The Synergy Between the Research Board & The Emerging Technologies Committee

Phillip Miller & Dr. E. Jennings Taylor

The following article concludes a series of reports by the AESF Emerging Technologies (ET) Committee. To date, the column reviewed the impetus for this Committee and its operations, as well as current technologies that look extremely promising for the future of the plating and surface finishing industry. It is also important to report how the Emerging Technologies Committee will work directly with the AESF Research Board. Without creating synergy between these two entities, it would be impossible to have any significant impact. To describe this synergy, AESF talked to Dr. E.J. Taylor, founder of Faraday Technology, Inc., and chairman of the AESF Research Board.

This month's article focuses exclusively on the ET Committee's relationship with the AESF Research Board. We especially thank Dr. E.J. Taylor for his help and expertise on this subject.

***AESF**: What is the history of the AESF Research Board?*

EJT: It goes back as far as 1919 when Dr. William Blum asked the AESF to help fund research efforts of the National Bureau of Standards, now known as the National Institute of Standards and Technology (NIST). Initially, funded projects helped support standards-related research. The ultimate goal was to educate members and provide standards they could rely on in their own business development. In 1944, the AESF Research Board expanded its focus to include universities, colleges, industrial firms and independent research centers and labs.

Obviously, research in the plating field is too costly for any one entity to handle on its own. That's why the Research Board has played—and will continue to play—a key role in the advancement of plating and surface finishing technology. AESF-sponsored research is sustained by contributions from individual members, donations from Research Patrons, Associates and Sponsors, a portion of AESF member dues, and by co-funding and grants from companies, government organizations and universities. The result is that everyone gets to benefit from what is discovered through Research Board initiatives.

***AESF**: How has the mission of the Research Board changed over the years?*

EJT: Throughout the history of the Board, most research money went to universities. Also, a significant development has happened since the beginning of this century: In the late 1990's and early 2000, a hiatus occurred whereby virtually no projects were being funded.

This happened because contracts contained clauses regarding patent and publication rights that discouraged participation by universities. For example, university charters simply did not allow for AESF to limit publication rights. Effectively, such a directive was contrary to the concept of academic freedom. This roadblock led to a re-evaluation of our mission.

We realigned our cause, leaving behind the idea of cumbersome contracts and replaced them with grants instead. We are now more of a project procurement vehicle and our main concern is funding research that will advance emerging technologies and introduce our membership to them; and, to provide training and experience for graduate level students who may become our members' employees when they leave school. There is simply no reason to hold up valuable research over the issue of patent and publication rights, and this re-assessment will have a dramatic impact on the plating industry.

***AESF**: We've discussed in these articles how the Emerging Technologies Committee will work and the goals it has. Why do you think this Committee is critical at this point in the history of AESF?*

EJT: In recent years, I've been troubled by the fact that there seems to be no home for certain advanced technologies emerging in the industry. The news is filled with examples of jobs being lost overseas, and this certainly presents a difficult time in the history of our economy. But another fact is also clear to me: we cannot spend precious time fighting trends. The future of our economy is in high-tech jobs and new technologies, and the skills and know-how to transition to these futuristic opportunities are already present in our industry.

In the plating and surface-finishing field, we have an exciting chance to re-invent ourselves. The progress being made in fields like nanotechnology and MEMS is astounding. I'm challenging the industry to step up and help further these emerging ideas. I also believe that any company unwilling to re-align itself will face a dismal future.

***AESF**: What kind of impact are we seeing to date from the Emerging Technologies Committee?*

EJT: It's been quite amazing. We are already a worldwide organization and don't fully realize it yet. At the last SUR/FIN® meeting, 46 percent of papers were from international companies or concerns. And, 19 percent of the papers had to do with emerging technologies. That's an enormous impact for a relatively young committee. I can't wait to see what the next few years will bring. I'm sure we will continue to be amazed at what develops. I am convinced there is a home for every new technology on the horizon, if AESF members are willing to make some changes in the way they do business.

***AESF**: How will the Research Board work hand in hand with the Emerging Technologies Committee?*

EJT: The relationship between the two will be very critical, especially in the next couple of years. If the AESF Research Board and the Emerging Technologies Committee are not in sync with each other, I believe the impact of both will be greatly lessened. Luckily, since the AESF Research Board has been re-inventing its mission, there is now a natural alignment between the board and the committee.

The two will continue to work together—albeit informally—to identify and fund emerging technologies. The

Board will, therefore, give preference to grants that support technologies that have been identified as key to the future development of the plating and surface finishing industry.

However, the Emerging Technologies Committee does not report directly to the Research Board. They report to the Technical Activities Board. As everyone is aware, people from various AESF committees often attend each other's meetings, so regular contact will always be made between the Board and this relatively new Committee.

***AESF**: Do you have anything else you want to communicate to the AESF membership?*

EJT: I want to encourage members to continue taking risks to discover new technologies. The ultimate impact of a particular initiative or research project may be different than originally expected but, through the Emerging Technologies Committee, a direction or home can always be found for a new idea or disruptive innovation. If you don't take advantage of current technology trends, you will be left behind.

I would also encourage members who are unsure about how to proceed to just make contact with AESF. Check out our website, call someone or attend a meeting. It's this kind of outreach that often leads to significant progress. ***P&SF***

About Phillip Miller

Phillip Miller is the marketing director at Faraday Technology, Inc., 315 Huls Drive, Clayton, OH 45315. He coordinates the technical marketing and business development activities in support of Faraday's technology platform. Prior to joining the company, he worked as an independent business consultant and a senior business analyst for a Manufacturing Small Business Development Center sponsored by the U.S. Small Business Administration.

Miller has received honors as a Business Counselor of the Year by the Dayton Area Chamber of Commerce and the Ohio Department of Development. He currently teaches college-level small business management and planning classes. At Faraday, Miller is responsible for new business development, technical marketing, and program management.

About Dr. E. Jennings Taylor

Dr. E. Jennings Taylor is the chief technical officer at Faraday Technology, Inc. He founded the company to develop and commercialize innovative electrochemical technology using sophisticated charge-modulated electric fields. The company's intellectual property has been successfully transferred both to government agencies and large manufacturers in the form of process engineering technology and products. He holds a BA in chemistry from Wittenberg University, an MA in technology strategy and policy from Boston University, and MS and PhD degrees in materials science from the University of Virginia. He has published more than 70 technical papers and articles and holds more than a dozen patents. He currently serves as chairman of the AESF Research Board