



# ALI "QUOTES"

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JAN/FEB 2002

## Meeting Announcements

<http://www.princeton.edu/~pacs>

### January Monthly Meeting

**Speaker: Prof. Steve Forrest**  
Dept. of Electrical Engineering  
Princeton University

**Topic: Recent Advances and Improvements for Light Emitting Diodes (LED's).**

**Date: Tuesday, January 22, 2002**

**Lecture at 5:30 p.m.**  
Room 324, Frick Laboratory  
Princeton University

**Dinner at 6:45 p.m.**  
Prospect House  
Princeton University

Prof. Forrest's research group focuses on fundamental issues surrounding photonic materials, devices, and systems. Areas of emphasis can be divided into two general topics: group III-V semiconductor optoelectronic integrated devices, and organic thin film optical devices. In addition, there are projects that integrate the advantageous properties of both of these materials systems.

Stephen Forrest graduated from the University of California with a B.A. degree in physics in 1972 and from the University of Michigan with a MSc and PhD degree in physics in 1974 and 1979, respectively. From there, he went to Bell Laboratories (Murray Hill) where he did both fundamental and applied research and development of photodetectors for use in long wavelength optical communications systems. In 1985, Prof. Forrest joined the faculty of the Depts. of Electrical Engineering and Materials Science at the University of Southern California where he continued his research on optoelectronic integrated circuits, as well as on a new class of optoelectronic materials: crystalline organic semiconductors. From 1989 - 1992, Prof. Forrest served as the Director of the National Center for Integrated Photonic Technology: a consortium of five universities including USC, Columbia, Kent State University, MIT and UCLA. In 1992, Prof. Forrest joined Princeton University as the James S. McDonnell Distinguished University Professor of Electrical Engineering and the Princeton Materials Institute, and as Director of Princeton's Center for Photonics and Optoelectronic Materials. Since 1997, he has served as the Chair of the Department of Electrical Engineering at Princeton.

### February Monthly Meeting

**Speaker: Prof. Herschel Rabitz**  
Dept. of Chemistry  
Princeton University

**Topic: Controlling Molecular Dynamics:  
Let the Molecule do the Thinking**

**Date: Wednesday, February 20, 2002**

**Lecture at 5:30 p.m.**  
Room 324, Frick Laboratory  
Princeton University

**Dinner at 6:45 p.m.**  
Prospect House  
Princeton University

**Abstract:** A longstanding dream has been to use lasers to actively manipulate the outcome of molecular dynamics phenomena. The subject has a history of frustrating laboratory efforts, going back to the earliest days of laser development. The design of laser pulses for molecular control purposes can, in principle, be performed, but the complexities of molecular dynamics and interactions have hampered the design implementation process. In contrast, the direct application of learning control techniques in the laboratory is proving to be successful for the manipulation of molecular dynamics phenomena. The unique capabilities of molecules that make them amenable to learning control are (a) the ability to have very large numbers of identical systems for submission to control, (b) the high duty cycle of laboratory laser controls, and (c) the ability to observe the impact of trial controls at ultrafast time scales. Various learning algorithms have been proposed to guide this control process. This presentation will discuss these proposals and the current state of the laboratory demonstrations of the concept, as well as some new perspectives for the future of the field.

Herschel A. Rabitz graduated from Harvard University in 1970, with a Ph.D. degree in chemical physics. This was followed by post-doctoral work at the University of Wisconsin. In 1971, Professor Rabitz joined the faculty of the Department of Chemistry at Princeton University, and from July, 1993 to July, 1996 was Chairman of the Department.

*The lecture is free and open to the public. The cost for dinner is \$20.00 per person, including wine (students and retirees, \$10.00). Reservations are necessary to attend dinner, but not necessary for the lecture. For dinner reservations, please contact Denise D'Auria at (609) 258-5202, [denised@princeton.edu](mailto:denised@princeton.edu). Dinner reservations must be made by Tuesday, January 15 for the January meeting, and Wednesday, February 13 for the February meeting. Please call to cancel your reservations if you cannot attend. **No-shows will be billed for the cost of their dinner.***

Wednesday, December 12 we held our last meeting of the year 2001. Our chairman Bill Chiang gave us a lively overview of the Princeton ACS events of the past year. I was happy to see that we have such an animated local section including a strong core of loyal and vocal members. I would like to thank Bill Chiang and his secretary of state Longchun Cheng very much for leading the section in the past year, and keeping us in good health. Bill's last act as a chairman was to warmly thank Lynne Greenblatt, who has been the editor for this newsletter for 10 years, and throw a dinner party in her honor at Prospect House. It was my pleasure to contribute to Lynne's memories of her services to the ACS newsletter by being late with my Chairman's Corner one last time! Lynne is one of the motors behind our ACS section and we are fortunate that she will continue to be so. Danielle Crammer is Lynne's successor as editor for the newsletter. I wish her the best of luck (and persistence). Our secretary this year is Istvan Pelczer who is in charge of the NMR facility at our Chemistry Department.

In the new year we will continue according to proven recipes. Our monthly meetings will typically be held on Tuesdays or Wednesdays later in the month, at 5.30 p.m. at Frick Lab, the Princeton Chemistry Department. The seminar is followed by a dinner with the speaker and members of the section at Prospect house. The food is excellent, the conversation animated and all are welcome. I have invited a number of speakers already for the coming year but I certainly welcome suggestions. If you know of interesting and entertaining speakers please let me know (Nooijen@princeton.edu).

Our first meeting in the new year is on January 22 and the speaker will be Prof. Steve Forrest from the Electrical Engineering Department of Princeton University. Prof. Forrest will speak on recent advances and improvements for light emitting diodes (LED's). I have not yet received a title and abstract, but we do have one guarantee: the speaker will be there.

The February meeting will be held on the 20<sup>th</sup> and Prof. Herschel Rabitz from the chemistry department at Princeton University will speak on laser controlled reactions. The idea to use lasers to trigger specific chemical reactions has been pursued for over two decades now. Prof. Rabitz developed the idea to use repeated experiments with carefully tailored laser pulses to learn how to best tickle the molecule. Very recently, amazing reactions have been carried out following this learning strategy. The title of his talk is *"Controlling Molecular Dynamics: Let the Molecule Do the Thinking"*.

***Finally, let me express my best wishes to you all:  
Happy New Year!***

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## National Chemistry Week Open House

Kathryn Wagner, Event Coordinator

Many thanks to the volunteers who worked to make the National Chemistry Week Open House a success. 119 enthusiastic guests, most of whom were between the ages of 6 and 13, created art that demonstrated chemical principles and performed chemical experiments related to art. Most tried each of the fourteen activities at least once, and many repeated their favorites several times. (The event was scheduled from 7:00 to 8:30, but visitors--and volunteers--lingered until 9:45!)

The volunteers who patiently and ably supervised the art and explained the chemistry were Lynne Greenblatt, Thomas Caggiano, Schuyler Antane, Molly Hoke, Stacey Gove, Amy Lee, and Soo Yi (Wyeth-Ayerst); Carol Lee (Princeton High School); D.K. Weerasinghe (Firmenich); Fiona Case (Colgate-Palmolive); Bill Barnard, Frank Long, and Klaus Wagner (retired); Sharon Sibilia; Joel Studebaker; Janet and Jon White; and Martin Case, Anirban Hazra, Natalia Lisitza, Tresha Edwards, Debbie Lee, Brian Rissmiller, Mike Bennett, Hannah Chang, Elena Hung, Alexei Polishchuk, and Carol Rosenfeld (Princeton University). Other volunteers were Matt Littleton and Alice Ann Fankhauser (Princeton), who helped with preparations, and Dan Nordlund (Princeton). Special thanks to Ginny Eulo (Princeton), who let us use her space and who helped with set-up and clean-up.

### 2003 ACS Regional Awards in High School Chemistry Teaching

The Office of the Awards Program is soliciting nominations for the nine Regional Awards in High School Chemistry Teaching that will be presented in 2003. If there is an outstanding and dedicated high school chemistry teacher in your region, nominate them for one of these awards. Each award consists of a \$1,000 cash prize, two certificates (for the recipient and the recipient's institution), and reimbursement of reasonable travel expenses to and from the regional meeting where the award will be presented. Former recipients and retired teachers are ineligible for nomination. Recipients of the Regional Award in High School Chemistry Teaching will automatically become candidates for the James Bryant Conant Award in High School Chemistry Teaching (<http://chemistry.org/awards/conant.html>) in 2004. The deadline date for all nominating material for the 2003 Regional Awards in High School Chemistry Teaching is February 1, 2002. Earlier transmittal is encouraged. Contact Marvin Jones at [m\\_jones@acs.org](mailto:m_jones@acs.org) or 800.227.5558, x4408 for more details.

### Editor's Note

Lynne Greenblatt

As you may have read elsewhere in this newsletter, I am "retiring" from my position as editor. Danielle Crammer has graciously accepted the post, and I will be working with her over the next few issues to ensure a smooth transition. It has been my pleasure to serve the section in this capacity for the past 10 years. I have met many wonderful, dedicated people, and have forged many friendships. I've hounded and harassed many a Chair for their columns and speaker agendas. I'd like to thank the following Chair / Secretary-Treasurer teams with whom I've had the privilege to work during my tenure:

1991 – Annmarie Sabb & Tim Ocain (Ali"Quotes" was started in 1991, with Mary Talmadge as the Editor. I transitioned into the post at the end of 1991.)  
1992 – Steve Bernasek & Andy Bocarsly (although Steve cleverly took a sabbatical that year, and left Andy to hold down the fort.)  
1993 – Barbara Lences & Katerina Leftheris  
1994 – Andy Bocarsly & Steve Bernasek  
1995 – Phil Harrington & Annmarie Sabb  
1996 – Kevin Lehmann & Kevan Shokat  
1997 – Jonathan Chun & Longchun Cheng  
1998 – Bill Brill & Sonny Lee  
1999 – Mark Nicholas & Wei Ou (Mark left the Section in the spring, and Warren Warren, Chair-Elect, graciously agreed to fill in the void for the remainder of the year)  
2000 – Warren Warren & Marcel Nooijen  
2001 – Bill Chiang & Longchun Cheng

My job was made much easier by the efforts of three special individuals: Alice Ann Fankhauser, Ilse DiMeglio and Denise D'Auria. They were, and are, responsible for scheduling the meeting rooms, dinners, chasing after their bosses to meet deadlines, and a host of other duties which keep the Section running smoothly. Thank you!!!

I'd also like to thank Wyeth-Ayerst Research for generously supporting the Princeton Section and our activities.

Finally, thanks to Bill Chiang, Andy Bocarsly and the rest of the board for the "retirement party." It was a pleasant surprise!

I look forward to working with Marcel and Istvan this coming year, in a different capacity.

Happy New Year to all!

#### 2002 OFFICERS / COMMITTEE CHAIRS

<b>Chair:</b> Marcel Nooijen Princeton University (609) 258-3168 <a href="mailto:nooijen@princeton.edu">nooijen@princeton.edu</a>	<b>Secretary / Treasurer:</b> Istvan Pelczer Princeton University (609) 258-2342 <a href="mailto:ipelczer@princeton.edu">ipelczer@princeton.edu</a>
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CALENDAR OF EVENTS		
Jan 8	Trenton Section ACS Dinner Topic: New Tax Laws Jerry Goodkin, (609) 882-4763 or goodkin@erols.net	Rider University Lawrenceville, NJ
Jan 9	Chemical Consultants Network Speaker: Charles A. Garber, Ph.D. CCNReservations@aol.com_or (215) 382-1589	The Cynwyd Club Bala Cynwyd, PA
Jan 12 – 13	Super Science Weekend Alex Grushow, (609) 896-5095 or grushow@rider.edu	NJ State Museum Trenton, NJ
<b>Jan 22</b>	<b>Princeton ACS Monthly Meeting</b>	<b>Princeton University</b>
Jan 24	Philadelphia Section ACS Graduate Student Poster Session PhilaACS@aol.com or (215) 382-1589	Drexel University Philadelphia, PA
Feb 12	Trenton Section ACS Dinner Teacher/Student Night Jerry Goodkin, (609) 882-4763 or goodkin@erols.net	Rider University Lawrenceville, NJ
Feb 13	Chemical Consultants Network Speaker: Hank Whalen, ACS CCNReservations@aol.com or (215) 328-1589	The Cynwyd Club Bala Cynwyd, PA
<b>Feb 20</b>	<b>Princeton ACS Monthly Meeting</b>	<b>Princeton University</b>
Feb 21	Philadelphia Section ACS Concurrent Groups PhilaACS@aol.com or (215) 382-1589	University of the Sciences in Philadelphia
March 13	Chemical Consultants Network Speaker: David Jay Schorr, P.E. CCNReservations@aol.com or (215) 328-1589	The Cynwyd Club Bala Cynwyd, PA



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