FREE RADIGALS

he Paris meeting is over, my credit card bills are all paid, and my souvenirs of France have either been put away or eaten. I was lucky enough to go to Paris, and I brought back some great memories. Before they fade, here are a few of them.

If You Hold It, They Will Come

The Paris meeting was a bold gamble. Would the American and Far Eastern attendees we might lose be compensated by others from Europe and elsewhere? Average attendance at ECS meetings over the last 5 years, excluding a Honolulu blockbuster, was about 1560. In Paris, there were over 2900 paid registrants and 2463 presentations. Next question.

The strong technical program and many new faces were blessings, but they also brought problems. Registration lines swelled. Meeting rooms were packed to capacity and beyond. It all worked out well in the end, and the meeting was a huge success by any standard. Paris was extremely important in the history of the Society. As we begin to think of ourselves as a truly international society, the Paris meeting and two highly successful Hawaii meetings before it make

it very clear that we're well on our way. Beating the System, Paris-Style

The Saturday before the meeting, we made the mandatory visit to the Eiffel Tower. Four lines of visitors inched toward the tower's four giant legs. Our line, much shorter than the others, attracted several people who thought they had beaten the system — until they realized at the ticket window that they were in the line for the stairs, not the el evators. If it seems too good to be true...

Above and Beyond the Call

The ECS Headquarters Office, the nerve center of our meeting, was deluged with visitors. As the telephone rang unceasingly and people streamed through the door, Elizabeth Brennfleck, their first point of contact, greeted everyone with a smile. I watched in admiration as Steve Priori assisted one attendee in fluent Italian just another of our staff's many talents. In the meeting registration area, Ellen Tiano and Carolyn Pylypiak were somehow ge tting everyone registered. Two hours past the registration closing time on Sunday night, they were still at it. Barbara Baggott, a familiar face at our meetings, debuted in her new role as support for the technical exhibits.

Brian Rounsavill, our meetings manager, seemed to be everywhere at once, making sure that every event came off as planned.



As luck would have it, late one night after putting in heroic hours, Brian returned to his room to find that the lock on his door had been recoded. See Webster's, under "irony."

Not all the staff were in Paris, of course. Back in Pennington, the rest of the staff were digging out from under dozens of boxes of meeting materials. Everyone helped to assure the success of the Paris meeting, not just at the meeting, but through hard work in Pennington for many months beforehand. Great staff are the cornerstone of a great Society. Thanks to you all.

An Unfortunate Moment in History

All eyes were on Paris — but not on us, of course. Our meeting coincided with the tragedy of Princess Diana's death. Many of us, preoccupied with the meeting, knew few of the details until we returned home. Despite huge press coverage back home that may have made it appear otherwise, Paris went on with its business during its unfortunate moment in the public eye. A city with such a long and pivotal history knows how to take such events in stride.

If they Gave Nobel Prizes for Talks...

Then Jean-Marie Lehn would get another one. After his lively and brilliant plenary lecture on molecular and supra-molecular electronic devices, the halls of the Palais des Congres were buzzing with rave reviews. The talk was fascinating technically and a rare opportunity to see how a Nobel laureate thinks.

Ahh! The Food!

That's how everyone reacts when you say

that you're going to France. Yes, we had some memorable food in Paris. On the other hand, they also have Mickey D's in Paris, and some of my friends ate there. (I'm not me ntioning any names, of course.) All French food isn't haute cuisine, and not all good food is found in France, to be sure, but people take their food — and

dining — seriously. You have to love a country where the survival of local bakers can become a national issue.

Perhaps most important, France is a country where people really know how to dine — how to celebrate food, wine, and conversation coming together as a gracious and pleasant experience. Dining and eating aren't the same thing, and the French understand the difference.

Handy Travelers' Tips, A Puzzling

Question, and a Stereotype Debunked In France, they don't call it the English Channel, folks. And French fries?

If they had actually taken down the Eiffel Tower after the 1889 Exposition, what would they put on all those tee shirts and shot glasses?

Cross out the parts in your guidebook where it says that the French are brusque and, in Paris, always dressed to the nines. Didn't see it, don't believe it. I've rarely encountered friendlier, more pleasant people.

A Final Thought

Before I left the meeting, the conventions manager of the Palais des Congres said to me, "I hope you will return for another meeting. We're an excellent venue." I have to agree.

Les Points Culminant de Paris The 1997 Joint International Meeting

he Joint International Meeting was a meeting of many premières: from the record meeting attendance (nearly 3,000), to the record number of papers scheduled (2,463 in 24 Symposia), to a first time in Europe (ah, Paris). It was also the first meeting collaboration between The Electochemical Society and the Intern ational Society of Electrochemistry (ISE). Though the highly-applauded technical sessions were the raison *d'être* for the meeting, the location, the food, and the sights provided the *joie de vivre* that also contributed to the meeting's success. (See Free Radicals on page 9 for a mémoire of the Meeting.) Abstract submissions using the Society's latest on-line tools was up to 40% (see related article on page 50). The poster sessions were the largest ever: 700 posters on Tuesday night, the necessity for an additional session on Thursday night (with 400 more posters), and over 65 student posters on Monday. Prese nters filled the hallways and the technical exhibit area with lively presentations and on-goin gdébats. The Technical Exhibition was one of the best ever, with over 35 exhibitors, and plenty of attendees. In fact, all of the special events (the luncheons, tours, etc.) were filled to capacity. The oft-commented-upon highlights (les points culminant) were: the excellence of the technical sessions, the wonderful food, the impressive gathering of so many scientists and engineers, the location, the food, the Plenary lecturers, and the food!

Plenary Lectures

The Plenary lecture podium was shared by Professors Laurence M. Peter, the ISE Pergamon Gold Medalist, and Jean-Marie Lehn, Nobel Medalist in Chemistry (in 1987). First, Professor Peter presented a tutorial lecture on photoelectrochemistry, which he dedicated to Professor Heinz Gerischer as the "father of semiconductor electrochemistry." After reviewing definitions and general applications of ph otoelectrochemistry, Professor Peter focussed upon the kinetics and mechanisms of reactions. His goal was understanding the fate of an electron and hole across an interface and during recombination and understanding the competition between these steps. The experimental spectroscopic techniques to study photoelectrochemical reactions were explained, partic ularly the newer method of light-modulated microwave reflectance (LMMR) spectroscopy. The results of several phot oelectrochemical reaction systems were discussed. Recent results of LMMR for electron transport in a dye-sensitized cell showed kinetics in the photosaturated region for the first time.

Professor Lehn presented an address on the building of mole cular and supramolecular devices through the chemistry of the interaction of individual molecules by their covalent bonding. Through self-assembly, structurally organized and functionally integrated devices may be possible which transfer electrons, ions, or photons. Examples of electronic devices given were a molecular wire and a photodiode. With the biological example of the tobacco virus that spontaneously organizes approximately 2,200 peptides into a cylindrical shape, the ability for inorganic supramoleculars to self-assemble was discussed. The organization of supramolecules



Bienvenue—from (I to r) Katsumi Niki, ISE President; Michel Froment, Paris Meeting Host Chairman; (Barry Miller), ECS President.



Les Conférenciers Plénières—(l to r) Katsumi Niki; Jean-Marie Lehn, guest Plenary Lecturer; Laurence M. Peter, ISE Pergamon Medal Lecturer; and Barry Miller.



La Grande Salle— An overview of the Plenary lectures in the Main Auditorium of the Palais des Congrès.



Les Confrères d'ECS—The 1997 Class of ECS Fellows (l to r): D. Noel Buckley, Michel J. Froment, Shyam P. Murarka, Koji Hashimoto, Chung-Chiun Liu, Ed McCafferty, J. Walter Schultze, Norman L. Weinberg, and James Sinclair. Not present were: James A. Amick, Theodore D. Moustakas, Stella W. Pang, and Lawrence Young.

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Les Gagnants Sont (The Winners Are)...Royce W. Murray (I), ECS Olin Palladium Award winner; (Barry Miller); and Michael J. Weaver (r), ECS Carl Wagner Award winner; and...

depends upon recognition, growth, and termination of the architectures. Supramolecular building blocks of racks, ladders and grids were described, which form spontaneously from mixtures of flat and pillar-shaped molecules. The role of electrochemistry is in the use of metallic ions as the "cementing" components in the supramolecular systems. Although a grid large enough to play "molecular chess" has not been achieved as yet, a 5 x 4 grid with twenty Ag⁺ ions was shown. These grids were also assembled into larger units by depositing them in a regular pattern onto a surface. In addition, by mixing double-helix and grid-organized molecules, a ring-shaped supramolecular structure was spontaneously (in 1-2 hours) formed. These supramolecular structures offer not only advantages of smaller scale for electronic devices possible by standard nanofabrication methods, but the ability for self-modification to repair defects.

Award Lectures

Professor Royce W. Murray, Winner of the ECS Olin Palladium Award, presented his award address "Solid-State Voltammetry" following the Awards and Recognition Session. After being introduced as someone whose experimental work "tests and challenges current theory," Professor Murray focussed mainly on his group's current research pertaining to the quantitative interpretation of voltammetry in solids and semi-solids. The goals of these studies are to understand electron transfer dynamics, mass transport dynamics (over 13 orders of magnitude), microstructural and molecular effects, and electroanalysis. The use of redox polyether hybrids solved inherent low solubility problems, which allowed measurement of physical properties, such as viscosity, diffusivity, and conductivity, over a wide range. Solvent dynamics relations for adiabatic electron transfer were established over a wide range of rate constants. Finally, an LED (light-emitting diode) structure was shown using a semi-solid molecular melt, which although had a low quantum efficiency of 0.2%, illustrated the ability to make a pn-junction by "freezing" of concentration gradients. This example and others showed the progress made by Professor Murray and his group in understanding the relationship between rate and structure from voltammetric experiments.

Professor Mordechay Schlesinger delivered his ECS Electrodeposition Research Award address to a Symposium audience. He presented his story of electroless deposition which began in the 1960s with a problem posed from industry. During the manufacturing of resistors, the electroless deposition process would stop for no apparent reason. This problem initiated a career in the study of the theory of electroless deposition, which has technological advantages such as selective deposition and deposition on complex shapes. In his study of Ni and nickel-phosphorus deposition, Professor Schlesinger's research showed, by both theory and experiment in 1967, that the critical nucleation center size was 10 angstroms, which has since been verified by others by more sophisticated experimental techniques. Resistivity is controlled by the degree of crystallinity, which ranges from perfect order to amorphous of NiP alloys. From theoretical considerations, the diffraction pattern (or crystallinity) using 300 atoms and also the density of states were calculated. Professor Schlesinger's research has given a greater fundamental physical understanding of the deposition of electroless materials, which he defined as solids that "if you kick with your toe, it hurts."

Contributions to **Meeting Highlights** were from Jan B. Talbot and Mary E. Yess, **Interface's** Editor and Managing Editor, respectively.



...Bruno Scrosati (1), ECS Battery Research Award Recipient (with Curtis F. Holmes, Chairman of the ECS Battery Division); and...



...Jean-Marie Tarascon (r), ECS Battery Technology Award recipient (with Curtis F. Holmes); and...



...Michael J. Graham (I), recipient of the ECS H. H. Uhlig Award (with Martin R. Kendig, Chairman of the ECS Corrosion Division); and



...Mordechay Schlesinger (l), recipient of the ECS Electrodeposition Research Award (with Dexter Snyder, Chairman, Electrodeposition Division).