

Tribology Division

Mihai Arghir, Editor



Chair's Message – Itzhak Green

I have had the honor to serve on the Executive Committee (EC) of the Tribology Division (TD) for the past five years, and have had the privilege to chair this committee for the second term. It is a most rewarding experience to work with Mike Kotzalas (Secretary/Treasurer), Michel Fillon (RCT), Ali Erdemir (Expositions), Mihai Arghir (Publications), Daniel Nelias (Education), and Joe Levert (Member at Large). I wish to thank departing members of the EC, Mike Hoepflich, Les Miller, and Oludele Popoola for their dedicated service.

I am glad to report that the TD is financially very sound. Not only that we have recovered from some dips in our operating budget, we are expected to have a record surplus after IJTC 2007. This is due to important and new measures that the EC has undertaken over the past 3-4 years. The most significant of which is the formation of the IJTC Executive Committee in which two officers are appointed from the TD (Mike Kotzalas and Ali Erdemir) and two officers from our sister society, STLE (Bob Baker and Bob Bruce). The Chair of the TD and President of STLE are Ex Officios. The formation of this IJTC/EC has provided financial, administrative, and organizational leadership for the IJTC while allowing the Conference Planning Committee (CPC) to concentrate of what it does best, the technical content. Of course, the IJTC/EC is working in concert with the CPC and its officers. We have changed the format of paper submission requiring now only 2-3 pages of extended abstract (still undergoing the same rigorous review process). This allows the conference to be more responsive to the most recent and relevant research. Here are some preliminary statistics on the recent IJTC 2007:

- The conference had pre-registration of 335 (vs. budget of 305). There were approximately 50 onsite registrants for a final total of about 385 participants (including 80 students). About a 50-50 split between US and International participation. There were nearly 300 technical presentations, and 9 exhibitors.
- This was the largest IJTC since 1996 in San Francisco, which had 409 people. Also interesting to note: examining the past 21 years of meetings, excluding that 1996 meeting, this was by far the largest meeting in those two decades.

We celebrated Prof. Ward O. Winer's retirement by holding a two-day symposium in his honor where as the Keynote Speaker at the Luncheon he gave an enlightening perspective on the field of tribology and about his legendary mentors. I wish to thank Tim Ovaert (IJTC 2007 Chair), Greg Sawyer (IJTC 2007 V. Chair) and the entire CPC for a job well done. Brad Miller has served the TD well chairing the Membership Development Committee, holding a successful student competition in the IMECE 2006. This committee is now chaired by Al Segall. With the assistance of Ali Erdemir they have put in motion a similar student competition at the IJTC 2007. There was excellent interaction between the students, participants, and the judges, and cash prizes (intended to offset student travel expenses) have been awarded. The EC views students' participation and membership development (especially international membership) vital to our success and sustained growth.

IJTC 2008 in Miami is already being fully planned and the CPC is already working hard to provide the membership with a similar rewarding experience. Moreover, while WTC IV is scheduled to take place in Japan in 2009, IJTC 2009 will commence about six weeks later in Memphis, TN, which is the cradle of the Mississippi delta blues (Beale Street), the birth of rock and roll (Sun Studios, and

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Graceland), the legendary Peabody Hotel, Southern hospitality and barbecue. With the strength of international currencies against the US dollar we anticipate even stronger IJTC participation in the years to come. The IJTC has always been and will always be the premier conference on tribology research. Each time with excitement I am looking forward to meet friends and colleagues, discuss, and debate today's most intriguing research topic.

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Chair's Message

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In closing, I wish to thank Mike Bryant of the University of Austin Texas, who has edited the Journal of Tribology for the past three years. Major improvements have been implemented in the operation of JOT by being more responsive to authors and bring papers more quickly to publication. I am thankful to the chairs and members of standing and technical committees who provide the range and depth to our division, to the ASME staff, Richard Ulvila (who will no longer support the TD, but he continues with ASME supporting other divisions), Lee Hawkins our new HQ support officer (welcome on board!), and to Jacinta McComie who works tirelessly behind the scenes to make things happen. My term with the TD/EC will end in June 2008. I am looking forward to your input for improving the operation and the business of the TD. More detailed reports from the EC members follow (reports were prepared before the IJTC 2007).

Itzhak Green
Tribology Division Chair

Membership Development Committee – Al Segall

To help students become participants in the tribology community, the Tribology Division implemented a program last year to support and encourage student development and participation. The \$2500 spent on the student paper competition was very successful, and a good example of investing in students. Consequently the program will be continued as an annual **Young Tribologist Poster/Paper Contest** as follows:

The Membership Development Committee of the ASME Tribology Division will oversee the introduction of a Young Tribologist Poster/Paper Contest to increase interest and involvement of students in the ASME Tribology Division and the field of Tribology. The Membership Development Committee will be responsible for organizing and judging the papers. The Paper Contest Committee will work with the Technical Expositions Committee to incorporate the contest into the conference schedule and program of the 2007 IJTC. The contest rules will be posted on the Tribology Division website. Further advertisement will involve e-mail distribution of contest rules to university department heads and faculty. The Tribology Division Brochure also will mention the paper contest and direct interested individuals to the Tribology Division website. There will be five (5) \$300 finalist prizes and two (2) \$300 top prizes. All participating students will be encouraged to consider publishing their papers as Technical Notes in the ASME Journal of Tribology.

Technical Exposition Committee – Ali Erdemir

1. IJTC-2007 - TEC has been very active in the coordination of the IJTC-2007 which will be held in San Diego, CA, Oct. 22-24, 2007. Some major changes have been proposed and implemented in recent months to increase the size, visibility, and quality of this conference in coming years. Specifically, a set of new guidelines for abstract submissions and processing we developed and implemented with the approval of both ASME-Tribology Division and STLE Executive Committees. An international advisory board to help publicize IJTC in different parts of the world was also established. The endorsement and sponsorship of other international Tribology societies was solicited again to increase visibility of IJTC as a truly international Tribology conference.

2. ASME-International Exposition and Congress-Nov. 11-15, 2007, Seattle, WA.

TEC has participated in the training and orientation meetings offered during the 2006 Congress in Chicago. Concerning the organization of separate symposia or sessions at the incoming ASME-International Exposition and Congress (Nov. 11-15, 2007, Seattle, WA) major changes were proposed and implemented during the 2006 Congress in Chicago. From now on, separate symposia or sessions in predetermined topical areas will have to be in the form of several divisions soliciting, sponsoring and organizing. The TEC proposed to take part in the following tracks:

1. Materials in Engineering Applications
2. Nanotechnology/Microtechnology
3. Design and Manufacturing
4. Mechanics of Materials
5. Fluid Mechanics and Thermal Systems
6. Energy Technologies
7. Transportation Systems
8. Biotechnology and Biomaterials

3. IJTC-2008, Oct. 20-22, 2008, Miami-Florida. Conference site is Hyatt Regency Hotel, 1st announcement is out.

4. 2009 is the year when WTC-IV will be held in Japan. In the past, we did not have IJTC during the years when WTCs were held. It was decided for the IJTC-2009 to hold it in Memphis as it is mid-America, and have it in late October or early November so as to avoid conflict with the WTC IV. The conference could be co-organized under the umbrella of ASME-International Congress and Expo or with one of the ASME divisions.

Research Committee on Tribology (RCT) – Michel Fillon

The previous year the RCT had 5 voting members, which was not enough to maintain the required activity level. The number is now up to 11 members: George Adams, Oyelayo Ajayi, Michel Fillon, Judith Harrison, Diann Hua, Michael Khonsari, Michael Lovell, Farrukh Qureshi, Ray Snidle, Jeffrey Streator, Dong Zhu (voting members), Timothy Ovaert, Nelson Forster (non voting mem-

bers). Michael Lovell has been elected as Vice Chair and J. Streator as Secretary of RCT.

Mike Lovell and Mike Khonsari organized the next workshop sessions for IJTC 2007 on "Virtual/Computational Tribology". The revised Operating Guide of the RCT was approved by the EC in its meeting at the IJTC 2007.

Publication Committee – Mike Hoeplich

It has been suggested that the Impact Factor (IF) measure of ASME's Journal of Tribology has not been keeping pace with other tribology journals. This is possibly a subject of concern as a possible indicator of the journals perceived change in stature as a premiere archival journal. The IF of a journal is the average number of times that articles published during a two year period are referenced during the subsequent third year. For example, the 2004 Impact factor for a journal would be calculated as follows:

A = Number of times articles published in 2001-2 were cited in tracked journals during 2003

B = Number of articles published in 2001-2
2003 Impact Factor = A/B

This is used as a measure of the significance of the journals content and those who publish in it. As with most rating systems, there are pros and cons. A variety of factors affect a journal's IF, such as, the ability of the journal to attract prestigious authors, innovative researchers, being selective in accepting or soliciting papers, provide easy access to journal searches and provide good marketing. The use of a professional

publishing house is beneficial. The mission of a particular journal may constrain its options if it is strongly associated with a broadly based membership, such as ASME, and gathers many of its papers through conference proceedings, as opposed to a for profit journal that has fewer restraints on material published, more professionally written, published and marketed to a wider readership.

The paper acceptance process can be improved in several ways by the journal, editors, reviewers, and authors but speeding up the reviewing process would be to everyone's benefit. In response, Mike Bryant the Editor of the Journal of Tribology implemented a number of improvements to the publication process to improve the impact factor and, consequently, the Editors have reduced the time to publication for a paper. The efforts of Journal of Tribology's editors should produce more citations within the two years subsequent to publication. Finally, ASME now previews titles of papers scheduled for upcoming issues <http://journaltool.asme.org/Content/ViewIssueContents.cfm>, to alert authors of forthcoming papers to reference. ASME plans to include abstracts in these previews.

Committee on Nanotribology and Micro/Nano-Systems – Shao Wang

The Committee on Nanotribology and Micro/Nano-Systems (NMNS) was officially founded in 2006, with Shao Wang, Michael T. Dugger, and Lior Kogut as its Chair, Vice-Chair and Secretary, respectively. The mission of NMNS includes promoting close cooperation and exchange of technical information among researchers, developers, etc., in both the nanotribology field and the applied areas of MEMS/NEMS. Its recent activities included organizing the nanotribology track and sessions in collaboration with the IJTC Conference Planning Committee (through Kathryn J. Wahl). As a result, the area of nanotribology studies of IJTC has been significantly expanded to include four sessions this year. In addition, this committee has also devoted its effort to collaboration with the Contact Mechanics Technical Committee (CMTC) in organizing the Symposium on Interfacial Phenomena in MEMS. Furthermore, NMNS has organized a MEMS panel discussion session. This panel session was designed to be run in a different format compared to regular technical sessions so as to engage the audience in participation of in-depth technical discussions. Realizing that a connection between the engineering tribology community and the related basic scientific fields are vital to raising the standards of research, an Interdisciplinary Studies Subcommittee (chaired by Min Zou) formed within NMNS has explored the possibility of inviting researchers in fundamental fields relevant to tribology to give presentations. There were indeed interested speakers from some fundamental fields, such as those related to surface chemistry and surface physics. However, the chance for their participation was finally hampered by the inability of NMNS to provide any financial support for their trips to IJTC, as the option of their self-financing turned out to be unworkable. This was an interesting exploration although the problem with the funding source will be a topic for discussion within the Tribology Division for any similar expansion of the conference in the future.

INTERESTED IN CAVITATION EROSION?

ASTM's Subcommittee G02.10 on Erosion would like to hear from you if you have any interest in cavitation erosion testing. Do you (or your organization):

- Use (or have used) ASTM Method G 32 for cavitation erosion testing?
- Use (or have used) *any other* cavitation erosion, or liquid impingement erosion, test method? (For example, ASTM G 73 or G 134.)
- Have any concern with cavitation erosion as a field problem or research topic?

If *any of above apply*, please contact the following with a brief explanation:

Frank J. Heymann, task group chairman
25 Thornton Way # 205, Brunswick, ME 04011, USA
Email: marseah@gwi.net
Phone: 207-725-7073

The objective of this effort is to help us determine the degree of interest in, and importance of, cavitation erosion test methods at the present time. If you respond, we will send you a questionnaire and hope you will be willing to reply to that also!

As you may know, ASTM develops "voluntary consensus standards" – many now also used internationally – in many fields. My committee, "G-2 on Wear and Erosion," first published "Test Method G 32 for Cavitation Erosion Using Vibratory Apparatus" in 1972, and it has been revised several times – the current edition is G32-06.

Our Subcommittee (G02.01 on Erosion by Liquids and Solids) has decided that, before we consider yet another revision effort, it was time to review the extent and nature of current interest in cavitation erosion testing. How useful and important is the G 32 standard, or any other cavitation erosion test method today?

So we are trying to bring this information-gathering effort to the attention of those who may be interested, through notices in periodicals and direct communications.

Frank J. Heymann