

Leadership & Education in Electrochemical Engineering

by John W. Weidner

Much like the Physical and Analytical Electrochemistry Division (PAED), the Industrial Electrochemistry and Electrochemical Engineering (IE&EE) Division of ECS is not focused on a single electrochemical or solid state technology. However, where PAED focuses on the fundamentals of electrochemistry and analytical methods, IE&EE focuses on the engineering aspects of electrochemical systems. Therefore, we find our members also affiliated with technology-specific divisions, such as Battery, Energy Technology, Electrodeposition, and High Temperature Materials, just to name a few. Similarly, engineering and education is not a domain specific to the IE&EE Division. Engineering issues are addressed in all ECS Divisions. However, IE&EE is uniquely positioned to promote the engineering aspects of all electrochemical and solid state science, regardless of technology. A prime example of our engineering focus is the IE&EE Division's NET (New Electrochemical Technology) Award. Denny Mah provides details of this award, which recognizes the commercialization of new electrochemical technology. The Division has also sponsored a series of symposia entitled "Leadership and Entrepreneurship in Electrochemical Engineering."

Education too cuts across the entire Society. The fall 2006 issue of *Interface* highlighted the wide range of educational activities of interest to

all Divisions. Nevertheless, the IE&EE Division has taken the lead on many education initiatives. For example, the members of our Division have always been very active in organizing and judging the student poster session. We also continue to sponsor a series of symposia entitled "Tutorials in Electrochemical Engineering" on a variety of electrochemical topics. Venkat Subramanian and Richard Braatz provide their perspectives on the current needs in electrochemical engineering education.

One of our more high-profile activities is the Fuel Cell Outreach Program sponsored by the Division at each of the ECS meetings since the fall 2006 meeting in Cancun, Mexico. An article detailing the educational materials that are covered in this Outreach Program is given by Gerri Botte. In Cancun, we presented fuel-cell technology to 65 high school students and 100 college freshmen. Furthermore, Dr. Botte was able to present this program in Spanish. In 2007 the program was presented to approximately 70 high-school students in Chicago (spring) and Washington, DC (fall). In 2008, the program was presented to 150 students in Phoenix (spring) and Honolulu (fall). Another 40 students went through the program in San Francisco at the spring 2009 meeting. Not even travel to another continent prevented our outreach efforts in Vienna (fall 2009). A large contingent of volunteers, including dedicated graduate students, visited

the Gymnasium und Realgymnasium des Instituts Neulandschule, a local Vienna private K-12 school, and opened up the excitement of fuel cells and electrochemistry to another 40 students (see the winter 2009 issue of *Interface* for more information on this visit).

I hope you enjoy the articles we have provided in this issue of *Interface*. If you would like to help us with our Division's activities, let us know. We would love to get you involved.

The 2008-2010 Division Officers

John W. Weidner, *Chair*

Vijay Ramani, *Vice-Chair*

Gerri Botte, *Secretary/Treasurer*

Denny Mah, *Past Chair*

About the Guest Editor

JOHN W. WEIDNER is the Campaign for Excellence Professor of Chemical Engineering at the University of South Carolina. He has published 73 refereed papers with over 1,300 citations on the synthesis and characterization of electrochemically active materials, and the design and optimization of electrochemical systems (*e.g.*, batteries, fuel cells, electrolyzers). Professor Weidner has been active in the Society for over 20 years. He is currently Editor for *ECS Transactions* and he just concluded his term as Chair of the IE&EE Division of ECS. He may be reached at weidner@enr.sc.edu.