IEST and UGIM Working Together

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Welcome to this special edition of the *Journal of the IEST*, featuring articles based on a few of the presentations given at the 19th biennial University/Government/Industry Micro-Nano (UGIM) Symposium, held July 9-10, 2012, in Berkeley, California. These articles offer a taste of the significant potential synergies between the Institute of Environmental Sciences and Technology (IEST) and UGIM that can be exploited if these two similar-but-different organizations can work together cooperatively, hold joint meetings biennially, and share resources.

IEST is an international, not-for-profit professional membership organization celebrating a 60-year history in the environmental sciences (see the 60th Anniversary Retrospective in this issue), with members in the fields of Contamination Control; Design, Test, and Evaluation; and Product Reliability. A strong professional society with approximately 800 members, IEST develops Recommended Practices (RPs) that are widely utilized, and also provides a highly effective education program for entry-level through advanced contamination-control professionals. IEST holds two large meetings per year. The Annual Technical Meeting, known as ESTECH, is held each May and features a continuing education program, technical sessions, working group meetings, leadership meetings, and a vendor exposition. A digital proceedings of the meeting is published each year. The Fall Conference, generally held in November, is primarily oriented toward working group meetings and has a smaller educational program and no technical sessions.

Over the past few years, IEST has increased its focus on nanotechnology facilities. Two working groups were initially formed: one to provide an overview of nanotechnology facility design and construction, while the other would focus on nanotechnology facility safety. The former will soon be publishing an RP, and the latter is developing an RP that is approximately 1½ years from publication. Technical programs at the past three ESTECH meetings have explored various topics in nanotechnology facilities. Subsequently, two additional working groups have been formed: one related to vibration issues in nanotechnology facilities, and one related to acoustic issues in nanotechnology facilities. While these previous efforts have dealt primarily with facility design, construction, and safety, there is an interest within IEST to expand into the area of nano facility operations as a natural extension of the current work.

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The UGIM symposia comprise a biennial conference administered by a lightly bound group of technical professionals involved in micro- and nano-level fabrication and fabrication-facility management. Led by a volunteer steering committee, the principle activity of the group is the biennial UGIM Symposium. This conference concentrates on facility operational issues and is sponsored by the IEEE Electron Devices Society. A proceedings is published at each biennial conference.

Historically, the mix of presentations at UGIM was weighted toward technical presentations on fabrication and devices. Because of the large number of conferences covering these topics, the focus of UGIM has gradually shifted toward the facility operations realm. The 2012 Symposium was the first to focus exclusively on facility operations and processing.

The key point of intersection is obvious: UGIM has migrated from a technical fabrication and devices focus to a micro-nano facility-operations focus, while IEST is moving from a focus on micro-scale facilities design and operation to a focus that incorporates nano-scale facilities as well. This convergence of direction provides an opportunity for the organizations to share resources and to build on each other's strengths.

Another area of synergism lies in cross-participation. While UGIM includes attendees from industry and national laboratories, it is heavily academic and weaker in industrial participation. The most active participants are engineers, managers, and faculty at university micro-nano fabrication facilities. IEST is strong in industrial facilities with less representation from academia. These differences provide an opportunity to work together to increase participation by all sectors.

The conferences can derive the most benefits from joint efforts. ESTECH is an annual conference. The UGIM has historically met biennially during even-numbered years. Recently, there has been a push within the steering committee and the general membership to make the symposium an annual event.

In response to this desire, a UGIM track at odd-year ESTECH conferences has been created, starting with ESTECH 2013, April 29 – May 2 in San Diego, California, where technical sessions on fabrication-facility operations and technology will be introduced (see sidebar). In the future, roundtable discussions and other programming of interest could also be added as part of this track.

This approach has several advantages. First, it addresses the desire of UGIM participants who would like to meet annually. Second, it opens up the ESTECH events to UGIM members and provides an expanded program for IEST members. Third, it encourages UGIM members to participate in the RP working groups, enhancing the RPs with UGIM members' expertise. In turn, IEST has expressed a desire to hold operations working group meetings at UGIM in even years, thus maintaining the continuity of that working group.

There are certainly many details to work out in the relationship between UGIM and IEST, but beginning that relationship with an expanded program at ESTECH 2013 will be beneficial to both organizations.

Fabrication Facility Operations Conference Session
Tuesday, April 30, at ESTECH 2013

Chair: Dennis Grimard, University of Michigan, Lurie Nanofabrication Facility
Co-chair: Pilar Herrera-Fierro, University of Michigan, Lurie Nanofabrication Facility

This session will cover topics relating to planning, building, and operating a modern micro/nanofabrication facility efficiently, effectively, and safely. Presentations on laboratory information management systems (LIMS), resource allocation systems, financial considerations, and the practicality of "mega-labs" with thousands of users will be featured.

- **Sabanci University Nanotechnology Research and Application Center Implementing Multidisciplinary Research Center Infrastructure.** Burak Birkan and Bulent Koroglu, Sabanci University Nanotechnology Research and Application Center
- **Building the Perfect Beast: Equipment Selection, Structuring, and Organization for a University Cleanroom.** Thomas S. Ferraguto, ETIC Micro/Nano Laboratory
- **Software Solutions for Fabrication Facilities.** Michael Bell, Badger Lab Management Systems
- **Development of a Formal Emergency Response Team for a Populous University Cleanroom in a Dense Urban Setting.** John Sweeney, Center for Nanoscale Systems, Harvard
- **CLEAN: A Holistic Approach to LIMS.** Vincenzo Di Bernardo, Center for Nanoscale Systems, Harvard
- **Improved Safety, Productivity, and Quality in Semiconductor Manufacture with Onsite Hydrogen Production.** David Wolff, Proton OnSite
- **Laboratory Staff Evaluation Process.** John Weaver, Purdue University, Birck Nanotechnology Center
- **Scaling Rules for Cleanroom Facilities.** Eric Martin, Harvard Center for Nanoscale Systems

Visit www.iest.org for details about conference sessions, continuing education courses, working group meetings, exposition, and networking opportunities at ESTECH 2013.