

SEAC *communications*

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As always:

We thank our sponsors and welcome new ones...

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Quote to remember:

**"To some people it looks like I am not doing anything.
At the nanoscopic level, I am really quite busy."**

Mike Zach

President's Message

Mike Weaver, PITTCON 2002, and SEAC Student Travel Awards

Almost immediately upon returning from a wonderful SEAC gathering at this year's PITTCON in March, the entire electrochemistry community was deeply saddened to learn of the sudden passing of Mike Weaver (Purdue University). Mike was an enormously talented scientist who made many significant contributions to our field, especially relating to studies of the fundamental processes of adsorption and catalysis at electrode/solution interfaces (see special tributes in this issue by Andrzej Wiekowski and Joe Hupp). He was young (55) and in the prime of his career. It is another example of how short and precious life can be. On behalf of all SEAC members, I want to express our condolences to Mike's family and his colleagues at Purdue. This is a great loss to our small community, but I am sure that many elements of Mike's pioneering research work will live on through the continued efforts of others in the field. This will be the greatest tribute of all to Mike's life and scientific career!

This year's PITTCON was another huge success for our group. Of course the entire PITTCON week kicked off in grand electroanalytical style, when Al Bard gave the plenary lecture, tracing the history of advances in our field. It was great seeing the pictures of the old electroanalytical instruments on which so many of the great discoveries in our sub-discipline were made. The SEAC Awards Symposium honoring Christian Amatore (Reilley Award) and Andrew Hillier (Young Investigator Award) was very well attended and the presentations by all participants were truly outstanding. There was also an especially large turnout at the annual SEAC evening mixer. This event has become one of most enjoyable parts of the meeting. The 2003 PITTCON in Orlando promises to be equally successful. Congratulations in advance go to Rick McCreery, winner of the 2003 Reilley Award, and Julie Macpherson, winner of the 2003 Young Investigator Award. Both will be honored at the SEAC Awards Symposium scheduled for Wednesday, March 12, 2003, being organized by Greg Swain. So please mark your calendars!

At the most recent SEAC Board of Directors meeting in New Orleans, the Board had extended discussions on how to attract more young members into our organization. It seems that more and more electroanalytical chemists in academia are pursuing research directions that are highly interdisciplinary in nature (materials, biomedical, etc.). Hence, students and post-docs training in such laboratories are often torn as to what professional niche/organization they should be associated with. For example, they may be using novel microelectrodes to study the release of insulin secretion from single pancreatic cells, in the hope of understanding the origin of diabetes. They may even present their results at a national diabetes or physiology conferences. Yet, the technology that allows such studies is clearly based on electroanalytical principles, and SEAC certainly wants such individuals to know that their broad interests and novel applications are most welcome in our society. This is precisely what makes SEAC such a diverse and scientifically stimulating group.

As a means to further promote interest and membership among this next generation of interdisciplinary electroanalytical chemists, we will attempt to expand our current graduate student travel awards program for the coming year (hopefully to at least 3/year). These awards (up to \$500) are given annually on a competitive basis. All graduate students who will present a paper or poster at PITTCON are eligible. To encourage applications, the deadline has now been extended to January 15 each year (see application information in this newsletter). The winners will also be invited to present a poster summarizing their work at our annual PITTCON SEAC mixer. I encourage all students (and mentors) to consider applying for these awards in the coming year.

Mark Meyerhoff

Remembering Mike Weaver



Below, **Pete Kissinger, Andrzej Wieckowski, Joe Hupp** and **Fred Anson** remember Mike Weaver, the scientist, friend, collaborator, teacher, and colleague. Pete Kissinger and Mike Weaver go a long way. A colleague of mine recalls stories from his alma mater of Mike and Pete, as assistant professors, who some felt were competing for the same position; instead, as he recalls, they elected to leave and remain friends; and of the fellow grad students' exposure to British English when Mike recommended in class the use of rubbers (rubber erasers). Mike's early experimental work on verification of electron transfer theories, which blazed a major scientific trail, was great to witness, as was Mike's powerful focus and his daunting intellect. His recent experimental work has been pushing the resolution frontier in the characterization of surface morphology and surface redox reactivity. We remember him and his science here.

Pete Kissinger writes: Memorial Resolution for MICHAEL J. WEAVER Professor of Chemistry

March 30, 1947 - March 21, 2002

Professor Michael J. Weaver of 3388 Peppermill Drive, West Lafayette, IN, died in his home on Thursday, March 21. He was 54 years old. Surviving are his parents and a sister all residing in London.

Professor Weaver was born in London, England, March 30, 1947. He received his B.Sc. degree from Birkbeck College, London University in 1968 and his Ph.D. degree from Imperial College, London University, in 1972. He served as a postdoctoral research associate at the California Institute of Technology from 1972 to 1975. In 1975, he began his academic career as an assistant professor at Michigan State University. In 1982 he came to Purdue University as an associate professor and was promoted to professor in 1985.

Professor Weaver was interested in the molecular details of heterogeneous electron transfer reactions at well characterized electrode surfaces. He was a participant in both the physical and analytical chemistry groups. This was fitting since his research involved both fundamental, mechanistic studies, and the application of this knowledge to improving analytical measurements. His studies led him to become a world-renowned expert in the area of surface spectroscopy, including Raman, infrared and scanning techniques.

Professor Weaver made many pivotal contributions to understanding Electron transfer at surfaces. He developed experimental and conceptual means for probing electrode reaction kinetics. He used non-isothermal electrochemical cell techniques to explore solvation factors in redox chemistry. He pioneered the use of surface enhanced Raman scattering to monitor changes in the structure of surface bonded molecules during heterogeneous electron transfer. He extended surface enhanced Raman to a host of transition metals by developing experimental techniques for depositing ultra-thin layers deposited over gold. He designed infrared Fourier transform instrumentation that could be used to obtain the vibrational spectral differences of molecular species during changes in electrode potential. He made seminal contributions to the use of scanning tunneling microscopy as a probe of atomic-level structure and dynamics at electrochemical interfaces. Most recently, he took a leading role in applying density functional theory to investigate the vibrational properties of electrochemical adsorbates as a function of electric field-dependent chemical bonding.

A trademark of Professor Weaver's research was interdisciplinary collaborations. He had joint research programs with several groups in the United States, Spain, The Netherlands, and China. He loved to travel and these fruitful joint scientific ventures gave him many opportunities.

The overall impact of Professor Weaver's work is clearly reflected in his record of scientific citations. He was one of the 98 most highly cited chemists worldwide during the period 1981 to 2000. The quality of his work is reflected in the number of prestigious scientific awards he has received - the 1989 David C. Grahame Award from the Electrochemical Society; the 1995 Faraday Electrochemistry Medal from the Royal Society of Chemistry; the 1997 Carl Wagner Memorial Award from the Electrochemical Society; and the 1999 Electrochemistry Award from the American Chemical Society.

Professor Weaver was an avid rail fan who loved steam powered trains. During his professional trips he would use the most circuitous routes so that he could fit in excursion rides. Indeed, it has often been said, with a smile, that his collaborations in China were due in great part to the existence of mainline steam. During his postdoctoral studies at Cal Tech he spent vacations working as a volunteer at the Cumbres and Toltec narrow gauge railroad on the New Mexico - Colorado border. Once asked by a model railroader if he had ever hand-laid a turnout, he replied yes. It took a while before it became obvious he meant a real one - an accomplishment not matched by many chemists.

At the time of his death, Professor Weaver had an active research group. Indeed, over his academic career he mentored a large number of graduate students, many who have made their own mark on the scientific enterprise. Additionally, he mentored several younger faculty across the country who were just starting their research programs. He will be greatly missed by his research group, former students, collaborators and colleagues.

Andrzej Wieckowski writes: Mike came to Purdue University as an associate professor in 1982, after having established his scientific program. Originally, Mike pursued studies of adsorption and the structure of the electrical double layer, and heterogeneous and homogeneous redox. Explorations of chemical effects of solvent dynamics on electron transfer kinetics brought him widespread recognition in the condensed-phase as well as electrochemical communities. At Purdue, Mike championed the use of spectroscopic methods in conducting fundamental molecular-level studies of metal/solution interfaces. He extended the spectroscopic work to single crystals of platinum, rhodium and palladium, and created templates for spectroscopic *in situ* characterization of electrochemical interfaces. He has contributed centrally to the use of scanning tunneling microscopy (STM) as a probe of atomic-level structure and dynamics. He demonstrated the tremendous possibilities for using vibrational methods, Fourier Transformed Infrared (FTIR) spectroscopy and surface enhanced Raman spectroscopy (SERS) for *in situ* surface characterization, by combining new-generation spectrometers with novel new methods of electrode surface preparations, both single crystals and nanoparticles. His work also focused on exploring surface chemistry in gas-phase, and ultra-high *vacuum* environments, including cryostatic measurements, thus leading to discovery of seminal correlations between small molecule adsorption in electrochemical cells and in ultra-high vacuum.

The productivity, originality and creativity that characterized all of Mike's research endeavors were of the highest degree. His progress is reported in over 400 research articles (working with a group usually smaller than ten students), and his key publications are classic papers of electrochemistry. He educated many young scientists, who are both in Academia and Industry. He was indeed extremely dedicated to his students who will miss him immensely. He had a real joy in advising them, and most of all writing publications with them, displaying mastery in both discovery and style. Mike was a key member of the renowned Analytical Chemistry Division at Purdue, and was also associated with Purdue Physical Chemistry group. He was most recently nominated for the Purdue's Most Distinguished Professor award. As the pivotal testimony of his accomplishments, Mike was among the twenty most cited chemists worldwide in 1984-1991, and

was recognized as one of the US's top 100 chemists from 1981 - 2000 according to a yearly report issued by the International Science Institute.

With Mike's death we lost an excellent truthful peer and an uncompromised reviewer who always awarded creativity and freedom of scientific pursuit. Mike was not only an excellent scientist, but also a power broker between various interests, and an influential speaker for electrochemistry as a whole. While he focused on physical and surface aspects of electrochemistry, he was opened to other ideas this creative field always generates, having unique sensitivity to effort and value. His loss set the community a decade back, and major efforts will be needed to restore the equilibrium. This tragic event is an astronomical loss to fundamental electrochemistry, which may never be fully restored, at least by this generation of American electrochemists.

While science lost one of its most prominent and dedicated players, for me Mike was my dear friend whose absence is still unreal and painful.

Andrzej Wieckowski

Joe Hupp writes: Elsewhere in this issue is a wonderful essay by Pete Kissinger, Mike Weaver's colleague at Purdue and predecessor at Michigan State. Pete's essay really captures Mike's unique personality, and of course, also nicely describes his tremendous contributions to electrochemistry and surface science. It's appropriate, I think, to add to the comments from one more perspective: Mike's influence as a teacher and mentor. In his career as a professor he advised and trained somewhere around three dozen Ph.D.'s. and probably a dozen or more postdocs. I had the opportunity as a beginning graduate student to join his group early in his career – right around the time he was awarded tenure and his first 5 or 6 students were completing their theses and moving on to become productive scientists elsewhere. What I most remember about my initial encounter with Mike was his almost unbelievable enthusiasm for electrochemistry. I think this was a universal experience. In any case, it didn't take long to realize that here was someone from whom you could expect to learn a tremendous amount of interesting science.

Mike's expectations of his research students were high – in part, I think, because he engaged them and invested in their projects intellectually to an extraordinary degree. No one left his lab without a fully developed work ethic! He was always interested in thinking about a problem further and understanding it at a deeper level. His intellectual persistence was most in evidence, I think, when he was writing scientific papers (which was essentially always). I suspect that just about anyone who worked with Mike got used to late night phone calls to discuss data and plot the discussion section of the next scientific paper – and there always was another paper. When the training was finished, though, his students and postdocs left not only with a strong education in how to do scientific research, but also with an ability to write and with enough Weaver publications on their resumes to guarantee good placements. He strongly believed that an important part of his obligation as a mentor was to write up and publish the work his students had done. He also believed in supporting the career development of his own graduates as well as other young scientists. He was generous with scientific advice and was outspoken in supporting the work of new researchers whom he felt had the potential to contribute importantly to electrochemistry and surface science. Mike obviously contributed tremendously, through his own research, to the development of electrochemical surface science. But, he also contributed importantly to chemistry as a whole as an inspiring mentor and trainer of new scientists.

Fred Anson writes: *Michael Weaver: Some Personal Recollections*

Michael J. Weaver occupies a special place on my list of unforgettable colleagues who I feel privileged to have known. He joined my group in 1972 as a post-doctoral fellow who had concentrated on fused salt electrochemistry in graduate school at Imperial College. He wanted to study some other aspects of electrochemistry while at Caltech and he did so with the

energetic gusto and indefatigable persistence that were among his numerous endearing characteristics. Our countless discussions of his research results were always vigorous, occasionally disputatious and often quite extended. I always came away from these sessions very impressed by Mike's intelligence, critical insights and extremely high scientific standards. I learned a great deal from my interactions with Mike. I take credit for helping him to learn to express himself more clearly and with many fewer words. I felt more than amply rewarded for my efforts by being exposed to the quality and quantity of terrific research that Mike produced and described.

We came to know each other's writing styles so well that after he left Caltech he claimed he could always spot my unsigned reviews of his papers. Similarly, I told Mike that I could identify his papers even if the authorship were not provided. His discursive writing style and delightful choice of vocabulary were unmistakable. Mike's surpassing abilities as a scientist were paralleled by his outstanding qualities as a teacher, mentor and counselor of his students. I am certain that being a member of the Weaver group was challenging, stimulating, rewarding and just plain fun. His ability to convey the excitement and satisfaction that can result from well-conceived experiments, carefully executed and thoughtfully analyzed, was abundant and a pleasure to witness.

Mike and I became good friends and we maintained a collegial relationship throughout his career that I appreciated and enjoyed. There was no former member of my group for whom I had greater respect, admiration and affection than Mike Weaver. The widespread recognition that he had already received and the additional honors that would surely have followed provide some solace but I will miss him and his cheerful phone calls a great deal. The innovative and creative chemistry that Michael Weaver accomplished and the group of outstanding students whom he inspired will serve as lasting tributes to this truly wonderful scientist.

Fred Anson



A memorial web site at Purdue:

<http://www.chem.purdue.edu/faculty/weavermemorial.htm>

2003 the 20th Reilley and the 12th Young Investigator Awards Announced.

Congratulations:

To Rick McCreery the 2003 Reilley Awardee, and Julie Macpherson the Young Investigator Award winner, for winning these prestigious Awards (see below). For more information check the SEAC Web Site at <http://seac.tufts.edu/awards.html>.



Among practitioners of bioelectroanalytical chemistry **Rick McCreery's** work on structural characterization of graphite electrodes is the benchmark. His work includes a much-cited 1991 Chapter in *Electroanalytical Chemistry* on "Carbon Electrodes: Structural Effects on Electron Transfer Kinetics". At Pittcon® 2002 Rick put together a Symposium on Long Range Electron Transfer: From Electrochemistry to Molecular Electronics, which took a serious look at theory and new experiments in this area, including those in Rick's laboratory. Reilley Award Symposium in his honor is scheduled for next years' Pittcon® on Wed March 13th. Congratulations Rick.



Congratulations to **Julie Macpherson** for the Young Investigator Award and best wishes for future success in her research in which she has been employing the smallest electrodes and new electroanalytical methods.

***SEAC Awards-* Nominations and Applications New Address and Deadlines.**

Note *below* the *new address* for the nominations and applications and the *new deadline* for the Graduate Student Travel Award.

Please submit your nominations for the Reilley and Young Investigator Awards and/or requests for further information on submissions to:

Professor Werner Kuhr
SEAC Awards Committee
Department of Chemistry
University of California - Riverside
Riverside, CA 92521

Tel: (909) 787-3485

Fax: (909) 787-4713

Email: werner.kuhr@ucr.edu

For further information check the SEAC Awards web site at: <http://seac.tufts.edu/awards.html>

Student members and would be-members:

Graduate Student Travel Award administered by SEAC is a great opportunity to get your work recognized and get support to present the work at Pittcon®.

The SEAC Graduate Student Travel Grant is awarded to promising graduate students to offset the cost of travel to the Pittsburgh Conference to deliver an oral presentation. The presentation should be on a topic related to the Dissertation or Thesis, and in some area or application of electroanalytical chemistry. Because the costs may vary, the amount of the award will be determined by SEAC and will be between \$250 and \$500. To spread the award as equitably as possible, no more than two awardees will be selected from any one research group and no more than three awards will be made to students from any one educational institution.

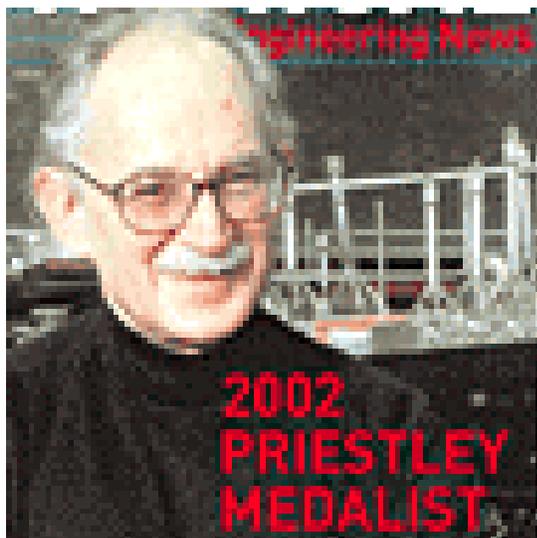
Nominations for travel grants are due to the SEAC Awards Committee Chair at the address below by **January 15th**. The nomination shall consist of the student's current graduate transcript, a copy of the abstract submitted to the Pittsburgh Conference, a complete resume, and a letter of recommendation from the student's research advisor. A candidate shall be considered for an award up to one year after the student's Ph.D. defense. Previous awardees will not be eligible.

Requests for further information should be directed **to:**

Professor Werner Kuhr
SEAC Awards Committee
Department of Chemistry
University of California - Riverside
Riverside, CA 92521

Tel: (909) 787-3485
Fax: (909) 787-4713
Email: werner.kuhr@ucr.edu

Congratulations to Al Bard 2002 Priestley Medal Winner.



It all started here - well almost. Al Bard was the 1st recipient of the Reilley Award (in 1984) and has continued as an active member of SEAC. Since 1984 we have had many occasions to congratulate Al on his significant accomplishments.

At this years' Pittcon® Al Bard kicked off the meeting with his lecture. The SEAC president was in the audience and has interesting insights in his message. A reception followed and the meeting and SEAC activities were off to a great start.

Did you know that....?

---Bard and Faulkner, *Electrochemical Methods* (1980) is the most cited analytical chemistry book, and has shown no decline in citations over the 20 year period of the first edition. It has been said that this statistic may "reflect activity in the field and usage of the book" (Anal. Chem. 73, 667A-670A, 2001). Not bad.

What else can be added to that? That the book is needed, and that it supports a dynamic and diverse field of science. Current practitioners and those in training have the benefit of the second edition, which is out now. ***Congratulations Al and keep it up!***

Joe Wang wins Citations Laureate Global Award.

Joe Wang has just been selected for the ISI Award for most citations for the 1991-2001 period. Joe is the Editor and founder of *Electroanalysis* and an active SEAC member. Based on the news release by ISI, the top 15 most Cited Authors in the fields of Science and Engineering have been selected using citation analysis on a 10 year period using the ISI-ESI (Essential Science Indicators). The award winners will be officially disclosed at The Citation Award Ceremony, which will be part of an ISI Celebration that will be held at the Montreal Science Center in Montreal Old Port on June 17 2002 during the ASEE Annual Conference and Exhibition. For more information see the ESI Web site at:<http://www.isinet.com/isi/products/rsg/products/esi/index.html>>and <http://www.asee.org/conferences/annual2002/montreal.cfm>>

Congratulations Joe!!!! Joe is not only on the list, he is at the TOP of the list. Wow, Joe! Number one in the world in both science and engineering (GC).

SEAC Members in the News-

Accomplishments of SEAC members continue to be recognized by the scientific community:

Fred Hawkrige, Virginia Commonwealth University, is the recipient of the 2002 American Microchemical Society Benedetti-Pichler Award. Fred will receive the award at EAS 2002 in Somerset, NJ, 18-22 November 2002.

It is hard to think of bioelectroanalytical chemistry without thinking of Fred's pioneering work on electrochemistry of redox proteins and his early work on mediation of protein electron transfer. Congratulations Fred!

Joel Harris, University of Utah -- Recipient of the 2002 New York Section of the Society for Applied Spectroscopy Gold Medal Award. Joel will also receive his award at EAS 2002 in Somerset, NJ, 18-22 November 2002.

At this year's Pittcon® Joel put together a Symposium on Analytical Chemistry of Nanomaterials with talks of SEACers Debra Rolison, Royce Murray, Dick Crooks, as well as Joel and Paul Bohn. During his standing room only lecture (normally reserved) Dick reminded the audience how good a conference Pittcon® is, and how it continues to get "better and better". At the Symposium Joel, acting as chair, announced the Reilley Award reception and said he was ready, as an honorary electrochemist, to celebrate with SEAC. We now congratulate him!

Jim Cox, Miami University (Oxford, Ohio) -- Recipient of the 2002 Cincinnati Section of the American Chemical Society Chemist of the Year Award. The Award was presented in March at the Society Meeting in Cincinnati chaired by Harry Mark.

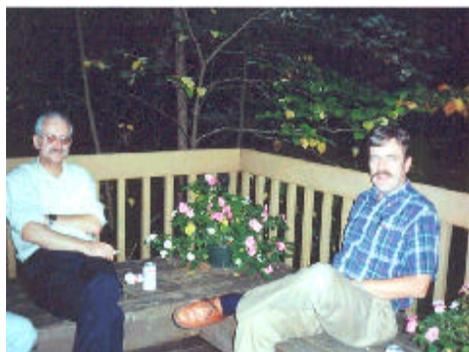
In his Award address Jim thanked his graduate students for their work that he said led to the award. There have been many great students and collaborators in Jim's group. Some (yours truly) did not make it easy for him. We congratulate him now!



Chris Rhodes, Naval Research Laboratory -- 2001 Provost's Dissertation award in the Science & Engineering category, University of Oklahoma. The Office of the Provost held an award ceremony honoring both Dr. Rhodes and his department on April 9. Dr. Rhodes received an inscribed certificate and \$1,000 cash prize.

Thanks to Debra Rolison for the news and a picture of Dr. Rhodes. Congratulations to all the Awardees!!

Make Plans for Pittcon® 2003.



This years' Pittcon® 2002 focused on a wide range of analytical chemistry science and the opportunities to participate, and learn, were definitely there.

Pittcon® has science at its core; the wide range of science at the meeting is impressive and growing. Steve Weber once said that to have a good meeting the community has to keep the good science coming, and the community does just that.

The exhibit of the analytical chemical instrumentation at Pittcon® is the biggest and most up to date, but you have to like walking to really see it.

Great participation at Pittcon® by the electrochemical science community has centered around SEAC and continues to grow and attract an audience. This year there were symposia and technical sessions on fundamentals of electron transfer, including new surfaces and nanomaterials, bioelectroanalytical chemistry, and electrochemical detection.

This years' gathering was also fun in its many celebrations of SEAC members' accomplishments, by the Reilley and Young Investigator, and Pittsburgh Analytical Chemistry Award Symposia, honoring Christian Amatore, Andrew Hillier, see pictures above and below, and Royce Murray. It did not hurt that the weather was wonderfully warm and that it all took place in New Orleans. Our own Adrian Michael, who said he is looking forward to a good meeting in Orlando, is the next years Pittcons'® 2003Program Chairman. See you there.



ECS BICENTENNIAL MEETING

You may already know.... about the symposia at the 201st Electrochemical Society meeting in Philadelphia, at the Society's 100 year celebration, that the SEACers were involved in, which included:

Inorganic Templates As Design Elements In Nanocomposites At Electrode Surfaces

Co-Chairs: M.M. Collinson and A. Fitch

The symposium focused on use of inorganic materials to template electrode surfaces. The inorganic materials are used to create layered domains, to create mesoporous surfaces of controlled diameter, and to control charge and/or charge distribution at electrode surfaces. Some typical examples that were focused on were clays, organoclays, zeolites, sol-gels, layered double hydroxides, and novel biological/inorganic matrices.

Template Based Strategies for the Fabrication of Porous Silicate Films - M. Collinson and A. Khramov (Kansas State)

Porphyrin Doped Vanadium Oxide Sol-Gel Material - F.J. Anaissi, F.M. Engelmann, H. Winnischofer, K. Araki, and H.E. Toma (University of Sao Paulo)

Electrochromic Properties of Mesoporous Tungsten and Niobium Oxides - W. Cheng, B. Dunn, and J. Zink (University of California)

Spectroelectrochemical Characterization of Charge Transport at Thin Films of Nanostructured Mesoporous Oxides - J. Long, W. Dong, A. Young, and D. Rolison (Naval Research Laboratory)

Kinetic Studies of Sol-gel Formed Ni and Ni-Co Oxide Films - V. Birss and I. Serebrennikova (University of Calgary)

Structure and Reactivity of Organized Layers and Multilayers Based on Two-Dimensional Conducting Polymers and Polyoxometallates - P.J. Kulesza, M. Chojak, K. Miecznikowski, A. Paderewska, M.A. Malik, and A. Kuhn (University of Warsaw)

Tethered Ferrocenes at Clay-Modified Electrodes: Effect of Clay Charge on Capacitance - A. Fitch and C. Swearingen (Loyola)

Colloid-Modified Electrodes: Electrochemically Driven Nano-Composite Formation in Clay Films - P. Joo (Hungarian Academy of Science)

Organoclay Modified Electrodes: The Influence of Acid Activation and Pillaring on the Electrochemical Activity of Montmorillonite - F. Lezou, D. Petridis, and P. Falaras (NCSR Demokritos)

Self-assembly of Upright 1,6-hexanedithiol Monolayers as Templates for Nanoparticles - S. Chah, J. Yi, E. Hutter, and J. Fendler (Clarkson University)

Protein-Nanoparticle Films - J. Rusling, B. Munge, L. Espinal, S. Suib, N. Hu, and Y. Zhou (University of Connecticut)

Laterally Controlled Metal Electrodeposition in Nanoporous Alumina Membranes - T. Sehayek, A. Vaskevich, and I. Rubinstein (Ben Gurion University)

and on:

**Progress In Methods Used To Solve Electrochemical Problems: Part 2 -
New Developments In Electrochemical Methods**

Physical Electrochemistry

Co-Chair: D. Buttry

In-situ EQCN and AFM Probing Mass Fluxes and Morphological Changes at Nanostructured Films - J. Luo, N. Kariuki, M. Maye, L. Han, A. Chun, I. Tahir (State University of New York at Binghamton), M. Hepel (State University of New York at Potsdam), and C.-J. Zhong (State University of New York at Binghamton)

In Situ Electrochemical Quartz Crystal Oscillator Monitoring on Electropolymerization of Pyrrole in the Presence of DNA and Conductivity Studies - J.-H. Yoon, S.-E. Bae, and C.-W. Lee (Korea University)

Electrochemical Quartz Crystal Microbalance (EQCM) Studies of Cd and Te Atomic Layer Formation and their Alternation to form CdTe (EC-ALE), using a Thin Layer Flow Cell - N. Srisook and J.L. Stickney (University of Georgia)

Investigating Semiconductor Trap States Energetics via Photothermal Beam Deflection and Photoacoustic Spectroscopy - A. Massari, K. Walters, S. Leytner, and J. Hupp (Northwestern University)

Nanotube Membrane Sensors - A New Paradigm in Electrochemical Sensing - M. Wirtz, S.B. Lee, E. Steinle, D. Mitchell, and C. Martin(University of Florida)

Synthesis and Electrochemical Properties of Poly(aniline boronic acid): A Novel Transduction Method for a Non-enzymatic Glucose Sensor and A Precursor Route to Substituted Polyanilines - E. Shoji and M. Freund(California Institute of Technology)

Electrochemical Examination of Cobalt Redox Chemistry in Thin Films - M. Spitler and L. Stuhl (ChemMotif, Inc.)

Electrochemical Reactivity at Heterogeneous Alloy Surfaces: Wall-Jet Flow Cell and SECM Studies - J. Seegmiller and D. Buttry(University of Wyoming)

-Thirty-Minute Intermission -
Poster Session

Co-Chair: D. Buttry

Observable Electric Potential and Electrochemical Potentials - J. Garrido, V. Compan, and M.L. Lopez (Universitat de Valencia)

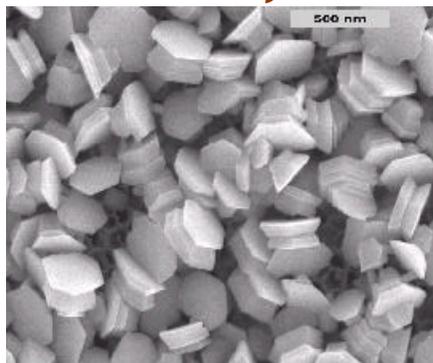
Solving the Liquid-Junction Potential Problem for Reference Electrodes - S. Broadley, S. Ragsdale, T.-Y. Chen, and H. Silverman (Broadley-James Corporation)

1The Wire Beam Electrode: A Novel Method of Studying Nonuniform Electrodeposition and Electrodeposition - Y.-J. Tan and K.Y. Lim (Nanyang Technological University)

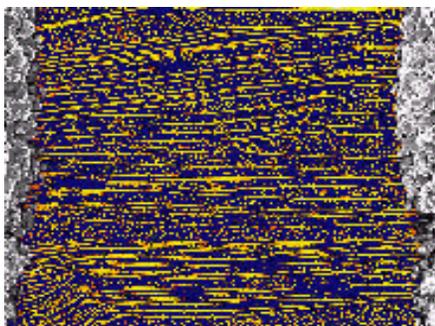
The Effect of Electrolytic Copper Plating Additive Decomposition By-products on HPLC and CVS Measurements - L. Lovejoy and S. Hues (Motorola Digital-DNA Labs)

FATHER'S DAY PICTURE POSTCARD

LIKE FATHER, LIKE SON:



The above is the latest from **Chuck Martin's** group of Zn on Anapore membranes.



This from **Reg Penner's** group of his "new nanowires".

Can you beat that? I am waiting for your submissions!

THE GRANDSON AIN'T BAD EITHER: Mike Zach continues the "heritage" with nano Krispy Kremes (the SEAC Newsletter, *SEAC Communications* **2002**, 18(1)). Here he writes about his latest exploits (see your **e-mail**) below.

On the Move

Mike Zach (now a postdoc at UC-Berkeley): [mzach\(at\)eps.berkeley.edu](mailto:mzach(at)eps.berkeley.edu)

Pete Wuelfing (now at Merck): [peter_wuelfing\(at\)merck.com](mailto:peter_wuelfing(at)merck.com)

MORE JOBS

Hi Anna:

I am not sure whether you received an email from me recently about an open Postdoctoral position I have in my labs at CSU. I would appreciate if you can forward this announcement to the SEAC list and to any interested contact you may have. I greatly appreciate your help.

Mekki

A postdoctoral position is available beginning early June 2002 in our laboratory in the chemistry department at Cleveland State University (CSU).

Candidates should have a Ph.D. degree in Chemistry and previous experience in at least one of the following areas: Molecular electrochemistry and spectroelectrochemistry on metalloproteins and/or DNA, Biosensor Development and surface modification/characterization, fast scan electrochemistry techniques and electrochemistry in microenvironments. The position is for one year with the possibility of renewal. Please bring this announcement to the attention of potential candidates. To apply send ASAP Curriculum Vitae and arrange to have three letters of recommendation sent

to: Dr. Mekki Bayachou, Dept. of Chemistry, Cleveland State University, Cleveland OH 44115. All applications received will be considered until the position is filled.

Dear Colleagues:

Arizona State University is in the process of aggressively expanding its interdisciplinary programs aimed at interfacing bio/organic structures with traditional materials research. As part of this effort we are presently searching for three interdisciplinary faculty in this area. One of these searches is specifically in the area of interfacial chemistry. This is an *open rank search*, and we are looking for someone who has developed, or is interested in developing, a major research program interfacing molecular or biomolecular systems with bulk materials such as conductors, semiconductors and optically accessible surfaces, or in the area of electron-transfer chemistry as applied to molecular electronics. If you are aware of anyone who might be interested in such an opportunity, please bring this to their attention. The advertisement for the position is attached.

FACULTY POSITION *Arizona State University*

The Department of Chemistry and Biochemistry at Arizona State University invites applications for a tenure track faculty position, rank open. Required: A doctoral degree in chemistry, physics or a related physical science; distinguished record of research accomplishments appropriate to rank and teaching experience appropriate to rank. Research interest and expertise in the areas of interfacing molecular or biomolecular systems with bulk materials including conductors, semiconductors and optically accessible surfaces, and in electron-transfer mechanisms as applied to molecular electronics are of particular interest and desired.

Applicants must send a description of research plan, statement of teaching philosophy, list of publications, curriculum vitae and ensure that three letters of reference are sent to: Interfacial Chemistry Search Committee, c/o Professor Devens Gust, Department Chair, Department of Chemistry and Biochemistry, Arizona State University, PO Box 871604, Tempe, AZ 85287-1604. Application deadline is April 1, 2002 or every two weeks thereafter until the position is filled.

Arizona State University is an Affirmative Action, Equal Opportunity Employer and is committed to increasing faculty diversity.

Announcements and Jobs- Remember to post them and check:

SEAC announcements: <http://seac.tufts.edu/index.html>

for job announcements check the separate "Employment" page at:
<http://seac.tufts.edu/employment.html>

e-mail- you wrote:

Andrew Lyon <lyon@chemistry.gatech.edu>
Subject: Re: that's all, folks!

Debra:

A fine farewell issue. Thanks for the kudos on the BYI - even though we no longer do a whole lot of electrochemistry. It is nice to know that at least you remember my former life as a slave to the potentiostat. By the way, since you seem to be keeping track of honors, the newest news is that I was awarded a Sloan Fellowship a few weeks ago. Now, if I could just figure out what that third electrode is for...

-Andrew

Dear Anna,

Please update my "e-mail address" as given below.
Thank you in advance,
Sincerely

Mitsugi Senda, Professor
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And this from the **GRANDSON**:

Hi Anna,

I am not entirely sure what you are looking for, but if I ramble on too much, I am sure that I could be redirected to a more specific description of what I will be doing.

Also, Can I get on the SEAC mailing list? It seems I get some of the job postings, but not much of the "news" that I am contributing to. I am either working for the advancement of science or against it ... I think the jury is still out.

The Jill Banfield group just moved to Berkeley from University of Wisconsin -- Madison. The main focus of the group is looking at the interactions of microbes and minerals.

I am interested in the materials aspect of some of these processes. The structure of the nanoparticles formed in these cell mediated reactions look nearly identical to some of the particles that I was making in **Reg Penner's** group at University of California, Irvine. Because the results are often similar, but the methods are drastically different, I am interested in learning about what the important factors are to controlling the morphology at the nanometer scale. Can I draw from both toolboxes to create something that I could only dream of as an apprentice?

In my PhD research, I made a number of discoveries that were exciting due to their ability to make structures smaller than anything that can be made using

photolithography (<130nm). This is especially exciting because tools that I used for making nanoparticles and nanowires on graphite were inherently low energy (electrodeposition and room temperature CVD methods which use reaction vessels that were essentially a babyfood jars or a droplet of CVD precursor and a glorified tomato soup can (CVD chamber)).

The major drawback to the techniques that I worked on is lack of active patterning. It is hoped that the patterning found in natural biological systems might help me gain a finer control in the ultimate structure of inorganic materials.

Check back for updates.

Cheers,
Mike

**To some people it looks like I am not doing anything.
At the nanoscopic level, I am really quite busy.**

Mike Zach
Postdoc, Banfield Research Group
Department of Earth and Planetary Sciences
307 McCone Hall -- Mail, 453 McCone Hall -- Lab
University of California Berkeley
Berkeley CA 94720-4767

"name the seac website"

Our one and only **Sam Kounaves** and yours truly pondered the following for a while. **NOW we NEED YOU!!!**

Dear Sam- What are your thoughts about a streamlined www address for the Newsletter with a heading close to that of SEAC?

Anna- A simple one would be better, but we also need to make it long-term. I don't think it helps to change it very often. It only takes a few minutes to register a name and point it to the webserver, but it does cost about \$30 per year and usually there is a 2 year minimum.

Several people I've mentioned this to seem to prefer **the-seac.org**;
unfortunately **seac.org** has already been taken, how about these:

electroanalysis.org
????SEAC.org
SEAC?????.org
seac.?????.org
theSEAC.org

electro-chem-analysis.org
s-e-a-c.org
soc-electro-anal-chem.org
any other ideas ????

Sam- We could do
SEACforever!!!!
yourSEAC

Anna- OK... so pick one!: (we automatically also get the www. part)

the-SEAC.org (the-seac.org or the www.the-seac.org will also be available)
theSEAC.org (theseac.org or the www.theseac.org will also be available)
So let's be bold!
Oh no.....

I didn't check this one because I didn't think anyone would have it. Guess what???

<http://unixweb.choiceone.net/w/e/webcard/index.php?comingsoon=y&domain=www.the-seac.org> already has it...

So the closest that's available is:

www.the-SEAC.org

or how about:

www.theSEACweb.org

www.SocietyforElectroAnalyticalChemistry.org !!!!!!

www.SocElectroAnalyticalChem.org

www.ElectrochemAnalysis.org

www.EChemAnalysis.org

And then FINALLY:

Maybe we should ask for some input from others???????

By the way, you can go here to check a name to see if its available or valid: <http://www.enom.com>

We are looking for your input! The winner takes a prize of "a popular" book that will be donated!!!

Look for more in the future issues of the Newsletter. Thanks for ALL your contributions to this issue. Send comments and news to: [atoth\(at\)chem.ufl.edu](mailto:atoth(at)chem.ufl.edu)

To join SEAC go to:

<http://seac.tufts.edu/membership.html>