

# ENGINEERING News

Kazuo Inamori School of Engineering  
Alfred University

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## MS&T'06

**Alumni reception at  
MS&T'06  
October 17, 2006  
6:00 - 7:30 pm  
High Spirits Restaurant -  
Millennium Hotel  
141 West 6th Street  
Cincinnati, Ohio**

## "Team Primal" surprises the competition 2006 XGR Greenlight Gravity Series

**T**welve teams, including professionals from Chrysler and Honda, competed July 29 in the 1.5-mile 2006 XGR Greenlight Gravity Series, a non-motorized car race down the treacherous Tuna Canyon Road in Malibu, Calif.

Alfred University's "Team Primal" was one of only three university teams in that elite group. Seniors Steve Peifer (ME) and Mike Hanes (MSE/ME) had originally intended just to stand out at the Hot Dog Day's annual Pine Hill Derby, but after learning of the XGR series they set their goals higher and were California bound!

Their entry, built at a cost of \$1500-\$2000, surprised the corporate competition, including the likes of Chrysler, Honda and Mazda, that had spent up to 10 times that amount just on materials.

Peifer created and installed the frame, brake and steering systems, the latter involving bars

*(Continued on page 3)*



Mike Hanes (l) and Steve Peifer (r), the smallest team at the XGR race, drove cross country from Alfred, NY, for about two days with their 9' long, 4' wide racer strapped to the top of Peifer's mother's Saab wagon.

## 18th University Conference on Glass Science (May 23-30, 2007) Now combined with ACerS GOMD Spring meeting!

**C**onference organizer, Dr. Matt Hall, assistant professor of biomaterials and glass science, has announced that the 18th University Conference on Glass Science is scheduled for May 20-23, 2007, Rochester, NY. The topic of the conference is "Mass Transport in Glasses and Glass-Forming Melts."

The Conference will be combined with the Glass and Optical Materials Division of the American Ceramic Society's Spring 2007 meeting. A single registration fee will give access to all UCG and GOMD programming.

Researchers from all areas of glass and optical materials science and technology are invited to attend this special combined conference and participate in a broad array of symposia encompassing Glass Science, Glass Technology, Optical Materials, and Transport Phenomena in Glasses and Glass Forming Melts. Joint sessions of mutual interest to both UCG and GOMD are also planned.

A Festschrift in honor of Professor Emeritus Connie Moynihan, professor of materials engineering, Rensselaer Polytechnic Institute, and author or co-author of over 180 publications on glass, will be held as Symposium 5 of the joint meeting.

Details will be posted at <http://engineering.alfred.edu/outreach/conf/> as they are available.



Dr. Matt Hall

## Peek is McMahon Achievement Award winner

Jennifer Peek, a senior glass science engineering major at the Kazuo Inamori School of Engineering at Alfred University, is this year's recipient of the McMahon Achievement Award for outstanding performance while in a co-operative work-study experience. Peek was recognized for her achievement as part of the annual McMahon Award Lecture program, September 7, 2006.



Jennifer Peek

Peek, spent the spring semester working at Pratt & Whitney – United Technologies in East Hartford, CT.

“Jennifer has been an asset to the lab as a good experimentalist as well as a dependable and reliable engineer,” said Manager Raymond K. Kersey. In nominating her for the award, which is presented annually to the engineering student with the most exemplary co-op experience, Kersey wrote Peek “had an

immediate positive impact from the first day she was here.” She was assigned to the Engine Rotor Life Extension program, and was also asked to manage the tensile test area, running both standard and non-standard tests.

“A particularly important job in the tensile test area was the O-ring Viton project where she managed, executed and presented the results of the testing” through two phases of the program, Kersey wrote. “The scope of the O-ring Viton project was the characterization of strength and ductility data for the rubber O-rings and to establish protocol for this unique testing procedure.”

As a result of Peek's work, the procedure will be implemented “as the established Pratt & Whitney standard work for O-ring testing,” Kersey said, and the “results of this study will unify testing procedures, while following ASTM (American Society for Testing and Materials Standards), to reduce industry data scatter when comparing data between all military divisions, British Petroleum Corp., Exxon Mobile and Pratt & Whitney.”

## Skorski awarded ASM Scholarship

Dan Skorski (junior CES) has been awarded a \$6000 George A. Roberts Scholarship by the ASM Materials Education foundation.



Dan Skorski

The George A. Roberts Scholarship was established through a generous contribution by

Dr. George A. Roberts, Past President of ASM. Up to seven scholarships at \$6,000 each are awarded annually.

Currently, a total of 37 scholarships are awarded annually through the ASM International Foundation. For more information about ASM Scholarship programs and to download an application, go to <http://www.asminternational.org/> and follow

## AU hosts eight for Fall 2006 - Study Abroad is a popular 2-way street!

The Kazuo Inamori School of Engineering is pleased to host eight students from our study abroad partners for the Fall 2006 semester.

During the Spring 2006 semester, five Engineers enjoyed the Study Abroad experience: Stephanie Morris (junior, CES) in Limoges, France (ENSCI), Brian Piccardo (junior MSE) and Dan Griffin (junior MSE) in Castellon, Spain (Universitat Jaume I), and



From left to right, Nolwenn Chouard (Ecole Nationale Superieure de Ceramique Industrielle (ENSCI), Limoges, France), Manon Lalande (ENSCI), and Carmen Claret (Universitat Jaume I, Castellon, Spain).

Adam Willsey (senior and



From left to right): Alexander Bauer; Leonhard Klein; Markus Krottenthaler; Daniel van Opdenbosch, all from the Univ. Erlangen-Nuernberg (Germany). Not pictured, Georg Neubauer, also from Erlangen)

CES)

## Team Primal at XRG Malibu, CA

(Continued from page 1)

that pivot with arm movement.

"It has been pretty much all I worked on, other than school work," said Peifer, who dedicated spring break to the car and returned to school after spring term to work daily on it.

Hanes, the driver, created the layered body — four layers of fiberglass, one of polyester filler. The car is designed to be driven head first, arms-extended, Superman-style, with the driver hooked into a climbing harness that acts as a safety belt. No other team chose that driving position — selected by Peifer and Hanes to boost aerodynamics.

On race day, the AU team overcame a



Peifer repositioned the axles to alter weight distribution after test runs on the California course. Total weight (car + driver) was restricted to 350lb.

persistent braking problem to get in four runs with Hanes reaching a top speed of 56 MPH and turned in a course time of

2:42 on the last run. (The brakes had melted on the very steep, sharply curved course during practice - Chrysler generously supplied new brake pads so their fellow competitors could continue.)

Chrysler had the highest top speed of 60 MPH and Honda had the fastest course time of 2:31. Overall, AU's Team Primal finished 6th in both time and speed, impressing the competition. Nine corporate and two university teams were in the final competition.

Peifer, as part of a group of five senior mechanical engineers, is working on upgrading last year's entry or making a new one for his senior design project before racing XGR again next summer.

## Engineer helps launch AU Women's Leadership Center

Dr. Elizabeth Robinson Judson (CE '82) delivers dedication speech

The Alfred University Women's Leadership Center dedication was held as part of Reunion 2006 Weekend events, June 13, 2006.

To become a leader requires "a level of self-confidence" that many young women don't have. "They need to learn to take a risk to be a leader," remarked Dr. Elizabeth Robinson Judson (CE '82), a member of the Women's Leadership Center Advisory Board. One of the goals of the AU Women's Leadership Center is to "improve our women students' self-esteem, to allow them to develop, and

practice, ethical leadership skills."

A member of the Alfred University Board of Trustees, Judson is currently the general manager for Verco Materials, a Georgia Tech Venturelab company.

The Women's Leadership Center builds on AU's heritage as the first truly co-educational institution in the nation.

The WLC offers AU's women students the opportunity to explore and fulfill their



Dr. Beth Judson

leadership potential personally, professionally, and in their communities. We do this by bringing powerful female role models to campus, fostering connections between female students and AU graduates, and offering leadership-building experiences both within and outside of the classroom.

Other AU Engineers serving on the advisory board include Teri

Knopf Pullara (IE'88) and Susan (Vitch) Rozak (CE'86).

## Brown-Shaklee and Amoroso win Ceradyne prizes

Two Alfred University students won 1st and 2nd place in the Ceradyne International Prizes for Professional Development competition, in "The Future of Ceramics" Student Paper Contest that was held in conjunction with the 1st International Congress on Ceramics.

Joel Moskowitz (CE '61), Chairman, CEO and President of Ceradyne, Inc. created the prizes. The Ceradyne Prizes

consisted of awards of \$2,000 (first), \$1500 (second) and \$500 (three honorable mentions).

Harlan Brown-Shaklee took 1st, winning \$2000 for paper titled "Virion particle capture with oxide ceramic substrates." Jake Amoroso won \$1500 for his 2nd place paper titled "The completely isolated gyroscope system."

Four AU graduate students, Amoroso, Brown-Shaklee (now at U Missouri Rolla),

Melissann Ashton-Patton, and Everton Henriques; submitted entries to the contest and, based on preliminary review of applications, all were selected for \$750 travel grants provided by the National Science Foundation. All travel grant winners took part in a poster session during the 1st International Congress on Ceramics, 25-29 June 2006, in Toronto, Canada to present their ideas for new, innovative applications for glass

## CEER funds eight new projects

The Center for Environmental and Energy Research (CEER) has received a \$1.2m grant supplement from the US Environmental Protection Agency. The award will provide funding for eight graduate research projects, commencing September 2006, reports Terese Vascott, CEER Interim Director.

Funded projects were recommended for consideration by CEER's Science Advisory Committee at the February 2006 annual meeting at Alfred University and recently approved by the EPA. Projects are described below (Descriptions of these projects can



Dr. Bill Carty



Dr. Rebecca  
DeRosa



Dr. Jim Shelby



Dr. Jim Varner



Dr. David Earl



Dr. Scott Misture



Dr. Doreen  
Edwards

*Emissions Reduction of Commercial Glassmaking Using Selective Batching*  
(Dr. William M. Carty)

*The Use of Fly Ash in the Production of SiAlON Based Structural Ceramics*  
(Dr. James R. Varner and Dr. David A. Earl)

*Microarray for Contaminated Water Analysis*  
(Dr. Rebecca L. DeRosa and Dr. Jean A. Cardinale (picture not available))

*Magnesium Rich Coatings for Corrosion Control of Reactive Metal Alloys*  
(Dr. Rebecca L. DeRosa)

*Nanoscale Layered Photocatalysts*  
(Dr. Scott T. Misture and Dr. Doreen D. Edwards)

*Tunneled Titanate Photocatalysts for Environmental Remediation and Hydrogen Generation*  
(Dr. Doreen D. Edwards and Dr. Scott T. Misture)

*Recovery and Purification of Hydrogen from Mixed Gas Streams*  
(Dr. James E. Shelby)

*Novel Glass-Ceramic Gas Separation Membranes* ( Dr. Scott T. Misture)

## CACT annual report shows excellent outcomes for NYS Industry

The Center for Advanced Ceramic Technology presented a semi-annual update report to its external advisory board (CACT EAB) at their meeting on September 7, 2006.

Member companies reported nearly \$100M NYS economic impact on their bottom lines due to targeted research conducted through CACT – one highlight of the CACT annual report. CACT currently has approximately 30 Affiliate and Associate companies ranging in size from small start-ups to large multinational corporations - all finding value in access to the unique engineering faculty and facilities of the NYS College of Ceramics and the Kazuo Inamori School of Engineering.

Nearly thirty new short and long term projects were initiated during the report period as well as new academic and scientific interactions on nanotechnology and electromagnetic processing.

For more information on the CACT, its programs and how the CACT could help your company's bottom line, email Dr. Licio Pennisi, CACT Asst. Director,



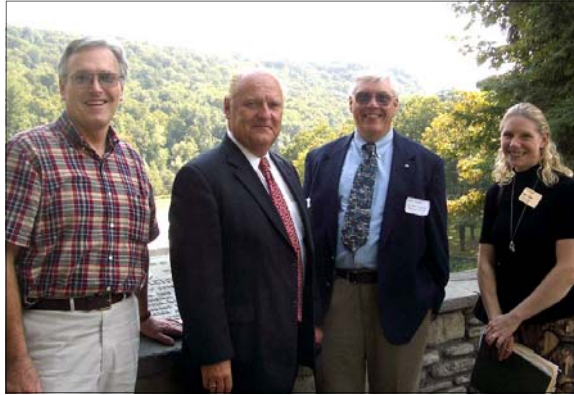
Standing, from l-r: Dr. Vasantha Amarakoon (CACT director); Dr. Steve Arrasmith (CACT Asst. Director); Dr. Nick Burlingame (Xylon); Mike Kaspyrzyk (Schunk-Inex Corp.); Eric Urutti (Ceramics Corridor Innovation Center (CCIC)); Mr. Gary DelRegno (Business Development, CACT); Dr. Robert Locker (Corning Inc., CACT EAB Chairman); Jon Wilder (Exec. Director, CCIC); Bill Reinhardt (NYS Energy Research and Development Authority (NYSERDA)); Dr. Licio Pennisi (Asst. director, CACT); Ed Vroman (Refractron); Mike Clement (Ferronics, Inc.); Gunnar Walmet (NYSERDA); Fred Calnan (Consultant). Seated, from l-r: Ms. Deb Chilson (CACT secretary); Ms. Ly Kesse (Grant Administrator, AU); Ms. Carla Orosz (New York Contracts Administrator, NYSCC).

## CANY holds Fall meeting, makes plans for the future

The Ceramic Association of New York (CANY) held its Fall meeting on September 7, 2006, at the Glen Iris Inn at Letchworth State Park.

The afternoon's discussions and dinner meeting, following the Annual McMahon Award Lecture at Alfred University, focused on maintaining and extending the professional relationships and personal friendships among the membership. Lively discussion centered on CANY's need to revitalize its mission, to increase its relevance in today's business climate, and attract a more diverse membership.

CANY was established by Dean Major Holmes at the New York State College of Ceramics in 1933, to help shape the emerging research programs



Fred Calnan (Consultant), Jon Wilder (Ceramics Corridor Innovation Center), Mike Kasprzyk (Schunk-Inex Corp.), and Emilie Carney (Administrative Assistant, Continuing Education/Outreach) enjoy the view overlooking the gorge at Letchworth prior to the CANY dinner.

of the young school. CANY has continued this tradition into the 21st century, with a continuing relationship with the CACT as

it strives to best serve the needs of the New York State ceramic industry.

CANY strives to encourage communication among ceramic companies, universities and government agencies, stimulate interest in ceramic-related education in NY at all levels and promotes development of ceramic industries and use of ceramic materials in New York State. Membership in CANY is open to any entity (individual, corporate, educational, or otherwise) interested in furthering the objectives of the association and meeting eligibility requirements.

All interested in CANY should contact Marlene Wightman, 607-871-2425, or [wightman@alfred.edu](mailto:wightman@alfred.edu).

## Samsung Fellows 2006-07

Samsung Corning Precision Glass Company in Korea has been sending groups of professionals to the Alfred University's Kazuo Inamori School of Engineering for three years. All have BS and MS degrees in various science and engineering disciplines, but have come to AU because of our specialty courses in glass and ceramics and will be on campus for one year.



Back Row: Left to right: Won Gyu Lee, Hae Sung Shim, Jong Sung Lee, Dong Wook Lee, KiHwan No, Dae Young Yoo.  
Front Row: Left to right: Bong Ki Lee and Se Yeol Lim

## Fractography of Glasses and Ceramics V Meeting follow-up.

Conference Co-Organizers Professor Jim Varner (AU) and George Quinn (NIST) report the meeting was a great success and thank all who attended the July 2006 event in Rochester, NY.

Marlene Wightman (AU) is nearing

completion of the compilation of contributions. When the manuscripts are all in, the American Ceramic Society will publish the Conference proceedings.

Registered conference participants will receive their copies automatically. For information about reserving your

copy of the proceedings of Fractography of Glasses and Ceramics V, please send an email to Marlene Wightman, [wightman@alfred.edu](mailto:wightman@alfred.edu).

## Scholarship prizes increased for 2006 winners

### AU Engineering and Materials Science Day, October 26, 2006

The stakes are up for winners of the annual Engineering and Materials Science Day competition, part of a full-day program for high school juniors at Alfred University on October 26, 2006.

This year, the first-place winner in the revamped competition for the Kazuo Inamori School of Engineering will be entitled to a \$10,000 scholarship – \$2,500 a year for four years – if he or she enrolls as an engineering major at Alfred University. Awards are based on the results of an examination administered in the morning.

Previously, there were two scholarships offered, each for \$1,000 a year for four years.

There will also be scholarships awarded for second- and third-place winners. The second-place winner will

receive an \$8,000 scholarship – \$2,000 a year for four years – and the third-place winner will receive a \$6,000 scholarship – \$1,500 a year for four years.

The Kazuo Inamori School of Engineering offers programs in biomedical materials engineering science, ceramic engineering, glass science engineering and materials science engineering, all of which are part of the College of Ceramics, a state-supported unit that Alfred University operates under a contract with the State University of New York. Because of the state support, the tuition for students enrolling in those programs is reduced for in-state residents. The School also offers electrical and mechanical engineering, which do not receive state support.

Each school may send a maximum of 10 junior and/or senior students to participate in Engineering and Materials

Science Day and compete for the scholarships. Registration will begin at 8:30 a.m., with opening remarks scheduled for 9 a.m. Following the scholarship examination, students will tour the engineering facilities and then go to Powell Campus Center dining hall for lunch. After lunch, prior to the announcement of the competition winners, there will be scientific and technical presentations.

For more complete information, go to <http://engineering.alfred.edu/outreach>.

Schools interested in sending students to Engineering and Materials Science Day are asked to email Marlene Wightman, [wightman@alfred.edu](mailto:wightman@alfred.edu), or call 607.871.2425. Cost is \$7 per student to cover the cost of lunch and refreshments. An adult chaperone is required to accompany each group of students, but there is no charge for the adults. Registrations are

## Faculty News ...

**Dr. L. David Pye**, dean emeritus NYS College of Ceramics, was a keynote speaker at the 8th Intl. Conference on the Fusion and Processing of Glass, Dresden, Germany, June 12-14, 2006. Also participating in the meeting were Dr. Jim Varner, Kruson Professor of Ceramic Engineering, and Dr. William Carty, professor of ceramic engineering and Dr. Scott Misture, associate professor of materials science, who presented an invited talk "Reaction Mechanisms and Kinetics of Melting in the SLS and Borosilicate Glass Systems"



Dr. Dave Pye

**Dr. Alastair N. Cormack**, Fr chette Professor of Ceramic Science and dean of the Kazuo Inamori School of Engineering, recently traveled to Prague, The Czech Republic, to deliver the opening lecture at NCM10, the 10th International Conference on the Structure of Non-Crystalline Materials. His lecture was entitled, "Molecular Dynamics Simulations of Glasses". More than 200



Dr. Alastair Cormack

people were registered for this meeting. Cormack is also a member of the International Advisory Board for the NCM series of international conferences.

**Dr. Matt Hall**, assistant professor of biomaterials and glass science, will give two talks related to the ongoing NSF-funded hydrogen storage studies with Dr. Jim Shelby, McMahan Professor of Ceramic engineering and professor of glass science: one talk will be on the AU campus for the Environmental Sciences seminar series, the other talk will be presented to the Olean section of the American Society of Mechanical Engineers.

**Dr. Scott Misture** served on the organizing committee of the recent 2006 Denver X-ray Conference. The 55th Annual was held August 7-11 in Denver, Colorado. Misture also chaired the session on "In-situ Diffraction," and was an author on three technical presentations: "High Temperature Diffraction to



Dr. Matt Hall

develop Solid Oxide Fuel Cell Sealing Glasses" (M.D. Dolan, J.S. White, E.I. Henriques, K.B. Stallone and Scott T. Misture); "Phase Instability of  $\text{Sr}_x\text{La}_{1-x}\text{CoO}_{3-d}$ : A High Temperature Diffraction Study" (Jeffrey White, Xiyong Chen, Stuart Adler, and Scott Misture); and "An Exafs Study of Photographic Development in Photothermographic Films" (T N Blanton, Eastman Kodak R&D, D.R Whitcomb, Eastman Kodak Co., and Scott T. Misture.

Misture also presented at the 8th International conference on inorganic membranes, Cincinnati, OH, July 2006, on Synthesis and Characterizations of Supported Pure Silica Sodalite Membranes by In-situ Crystallization (with Zhenkun Zheng, Jianhua Tong, Vadim V. Gulians (Univ. of Cincinnati).

Misture will present further work on "Synthesis and Characterization of Silica Sodalite Membranes Obtained by in-Situ Crystallization and Secondary Growth Methods," at the 2006 Annual Meeting of the American Institute of Chemical Engineers, November 12-17, 2006, in San Francisco, CA.



Dr. Scott Misture

# Team Primal 2006 XGR Greenlight Gravity Series Tuna Canyon Road in Malibu, CA, July 2006



Team Primal's Mike Hanes (left) and Steve Peifer (right) with their XGR racer.



"Primal Impulse" - ready to race!

### Race Results

2006 XGR Malibu Race Place		Time (seconds)
1	Honda	151.342
2	ATA	155.336
3	Chrysler	156.845
4	UC Irvine	158.150
5	Mazda	159.471
6	Alfred University	161.230
7	Greenlight	167.400
8	Courtney Hansen	176.842
9	US Army	178.395
10	Leisure Capital	192.913
11	Edmonds	238.979

2006 XGR Malibu Race Place		Top Speed (mph)
1	Chrysler	60
2	Honda	59
3	Mazda	59
4	ATA	57
5	UC Irvine	56
6	Alfred University	56
7	Greenlight	55
8	US Army	51
9	Courtney Hansen	41
10	Edmonds	36



A race official checks out Driver Hanes prior to the race.

Honda's winning entry—look out next year!



The competition line-up!



# Alfred University Faculty and Alumni at MS&T'06

**Cincinnati, Ohio, October 15-19, 2006**

Congratulate our new ACerS Fellows at the Tuesday evening Alumni reception! Four AU alumni (of the sixteen total) have been elected to fellowship in the American Ceramic Society, and will be recognized at the ACerS Awards Banquet, Monday, October 16th.

**Jeffrey Kohli** (BS, MS in CE; PhD Glass 1991) is the European New Products Manager, Environmental Technologies, at Corning Incorporated, Corning, NY. Kohli has been with Corning Inc. since 1991. Prior to joining Corning, he was with Schott Glass Technologies and Galileo Electro-Optics.

**David K. Peeler** (MS CE '89) is a Senior Fellow Engineer at Savannah River National Laboratory/Washington Savannah River Company in Aiken, South Carolina. He received his PhD in 1993 from Clemson. Peeler was with Battelle, Pacific Northwest National Laboratory until 1995, when he joined Washington Savannah River Company.

**Kathleen Richardson** (BS '82, MS '88 and PhD '92, all in Glass) is currently Professor and Director of the School of Materials Science and Engineering at Clemson University, Clemson, SC. Richardson joined Clemson in January 2005, following her previous post as Associate Professor of Optics, Chemistry and MMAE at the University of Central Florida's College of Optics and Photonics, where she worked for 13 years.

**Lester F. Rickard** (BS CE '65) was employed by Buffalo China, Inc. from 1964-2004. Rickard received his MBA from Canesius College in 1976. During his 40 years at Buffalo China he held the positions of Development Engineer, Process Engineer/Project Engineer, VP Glost Operations, VP/Technical Director, Manager Quality Assurance, and Senior Process Engineer.

**F**aculty presentations at MS&T'06 cover a wide and interesting range of topics and include several invited talks!

## GLASSES AND GLASS PROPERTIES

*Glass Forming Regions and Properties of RO-CsO-GeO<sub>2</sub> Glasses, Melissann M. Ashton-Patton; James E. Shelby*

*Photo-Induced Hydrogen Diffusion in Hollow Glass Microspheres, Michael J. Snyder; Mathew M. Hall; James E. Shelby*

*Hollow Glass Microspheres for Hydrogen Storage, Fabienne C. Raszewski; Matthew M. Hall; James E. Shelby*

*Effects of Zinc- and Copper-Doped Sol-Gel Glasses on the Inflammatory Response in Murine Macrophages, Matthew Hall; Elizabeth Varmette; Lisa Flick*

*Crystallization and Stability of BCAS Glass Sealants in SOFCs, Scott Misture; Kevin Stallone; Everton Henriques; Jeffrey White; Michelene Miller*

*An Initial Study of High-Temperature Reactions between Commercial Cullet and Glass-Ceramic Contaminants, Christopher W. Sinton; Andrew Crawford; Janka Seeger; Lothar Wondraczek; Joachim Deubener; Scott Misture*

*Formation of Ge Nanocrystals from Germanate Glasses, Amanda L. Youchak; James E. Shelby*

## CERAMIC MATERIALS AND PROPERTIES

*Photocatalytic Behavior of Complex Oxide Ceramics, Everton I. Henriques; Hyun-Joon Kim; Jake Amoroso; Stephen Sanford; Doreen Edwards; Scott T. Misture*

*The Influence of Cation Concentration on DNA Attachment to Beta- Gallia Rutile Surfaces, Nathan Empie; Doreen D. Edwards*

*Nanoscale Ordering in Scandium Doped Zirconia and Gadolinium Doped Ceria (Invited), Alastair N. Cormack; Anna E. McHale*

*C6B Carbon Nanotubes, Ling Wang; Linda E. Jones*

*Synthesis and Transport Studies of One-Dimensional Ion Conductors: A<sub>x</sub>Ga<sub>4-x</sub>Ti<sub>1-x</sub>O<sub>8</sub> (A=Na, Li, K, Ag, H), Jake Amoroso; Doreen D. Edwards*

*Study on Nano-Tubular Halloysite, Dingqiang Li; Cassandra C. Clark; Erin A. Collins; Maggie L. Ezell; Yuandan Liu; Ward E. Votava; Qiquan Feng; Xingwu Wang*

*Critical Role of ZrO<sub>2</sub> on Mechanical Properties of Microwave Sintered Silicon Nitride Ceramics, Sreekumar Chockalingam; David A. Earl*

*Chemical Synthesis and Sintering of Gd Doped CeO<sub>2</sub>SiO<sub>2</sub> and CeO<sub>2</sub>AlO<sub>3</sub> Nanocomposites for SOFC Applications, Rajalekshmi C. Pillai; Vasantha R. W. Amarakoon*

*Characterization of Glazes Using Chemical Force Microscopy and Microcalorimetry, Holly Moschiano; Alexis Clare*

*Phase Stability of La<sub>1-x</sub>Sr<sub>x</sub>CoO<sub>3-d</sub> at Low Oxygen Partial Pressures, Scott Misture; Jeffrey S. White; Xiyong Chen; Stuart B. Adler*

## METALS PROPERTIES

*Investigation of Clad Metals for Use as Bipolar Plate Material in PEM Fuel Cell Stacks (Invited), John S. Rich; Alan M. Meier; Jin Yong Kim; Gordon Xia; Gary Yang; K. Scott Weil*

## BIO MATERIALS

*Unique Challenges All across the Nanobiomaterials Interface, (Invited) Alan H. Goldstein*

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