

SEAC

C O M M U N I C A T I O N S

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President's Message

We are witnesses to two on-going and spectacular **flarings** in science, high TC superconductivity and cold fusion (not to discount that heavenly apparition, supernova 1987a). It is difficult to escape the impression of **awesome** speed in the propagation of information about discovery and its absorption, transmutation into further experiment and speculation, and reemergence via FAX, electronic mail, mass media, etc. And even in the archival literature which can demonstrate remarkable agility as well.

For astronomical events we at least have the sense that we are just catching up with cataclysms that happened some time ago, even with speed of light transmission. For the more earthbound advances in observation, scientific motion becomes so real-time that the most undigested uncertainties get distributed, along with tidbits that may last. Major scientific conferences, depending on their coincidence with new developments, become referred to as Woodstocks of the Information Age and the appetite grows. The ACS has just formalized ex post facto its members' enterprising initiatives to inject fast-moving developments into meetings.

The consequences to society for electrochemically induced nuclear fusion are so attractive that decisions were asked for in companies, academic research groups, and at all levels of government as to allocation of resources to this vision, with a knowledge base built upon the scattered and conflicting initial inputs made possible by thin data and wide access. High temperature superconductivity now suffers from a surfeit of papers ($>10^4$ since 1987) and finding answers and new directions takes enormous information handling capacity and imagination. This outpouring is partly due to the ready reproducibility of the archetypical compounds, an open invitation to participate. The phenomenon is not in question whereas in cold fusion, there resulted an immediate conflict over what is **experimentally real**, with a rapid polarization of opinion over sparse description, limited data, and the newer element of sporadic events. Presumably the contradictions will be resolved in **due** course.

Also remaining are the lessons to be learned **from** our ability to disseminate information of all shades of **correctness**. Along with learning that calorimetric methodologies we accepted (ignored) as classic are hazards for the **unwary** and counting particles is tricky, we find that, as usual, the general issue of having good information is paramount.

A subject brought up at the last SEAC Board meeting Before Fusion was better and faster access to the body of information being generated by our colleagues. A limited exposure to meetings yields fairly random selection and networks take development. Suggestions would be most welcome.

Barry Miller

EDITORIAL

Where did the summer go? Is it just me or did this summer disappear faster than usual? It used to be that in the summertime, the livin' was easy. Not any more. Now the level of activity seems to be the same year 'round. Maybe it's different in academia, but I somehow doubt it. It wouldn't be so bad if the activity were confined to scientific and intellectual endeavors, but unfortunately it's just more of the same old paperwork! Well, enough of this griping; it doesn't do any good except maybe to burn off some frustration.

What's new in the world of electroanalytical chemistry? Not much on the cold fusion front apparently. The DOE Cold Fusion Panel, consisting of 22 distinguished scientists (including 4 SEAC members) is still investigating and analyzing the data. The Interim Report came out in August with rather inconclusive results but recommending no major expenditures until more can be resolved concerning this phenomenon. The final report to the Secretary of Energy is due out in November, but I haven't heard any good rumors yet on the conclusions. The popular press appears to have finally given up - thank goodness. Probably the next word out on this subject will come from The Electrochemical Society meeting in Florida in mid-October (probably before this issue hits the streets). Larry Faulkner has organized a two-day symposium on Cold Fusion in which, according to the abstracts, a number of researchers will describe some very interesting phenomena and anomalies. I wish I could be there. To any of you SEAC members who do attend, I would really like your com-

ments and opinions on the reported results.

As noted in the last issue, as part of the SEAC's desire to expand our international interactions, I invited three of our prominent members to serve on the SEAC Communications Board of Regional Editors. These individuals will contribute items of electroanalytical interest from around the world. To join Yoshio Umezawa (Hokkaido University), I am happy to announce the acceptances of Alan Bond (Deakin University, Australia), who will be responsible for the Southern Hemisphere, and Karl Cammann (Westfälische Wilhelms-Universität Münster, Federal Republic of Germany), who will cover the European beat. Of course, since it will be impossible for the four of us to effectively cover the whole world, I am still hoping that the rest of the SEAC members will continue to send in items of interest, e.g., meeting announcements and summaries, scientific commentaries, unexplained phenomena, book reviews, items about individuals, etc.

At last, the long-awaited "Memories from Murray" (Royce, that is) has been received and appears in this issue. For those of you who may have forgotten after all this time, Royce was the 1988 recipient of the Reilley Award and, as tradition dictates, is asked (or prodded, as he states) to prepare an article on his remembrances. Well, Royce, in his own folksy way, has outdone himself, and the memories were worth the wait. Next, I have to start pestering Ted Kuwana, the 1989 Reilley Award winner. Luckily, in contrast to Royce, he doesn't have a reputation for procrastination to protect.

Once again, congratulations are in order for Allen Bard. (Do I sound like a broken record?) As described elsewhere in the newsletter, Al was overwhelmingly elected Vice President (President Elect) of IUPAC at its General Assembly in Lund, Sweden. Besides Al, SEAC members now "control" a number of official positions within IUPAC: Joe Jordan is a member of the Analytical Division Committee, George Wilson is secretary of the Electrochemistry Commission, and in the Electroanalytical Chemistry Commission, Karl Kadish is secretary and I am chairman. In addition, several more SEACers are members of, or na-

tional representatives to, these commissions. In the next issue of the newsletter, some of the activities of these commissions will be described, and perhaps more of you can become involved. (By the way, if you see George Wilson, ask him about the fire escape route at his hotel in Lund.)

Dick Dorst

A Notice from the Secretary

The terms of office of the following SEAC directors will expire on June 30, 1990:

Henry N. Blount, III
Richard P. Buck
R. Mark Wightman

According to our Bylaws, these individuals are not eligible for re-election as directors. The nominating committee is currently preparing a slate of candidates to fill these vacancies on the Board. You are hereby invited to submit your suggestion(s) regarding these candidates to the committee.

The terms of office of the following SEAC officers will also expire on June 30, 1990:

New Members:

- Weslene Tanner**
University of Pittsburgh,
5/30.
- Adam Heller**
University of Texas, Austin,
6/1.
- Mark T. McDermott**
Ohio State University, 6/1.
- Isao Taniguchi**
Kumamoto University,
Japan, 6/12.
- Kristin Kneten**
Ohio State University, 6/12.
- Thomas N. Asquith**
Procter & Gamble, 6/14.
- Robert K. Jaworski**
Miami University, Ohio,
6/15.
- Samuel A. Lee**
Loyola University of
Chicago, 6/16.
- David W. Conrad**
University of Illinois, Ur-
bana, 6/20.
- Romer A. Romero**
University of Zulia,
Venezuela, 6/22.
- Alexander J. Moronta**
University of Zulia,
Venezuela, 6/22.
- Jorge E. Tahan**
University of Zulia,
Venezuela, 6/22.
- Brian A. Clamp**
Miami University, Ohio,
6/26.
- Deborah Charych**
University of California at
Berkeley, 7/7.
- Joseph N. Barisci**
Wollongong University,
Australia, 7/10.
- Li Qun Zhang**
Purdue University
Indianapolis, 7/10.
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LETTERS TO THE EDITOR

Dear Dick:

Perhaps the lack of letters to SEAC Communications about cold fusion is a result of the remarkable broad press coverage at all levels, to the point where we electrochemists are pressed for information by taxi drivers, local reporters, etc. So much has been said, often based on fragmentary information and rumor, that the SEAC readership may be reluctant to add still more. Nevertheless, I believe there is an obvious lesson to be learned from the sometimes frenzied and nonmethodical activity associated with cold fusion. Creative ideas and thorough scholarship are certainly important components of good science, but are themselves not sufficient for providing lasting new knowledge. The most important aspect of our efforts is the ability to prove our scientific conclusions and thereby validate our ideas. Stan Pons and Martin Fleischmann deserve credit for an impressively creative idea which contains elements of many areas of physical science, and has stimulated significant thought about unconventional approaches to fusion. The ultimate value of their efforts, however, will depend on the success of cold fusion proponents in proving the existence of new phenomena. As is obvious from the past few months, proving the validity of a good idea is usually much harder than conceiving it.

Sincerely,
Richard L. McCreery
Professor of Chemistry
The Ohio State University

Dear Dick:

I just received the latest copy of the SEAC newsletter. It looks fine--keep up the good work.

In the next issue I would like you to run my change of address. It is:

Professor R. Mark Wightman
Department of Chemistry
CB # 3290, Venable Hall
University of North Carolina
Chapel Hill, NC 27599-3290
TEL: 919-962-1472
FAX: 919-962-5604

Yours sincerely,
R. Mark Wightman
Kenan Professor of Chemistry

Dear Dick:

Once again I am writing to ask you to run a blurb in the SEAC Newsletter on the ACS Division of Analytical Chemistry summer intern program. This past summer, we placed fourteen students with twelve different organizations. However, we had 61 applicants, 47 of whom were considered qualified for the program. This suggests to me that good students are out there and willing to participate, but we need more jobs for them. How about it SEAC members? Hire a summer intern in 1990.

Sincerely,
David J. Curran
University of Massachusetts
at Amherst

ACS DIVISION OF ANALYTICAL CHEMISTRY SUMMER INTERN PROGRAM

The Division is again seeking applicants and employers for the 1990 summer intern program. The objective is to introduce talented students to modern analytical chemistry. Those chosen to participate will be employed by industrial, government or academic laboratories, where they will carry out various phases of fundamental or applied research.

Participating laboratories agree to hire one or more students during the summer. Applications are screened and evaluated by the Division's Professional Status Committee, which acts as a broker, soliciting applications from students and positions from laboratories. Applications and reference letters of qualified students are sent to several participating employers, who then select the individuals most suited to their needs. Salary and details of employment are then negotiated by the organization and the student.

Students must have completed a minimum of two years of college, preferably including an instrumental analysis course or its equivalent, and have an interest in analytical chemistry. Ideally, students should be attending a four-year institution and be between their junior and senior years at the start of the 1990 summer. Applications are also welcomed from current graduate students in analytical chemistry and from college seniors

graduating in 1990 who have applied to graduate school with the intention of majoring in analytical chemistry.

Interested students and employers should contact Professor David J. Curran, Chair, Professional Status Committee, c/o Department of Chemistry, University of Massachusetts, Amherst, MA 01003. The deadline for receipt of student applications is February 9, 1990.

Dear Dick:

I am moving to the Chicago area where I will work as a technical consultant. My new address is:

David Cunningham
435 Doe Lane
Lakemoor, IL 60050

I am also enclosing a copy of the international symbol for yes, which may be appropriate for inclusion in SEAC communications.

Sincerely,
David Cunningham
Universal Sensors, Inc.
Metairie, LA



INTERNATIONAL SYMBOL
FOR YES

NEW BOOKS

Electroanalytical Chemistry, Vol. 15: A Series of Advances, Allen J. Bard, ed., xii + 376 pp., Marcel Dekker, NY, 1989, \$110.

Chapters on "The Electrochemistry of Liquid-Liquid Interfaces"; "Ellipsometry: Principles and Recent Applications in Electrochemistry"; and "Voltammetry at Ultramicroelectrodes".

Reviewed by Alanah Fitch in Anal. Chem. 61(18), 1037A (1989)

Electroanalytical Techniques In Clinical Chemistry and Laboratory Medicine, Joseph Wang, x + 177 pp., VCH Publishers, NY, 1988, \$59.

Chapters on voltammetry; ion-selective electrodes; EC biosensors; EC detectors for HPLC and flowing systems; and in-vivo EC.

Reviewed by George Harrington, *ibid.*

Larry Becomes Dean Faulkner

Larry Fi. Faulkner, head of the department of chemistry at the University of Illinois, has been selected as dean of the College of Liberal Arts and Sciences and assumed his post October 21.

Faulkner, 44, will succeed William F. Prokasy, who left last year to become vice president for academic affairs at the University of Georgia.

Faulkner has been head of the chemistry department since 1964, and has been serving as acting dean of the college since this past summer.

He earned a bachelor's degree in 1966 from Southern Methodist University and a doctorate in 1969 from the University of Texas at Austin. He was on the faculty for three years at Harvard University before coming to the UI to teach from 1973 TO 1963. He was a professor of chemistry at Texas for a year before: (1) returning to the UI as department head and, (2) receiving public comment from Time Magazine before it was the fashion for electrochemists.

Faulkner is a member of the American Chemical Society and is vice president of the Electrochemical Society this year and will be its president in 1991-1992. He was U.S. regional editor of the Journal of Electroanalytical Chemistry from 1960 to 1965 and has been on the editorial board of the Journal of the Electrochemical Society. He has served on the founding Board of SEAC and was SEAC Treasurer for a number of years.

There are positive things ahead for the college and for SEAC, Faulkner said.

"The state's new commitment to higher education will make a big difference to the college not only this year, but in the years ahead," he said. "The college has especially gained reaffirmation of its mission in the adoption of the new general education curriculum. Our job now is to bring that plan to reality in a way that improves liberal education on this campus. Electrochemistry will be a new requirement for English majors and the football team."

(Continued on the next page)

Royce W. Murray: Memories

I have waited, after the Reilley Award was given me, about long enough to write this for the SEAC Newsletter, to protect whatever reputation for procrastination I have managed to develop over the years. Dick Durst has been kind enough to prod me ever so gently, so here goes...

My reminiscent ruminations invariably turn to thoughts of the wonderful people who have been important in my professional life and 'to how lucky I have been in that regard. These people were my father, my college teachers, Don **DeFord** and Dick Bowers, Charlie Reilley, and a cast of fantastic graduate student colleagues. At the risk of too much sentiment, I'm going to say something about each..

My father as a youngster went from Texas to California in a covered wagon, but the Texas Murrays decided that was a mistake and soon went home to **Eastland** County, Texas. He was a hunter-trapper as a teen and an oil field roustabout as a young man. Helping out on the rigs, he learned how to rewind burned-out electrical motors, and eventually wound up in Birmingham, Alabama, to work for the Alabama Power Company, and moved into a boarding house run by grandmother. He got around on a fast Harley, but after he broke both legs (for the second time) riding it fast, he gave it up in favor of marrying my Mom. So I began.

Dad had only a high school education, but developed his knowledge along with the electrical industry. He was a perpetual home shop tinkerer and I grew up looking at electrical meters, generators, and lathes, wiring diagrams, and insulating materials. He would rope me regularly into helping him out with this little chore or that in the shop. He knew a little practical chemistry and my first scientific experiment was how high a bit of home-made gunpowder would carry a can. Later on, I would go with him to a large scrapyards in Birmingham - where he did some consulting - and I remember crawling around in the hulks of old B-25's, scrapped after the War, collecting **50-cal** ammo lying around here and there, and that gunpowder would really make the can fly! I don't know if he realized it, but with that rearing I was fore-ordained to become an **electro-chemist**!

High school was sort of a period of growing up when I thought my high school chemistry teacher was dull dull dull but years later I realized that he did teach me quite a lot. Mr. Baranelli, I was an ungrateful oaf, for which I am sorry.

But my college teachers, Professors Smithy, Simmons, Wilcox and Gordon, at **Birmingham** Southern College were real fertilizer to this southern pumpkin. They were dedicated men, truly. Professor Smith changed me from a transient excursion into a pre-ministerial program (I did preach a bit from the pulpit then, and Fred **Anson** once told me after a lecture that I hadn't lost the knack) into a chemistry major. Professor Harold Wilcox was a special inspiration, and between him and Smith I decided to be a Professor without even realizing it. Professor Ken Gordon pointed me at Northwestern, and Dick Bowers and Don **DeFord**, two more great items of luck.

I have nothing but amazed and good memories of my times at Northwestern with super fellow graduate students and Bowers and **DeFord** as my co-mentors. I think I have never worked so hard and

(Continued)

thought it was just fun. Several of the first year class, including Jay Roberts (of Roberts and Sawyer) and George **Ward** (of Hercules Chemical) signed up with that duo and were exposed to some of the original op-amps in electrochemistry. We did a lot of tinkering with potential and current control experiments with that equipment, amusing ourselves with **chronoamperometry** and chronopotentiometry. I remember **DeFord** coming through the lab with some instrument **company** people (a well-known company) and hearing them tell Don that they didn't think this kind of electronics was going anywhere. I remember that we students just laughed rudely and with incredulity. One of my projects was to cover a Hg electrode with a membrane of partly hydrolyzed cellulose **triacetate** ion-exchanger and observe the voltammetry of metal ions diffusing through it. Bowers was watching when I did the first experiment with this electrode, and upon seeing enhanced currents, Bowers said, with a touch of pleased amazement, "It works!" I don't think I said 'anything, but I thought "Of course it works!" Later that day I realized that beforehand he wasn't sure the experiment would work, and that I the innocent (gullible) student had just learned something important about the uncertainty of research no matter how craftily planned. I periodically remember that insight when I discuss an ambitious experiment with my own students and as well as predicting a cool piece of science also warn (sometimes) of possible and impending failure.

My next piece of good fortune was to come to North Carolina where there were excellent faculty colleagues, even more excellent students, and Charlie Reilley. I will never forget the long long mid-night hours spent with Charlie talking about a myriad of chemistry subjects. No one who has known Charlie has escaped that quiet questioning of his designed to lead you to an answer that afterward, you swear he knew already. I truly miss those mind-teasing interrogations. We had a joint laboratory, named the "Wig-warn" (for the Chief's little Indians), until we moved out of the incredibly crowded Venable Hall premises and into separate labs in **Kenan** Laboratories which were more spacious. We still shared all our equipment though and although we didn't publish together very often we and our two groups of students were very close. Charlie left a tradition of attention to the fundamentals in analytical chemistry that I remain very conscious of nurturing.

Finally, the Carolina students. I'll be brief here, but this is the most important part. UNC is blessed with many good things but to me the best **are** the fine young men and women that come to us for undergraduate and graduate study. I have had the good fortune to have some of those choose to conduct research investigations with me. I could tell many stories about their progress and development as students and then as young scholars but I never liked my mom showing my baby pictures whenever the relatives gathered and I guess my students might feel likewise. So I'll just close by thanking them all for being such good colleagues and for continuing to make this Professing job so much fun I (most times) forget it's work.

Royce Murray

Faulkner...(continued)

Robert Berdahl, UI vice chancellor for academic affairs, said he's confident **Faulkner** will accomplish that goal.

"The search process for the College of Liberal Arts and Sciences demonstrated what we already knew - that we had a large number of extremely well-qualified faculty within the college from whom to choose a dean," Berdahl said.

"Larry is a long-term faculty member, an outstanding scientist, an extremely effective department head and one who has earned the admiration of his colleagues in the short time he has served as acting dean. I believe he will be a splendid dean.

"He is committed to carrying through the reform of general education in the university and to seizing the opportunity that presents to strengthen the college."



Dean Larry Faulkner
College of Arts and Sciences
University of Illinois

Hubbard Honored

Arthur T. Hubbard, Rieveschl Eminent Scholar in Surface Science, Department of Chemistry, University of Cincinnati, has been honored with UC's Rieveschl Award for Scientific Research. Hubbard is head of the university's Center for Surface Chemistry. His research is a unique blending of surface characterization by spectroscopic methods and analytical electrochemistry in studies of the surface chemistry and electrochemistry of metal surfaces and semiconductors in contact with solutions.

Society for Electrochemical Chemistry: Treasurer's Report
July 1, 1988 to June 30, 1989 - Fiscal Year 1989

INCOME STATEMENT

Income Account	Budgeted	Actual
Interest - Checking	\$ 550.00	\$609.92
Interest - CD	550.00	627.15
Endowment Contribution	550.00	459.50
Working Fund Contribution	3,500.00	4,000.00
88 Dues	0	94.00
89 Dues	5,050.00	4,437.50
90 Dues	0	120.00
91 Dues	0	30.00
Life Dues Payments	1,750.00	1,050.00
	<u>\$11,950.00</u>	<u>\$11,428.07</u>
Expenses		
Account	Budgeted	Actual
Symposium Expense	\$ 3,000.00	\$ 2,138.00
Reilley Award Expense	1,975.00	1,879.69
Membership Expense	600.00	1,461.30
Newsletter Expense	1,800.00	1,515.59
Miscellaneous Expense	60.00	10.00
	<u>\$ 7,435.00</u>	<u>\$ 7,004.58</u>
(NET)	\$ 4,515.00	\$4,423.49

BALANCE SHEET

Assets Account	Budgeted	Actual
Working Fund	\$ 3,062.00	\$ 3,248.27
Reilley Endowment - LNB	4,146.00	4,138.54
Reilley Endowment-Champion	8565.00	8,659.85
Life Member Endowment	5823.00	5,529.61
	<u>\$ 21,596.00</u>	<u>\$ 21,576.27</u>
Liabilities		
Account	Budgeted	Actual
Newsletter Payable	\$ 0	\$ 0
Member Expense Payable	0	0
	<u>0</u>	<u>0</u>
(NET)	\$ 21,596.00	\$ 21,576.27

ANALYSIS OF WORKING FUND BUDGET

Income	Budgeted	Actual
Working Fund Contributions		
Pittsburgh Conference allowance	\$ 3,000	3,000
BAS Commitment	1,000	1,000
Subtotal	<u>4,000</u>	<u>4,000</u>
Collected Dues		
Calender Year '91	0	30
Calender Year '90	0	120
Calender Year '89	5,050	4,438
Calender Year '88	0	94
Subtotal	<u>5,050</u>	<u>4,682</u>
Interest	1,100	1,237
TOTAL	\$10,150	\$ 9,919
Expenses		
Symposium Expense	\$ 3,000	\$ 2,138
Newsletter Expense	1,800	1,516
Membership Expense		
Dues collection/Membership activities	250	1,050
Elections	250	53
Miscellaneous	100	358
Subtotal	<u>600</u>	<u>1,461</u>
Reilley Award Expense		
Honorarium	1,000	1,000
Award Reception	750	880
Micellaneous	225	0
Subtotal	<u>1,975</u>	<u>1,880</u>
Allocation of Dues to Reilley Endowment		
Calender Year '91	0	10
Calender Year '90	0	40
Calender Year '89	1,685	1,480
Calender Year '88	0	31
Subtotal	<u>1,685</u>	<u>1,561</u>
Allocation of Interest to Endowments	<u>1,100</u>	<u>1,237</u>
Miscellaneous	60	10
TOTAL	\$10,220	\$9,803

Working Fund Balance: **Unobligated** Balance on 7/1/88 (Cash Balance - Liabilities) = \$3,132 on 6/30/89 (\$3,132 + 9,919 - 9,803 = \$3,248)

The Society's financial health is good. Its total net worth of \$21,576 represents an increase of \$4,424 over the past fiscal year. The majority of this growth occurred in the Reilley Endowment Fund into which one-third of the annual dues payments are now diverted. The total value of the Reilley endowment stands at approximately \$12,800 -- about \$8,700 of which is held in a Certificate of Deposit at Champion Federal Savings and the remainder of which is held in an interest-bearing checking account at Lafayette National Bank.

The Society operated within its proposed budget for the year. The Pittsburgh Conference increased its support of the Reilley Award Symposium to \$3,000. Additional funds were allocated to increase the size, frequency and quality of the SEAC Newsletter. The Newsletter operated within its new budget in meeting these objectives. Unanticipated expenditures were encountered in the category of Membership Expense in the form of additional mailings of dues notices and the purchase of computer software to facilitate the duties of the Treasurer

and the Secretary. Reevaluation of budget allocations or limitation of expenditures in this area may be advisable. The balanced budget was maintained by the fact one of the invited speakers at the Reilley Award Symposium received travel funds from another source.

Respectfully submitted,

Franklin A. Schultz
 SEAC Treasurer
 August 8, 1989

MEETINGS

May 14 - 26, 1990

ADVANCED STUDY INSTITUTE ON MICROELECTRODES: THEORY AND APPLICATIONS, sponsored by the NATO Scientific Affairs Division, is to be held at the Hotel d. Joao II in Alvor (Algarve) Portugal.

Microelectrodes are today accepted as fundamental tools in many areas of Science and are a rapidly developing subject.

The purpose of this Advanced Study Institute is to establish the properties, advantages and applications of microelectrodes, to identify areas of research needed and to stimulate research in the field.

The Institute will be a tutorial course dealing with the technological aspects involved in the construction, characterization and applications of microelectrodes.

Topics to be covered are:

- . theoretical aspects
- . construction of microelectrodes
- . experiments at molecular level
- . studies of reaction mechanisms
- . related electrochemical systems
- . analytical chemistry
- . unusual media
- . studies in electrochemical technology.

The deadline for registration is January 15, 1990. Attendance is limited.

Further information from:

Dr. Ml. Montenegro
Univ do Minho Largo do **Paco**
4719 **Braga** Codex, Portugal
TELEX: **32135 UMINHO P**
TEL:(53) 27007 / 8
FAX: (53) 77936

June 4 - 8, 1990

ELECTROSPAIN ANALYSIS '90 is being held in Asturias, Spain. The international conference devoted to applications of modern electrochemical **methods** of analysis will consist of invited plenary lectures, keynote lectures, submitted research papers and posters. The program will be divided into the following sessions:

1. Electrochemical Biosensors
2. Advanced Techniques

3. Environmental Applications
4. Pharmaceutical and Biomedical Applications
5. Industrial Applications

An exhibition of electroanalytical instruments will be held in conjunction with the conference.

Further information from:

Dr. Lucas Hernandez
Quimica Analytica
Facultad de Ciencias
Universidad Autonoma de Madrid
28049 Madrid, Spain

January 15 - 19, 1990

THE GORDON RESEARCH CONFERENCE IN ELECTROCHEMISTRY will be held at the Doubletree Hotel in Ventura, California.

Michael J. Weaver, Chairman
Bruce Parkinson, Vice-Chairman

Monday, January 15

Electrochemical Synthesis of Ultrathin Film Composite Membranes:

Charles R. Martin
Texas A&M University

Application of Modified Electrodes in Bioelectrochemistry:

Phil Bartlett
University of Warwick

Modeling the Electrochemical Double Layer in Ultrahigh Vacuum:

Fred T. Wagner
General Motors

Adsorption Equilibria and Dynamics by the Use of Radioactive Labeling and Surface NMR:

Andrzej Wieckowski
University of Illinois

Tuesday, January 16

Surface Reconstruction in Electrochemistry:

Dieter Kolb
Fritz-Haber Institut

Inner Layer Capacity-Charge Density Relations for Single-Crystal Surfaces:

Antoinette Hamelin
CNRS Meudon

Redox Chemistry of Organometallic Species Based on Osmiumammines:

Henry Taube
Stanford University

Mechanisms of Two-Electron Transfers:

Bill Geiger
University of Vermont

Wednesday, January 17

Molecular Electron Transfer and In-Situ STM at Electrodes:

Chris Chidsey
AT & T Bell Labs

In-Situ Mass Measurements with the Quartz Crystal Microbalance:

Michael Ward
Dupont Central Research

Electrochemistry and Photoelectrochemistry at Thin Molecular Films:

Neal Armstrong
University of Arizona

Electrochemistry and Photoelectrochemistry in Well-Ordered Surface Microstructures:

Tom Mallouk
University of Texas

Thursday, January 18

Atomic-Resolution STM Studies of Surface Structure and Electronic Properties of Low-Dimensional Materials:

Charles Lieber
Columbia University

Monomolecular Assemblies at Electrodes:

Marc Porter
Iowa State University

Second Harmonic Generation and **FTIR** Studies of Surface Molecular Orientation and Conformation:

Robert Corn
University of Wisconsin

Dynamic Structural Effects in Intramolecular Electron-Transfer Reactions:

Joseph Hupp
Northwestern University

Friday, January 19

Chemistry and Physics of the Semiconductor/Liquid Interface:

Nate Lewis
California Institute of Technology

Surface Chemistry and Scanning Tunneling Microscopy of Two-Dimensional Materials:

Bruce Parkinson
Dupont Central Research

Positions Available

Technical Support Chemist

BAS is seeking a customer technical support specialist to work with the Electrochemical Products Group. This position requires USA citizenship or a permanent residency visa with a BS or MS in chemistry or closely related field. Individuals with a midwestern background are encouraged to apply. Experience with basic electroanalytical techniques such as voltammetry is desirable. Sales experience is not necessary. Having a mechanical or electronic aptitude and keyboard literacy are also beneficial. The successful candidate must be energetic and a self starter, have excellent communication skills (written and oral), and have a pleasant and outgoing personality.

BAS Electrochemical Products are sold to industrial, academic and government laboratories worldwide. This flexible position will involve both direct customer interaction (correspondence, telemarketing, exhibitions, instrument demonstrations, etc.) and periodic laboratory work (evaluate customer samples, develop short application notes, test prototype equipment, etc.). Non-smokers preferred. Interested applicants should submit a detailed resume, no phone calls please, including references and salary requirements to:

Lina Reeves-Kerner
Human Resources Manager
Bioanalytical Systems, Inc.
2701 Kent Avenue
West Lafayette, IN 47906

BAS is an Equal Opportunity Employer.

Analytical Chemistry - State University of New York at Binghamton

The Department of Chemistry invites application for a tenure-track or tenured position in Analytical Chemistry at any level. At the Assistant Professor level, the appointee must demonstrate the ability to develop and conduct an innovative and vigorous research program. At either the Associate or Full Professor level, the appointee must have an established record of excellence in research. Area of research is open. Commitment to teach at both graduate and undergraduate levels is required for all candidates. Applications will be considered beginning October 16, 1969. The search will begin immediately and continue until the position is filled. Please send a complete resume, a succinct outline of research plans, and three letters of recommendation to:

Carmen W. Huie, Chair
Analytical Chem. Search Committee
Department of Chemistry
SUNY-Binghamton
Binghamton, NY 13901

SUNY is an equal opportunity and affirmative action employer.

Postdoctoral Research Opportunities - Solar Energy Research Institute

Fundamental research in conductive polymers, surface-modified semiconductor electrodes, electrocatalysis, polymer-based solid-state photonic/electronic devices beginning Fall 1999. Preference will be given to candidates with experience in electrochemistry, semiconductor physics, or polymer science. The appointment is for one year with the possibility of extension. The minimum starting salary will be \$24,500 plus fringe benefits. Additional opportunities are available under a National Research Council/SERI program (application dates: January 15, April 15, August 15).

SERI is the U.S. Department of Energy's lead laboratory for solar research and has complete laboratory facilities/state-of-the-art instrumentation for accomplishing the above work. Excellent interdisciplinary cooperative/collaborative possibilities exist. The Institute is located 12 miles west of Denver, Colorado, in the foothills of the Rocky Mountains.

Applicants should submit a curriculum vitae and should arrange to have three letters of recommendation sent to:

Dr. Arthur J. Frank
Solar Energy Research Institute
1617 Cole Boulevard
Golden, Colorado 80401

SERI is an equal opportunity employer.

Nominations Solicited

Nominations for the 1990 Reilley Award are hereby solicited. Such nominations should include the individual's curriculum vitae, a description of his or her significant contributions to electroanalytical chemistry, and at least two letters of support. All nomination materials will be retained by SEAC.

Once nominated, any individual will be considered for the Reilley Award for three years without being renominated. The submission of any supporting information or a renomination is welcome at any time, but the decision on the 1990 Award shall be based upon the material which is available to the Award Committee on

March 15, 1990. All nominations should be sent to:

Professor Fred M. Hawkrige
Department of Chemistry
Virginia Commonwealth University
Box 2006; 1001 West Main Street
Richmond, VA 23284-2006

American Chosen IUPAC president-elect

Allen J. Bard, chemistry professor at the University of Texas, Austin, and editor of the *Journal of the American Chemical Society*, has been elected vice president of the International Union of Pure & Applied Chemistry. He was picked for the post overwhelmingly by the IUPAC Council at the 35th IUPAC General Assembly in Lund, Sweden. As vice president, Bard is also president-elect and will succeed the new president, Yves P. Jeannin of the Université de Paris (Pierre et Marie Curie), at the close of the next IUPAC General Assembly in West Germany in 1991. (C&EN, August 21, 1989)



Definition: **"Expert."** A man outstanding in his field.

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