education/Outreach, wightman@alfred.edu.



Students from Scio Central School investigate refraction and birefringence characteristics of common materials.

Below, (l-r) grad student Katie Goetschius and Dennis Whittaker (teacher, Scio Central School), look on while Dr. Alix Clare assists a student melting glass. (Whittaker was Clare's first graduate student at AU)



A hair-raising experience of electrostatic repulsion using the Van de Graaff generator!

Making liquid nitrogen ice cream is a cool finish to a hot session. (from l-r, Pam Winterhalter, grad student George Keith, and Marlene Wightman)



Engineering Faculty at PacRim8

8th Pacific Rim Conference on Ceramic and Glass Technology
and the 2009 Annual Meeting of the International
Commission on Glass (ICG)
May 31–June 5, 2009
Vancouver, British Columbia



Monday, June 01

Synthesis, Functionalization and
Processing of Nanostructures -
Balmoral, 1:20-6:10 PM

Development of nanoporous ceramics
through selective reduction reactions
B.E. Hill*, M.E. Miller, S.T.
Misture (1:50-2:10 PM,
PACRIM8-S07-002-2009)

Comparison of Oxide and Nitride
Thin Films – Electrochemical
Impedance measurements and
Materials Properties
Y. Liu, C. Qu, R. Miller, D. Edwards, J.
Fan, P. Li, E. Pierce, X. Wang* (5:30-
5:50 PM, PACRIM8-S07-010-2009)

Visible Light Active Photocatalyst -
Regency F, 1:20-3:20 PM

Control of Band Gaps in Layered
Photocatalytic Oxides
E.J. Nichols*, S.T. Misture (2:40-3:00
PM, PACRIM8-S17-004-2009)

Characterization of Photocatalytic
Materials - Regency F, 3:20-5:40 PM

Photocatalytic Activity of Six Tunneled
Titanates
S.B. Sanford, S.T. Misture,
D. Edwards* (4:00-4:20 PM,
PACRIM8-S17-007-2009)

Tuesday, June 02

The Role of Interfaces and Grain
Boundaries in Mechanical Behavior -
English Bay, 8:30-11:00 AM

Atomistic Simulation of Nano-Ceramic
Coatings on Iron Steel Substrate
J. Fan (9:00-9:20 AM,
PACRIM8-S01-002-2009)

Next Generation Bioceramics - Georgia
A, 1:20-5:30 PM

Some Advantages of Glass as a
Biomaterial or as a Biomaterial
Precursor
A.G. Clare (1:50-2:20 PM,
PACRIM8-S21-019-2009)

Electrode Materials and Microstructural
Engineering, Ceramic and Metallic
Interconnects, Degradation
Mechanisms - Georgia B, 1:20-5:20 PM

Stability of SOFC cathode materials
B. Jiang, J.S. Ovenstone, J. Lee,
S.T. Misture* (4:00-4:20 PM,
PACRIM8-S14-007-2009)

Poster Session - Regency C & D, 5:00-
8:00 PM

Novel Chemistry-Modification
Approach for Synthesis of SiAlON
from Fly Ash

J.P. Kelly*, J.R. Varner, W.M. Carty,
V.W.R. Amarakoon (5:00-5:00 PM,
PACRIM8-S03-P005-2009)

Fabrication of Hollow Glass
Microspheres from Waste Amber
Cullet for Hydrogen Storage
S.R. Shetty*, M.M. Hall (5:00-5:00 PM,
PACRIM8-S14-P131-2009)

Wednesday, June 03

Glasses for Optoelectronics - Seymour,
8:40 AM-noon

Reflective Coatings on Glass for Solar
Energy Applications
A.S. Geleil*, D. Edwards, S. Misture,
R. Naum, C. Ritzler (10:20-10:40 AM,
PACRIM8-S25-025-2009)

Thursday, June 04

Glass Surface and Nanostructured
Glasses - Grouse, 8:30 AM-noon

Indium Nanocrystal Formation in
Glasses
J.S. Rich*, J.E. Shelby (10:00-10:20
AM, PACRIM8-S23-052-2009)

The Future of Glass Strength—An
Industry Changing Symposium: Part II -
Stanley, 1:20-5:40 PM

Modeling Glass Failure and the
Strength of Oxide Glasses
A. Cormack*, L. Adkins,
A. Pedone (2:40-3:20 PM,
PACRIM8-S24-039-2009)

Nanostructured Materials/Properties
of SPS Densified Materials - Prince of
Wales, 3:20-5:40 PM

Exploring Powder Particle Size/Grain
Size Correlations During Spark Plasma
Sintering of Oxide Nanoparticles
Prepared by Reverse Micelle Synthesis
O.A. Graeve*, B.C. Williams, S.
Diaz de la Torre (3:50-4:20 PM,
PACRIM8-S06-014-2009)

Materials for Solar-Thermal
Applications - Oxford, 3:20-5:20 PM

Thin Film Coatings for Concentrated
Solar Power Collectors
A.S. Geleil*, D. Edwards, S. Misture,
R. Naum, C. Ritzler (5:00-5:20 PM,
PACRIM8-S16-017-2009)

Optical Sensing - Seymour, 4:20-6:10
PM

Neutron Detector Glasses Containing
Gadolinium Oxide
K.L. Goetschius*, J.E. Shelby,
A. Houston (5:50-6:10 PM,
PACRIM8-S25-048-2009)

Friday, June 05

Strength, Durability and Electrical
Properties of Glasses - Stanley, 8:30-
11:40 AM

High-Strength, Large Case-Depth
Chemically Strengthened Glass
A. Varshneya*, I.M. Spinelli (8:30-9:00
AM, PACRIM8-S24-040-2009)

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