

K-16 Electronics Cooling Committee
Meeting Minutes
Wednesday, November 14, 2001, 4-6 pm
IMECE 2001, New York, NY

Attending: Cristina Amon (Carnegie Mellon University), Eric Zimmerman (USMA, West Point), Greg Walker (Vanderbilt University), Amy Fleischer (Villanova University), Tim Fisher (Vanderbilt University), Jayathi Murthy (Purdue University), Suresh Garimella (Purdue University), Al Ortega (University of Arizona), Mike Yovanovich (University of Waterloo), Avi Bar-Cohen (University of Minnesota), Mike Ellsworth (IBM, Pughkeepsie), Ann Anderson (Union College), Ali Khounsary (Argonne Lab), Tim Bennett (DVIRC), Dereje Agonafer (University of Texas at Arlington), and Charles Johnson (Bell Labs, Lucent Technologies)

Topics:

1. **Update from the executive committee, Rep. Yildiz Bayazitoglu**

- Bylaws have been amended. Committee chairs will begin and end at summer meeting. Amendments will be sent to K chairs and will be put on web.
- Two ad-hoc committees have been promoted: Education is now K-21 and Visualization is now K-22
- Subscriptions to "Recent Contents" is dropping and they are now losing money. Contact Jill Petersen with ideas.
- A new committee of past Heat Transfer Division chairs is being considered. This committee would serve in an advisory role.
- Basic Engineering Group (BEG) is considering pulling out of IMECE for 2003 because of the cost overruns in ASME and excessive conference fees. Carl Herakovich (VP of BEG) would like feedback and thoughts on this. His email is (herak@virginia.edu)
- KCR and session chair information meetings will be held on Thursday Nov. 15 at 10 am and 2 pm
- HTD Memorial awards became ASME awards and the 3rd Memorial award is now funded (all 3 awards are now funded with endowment of 75K)
- For joint Thermophysics conference, the executive committee has ok'd extended abstract form instead of peer reviewed fullpapers. Is this ok? Need guidelines for extended abstracts
- Upcoming conferences: AIAA/ASME Joint Thermophysics conference St. Louis, June 24-27, 2002; IMECE, New Orleans, Nov. 17-22, 2002.
- Several options are being considered for NHTC 2003

2. **IMECE 2001** update from KCR Tim Fisher. K-16 sponsored 8 standup, 1 poster and 1 panel sessions with a total of about 35 papers. Attendance was 40-75 per session. The nano-track sessions were well attended.

3. **InterPACK 2001** update from Al Ortega. K-16 operates jointly with EPPD in InterPACK. The conference drew 280 participants and was considered a success. The conference made about \$30,000. For 2003, it will be held in Maui, July 6-11. There is a need for more involvement from K-16. Contact Al Ortega, program chair, for more information.

4. **THERMES 2002**, Thermal Challenges in Next Generation Electronic Systems, UEF conference update from Suresh Garimella. The conference will be held Jan 13-16, 2002. Organizers are expecting 40 papers, 10 invited speakers, 4-5 keynote speakers, 5 panels. The conference will be all inclusive and will have long talks. Expect a lot of interaction. So far the response has been positive.

5. **ITherm 2002** update from Cristina Amon. The conference will be held in San Diego, May 29-June 1, 2002 and co-located with ECTC. So far there are 238 abstracts that have been submitted. Three parallel sessions are planned; there may be more. The deadline for papers was Nov. 16. This will be extended by two weeks.

- ITherm conferences have been led and organized by k-16 members (e.g., past chairs: Avi Bar-Cohen,

Al Ortega, Sushil Bhavnani, Dereje Agonafer, current chair: Cristina Amon). However, financial support has come from IEEE CPMT. Goal is to have 25% support from ASME and 75% support from IEEE. Discussions are ongoing. Would like also some sort of reciprocal arrangement for InterPACK.

- Al Ortega is coordinating several 1-day short courses to be offered during the ITherm conference. He wants a few courses in diverse areas. The format would be introductory for the first half day and advanced treatment the second half. Deadline for pre-conference short course proposal submission is December 14, 2001. Short Courses will be announced by January 15, 2001. More information in <http://www.itherm.org/program3.cfm>
- Call for nominations for "ITherm achievement award." Submit nominations to Sushil Bhavnani, Chair ITherm Achievement Award Selection Committee by January 15, 2002; More information in <http://www.itherm.org/achievement.cfm>
- There is the possibility that ITherm competes with NHTC (not in 2002 because of the international conference). However, Bar-Cohen notes that the fate of NHTC is uncertain. Since K-16 will continue to play a major role at ITherm conferences, would it be possible to organize also sessions at NHTCs, scheduled within a month apart? Informal consensus agrees that K-16 may not be able to support sessions at NHTC compared to ITherm.
- Dereje Agonafer updated the list of ITherm 2002 Keynote speakers who have accepted: CTO from HP, Cray, Intel, and U of Arizona, Tucson.

6. **Next K-16 meeting** will be held at ITherm 2002.

7. There will be no sessions at AIAA/ASME Joint Thermophysics Conference 2002 sponsored by K-16.

8. Update on **12th IHTC** in Grenoble, August 18-23, 2002, from Avi Bar-Cohen. 120 posters, 140 abstracts, 80 full papers, final deadline in two weeks, typically 750 heat transfer experts attracted. Next time 2006 in Melbourne, Australia, 2010 possibly in U.S.

9. Proposed sessions for **IMECE 2002**. The list of the six sessions k-16 requested was distributed:

1. Micro and Nano Scale Heat Transfer in Electronics (Amon and Fisher)
2. Innovative/Non-conventional cooling techniques: Thermo-Electric, Heat Pipes, Thermosyphon (Garimella and Ellsworth)
3. High Performance Liquid and Evaporative Cooling in Electronics (Lee and Bhavnani)
4. Benchmark Problems/Solutions for Electronic Cooling Application (Agonafer and Refai Ahmed)
5. Extending the Limits of Natural and Forced Convection Cooling in Electronics (Ortega and Mulay)
6. Fundamentals of Electronics Cooling (Majumdar and Meekisho)

- In addition to the 6 sessions k-16 has already requested for IMECE02, the following 2 panel sessions and one stand up session were proposed:

Panel 1: "Challenges in Cooling High Heat Flux Electronics Systems"

Chair: Mike Ellsworth

IBM, mje@us.ibm.com

Co-Chair: Dereje Agonafer

U.Texas at Arlington, agonafer@uta.edu

Panel 2: "Emerging Problems in Thermal Management"

Chair: Ali Khounsary

Angonne Lab, amk@aps.anl.gov

Stand up session for extended abstract submissions: "Emerging Problems in Electronics Thermal Management"

Co-Chair: Al Ortega

Univ. of Arizona, ortega@u.arizona.edu
Co-Chair: Charles Johnson, Bell labs, Lucent Technologies, cej@lucent.com

- ASME should be made aware that names of panelist can not always be provided in time for the final program in the case of Ali's industry panel. However, the name of the panel and moderator should be listed in the program.
10. **Discussion on extended abstracts.** Should ASME accept extended abstracts along with full papers and allow both to present in the same session? How do we publicize? Perhaps industry should be allowed extended abstracts while full papers are required for academia. Perhaps sessions could be split into those that provide full papers and those that require extended abstract. Decision was made to request an additional session to accommodate extended abstract. Also the due date for extended abstract should be later, but not too late to be included in proceedings.
 11. Tentative NHTC meeting with AIChE in Houston, April 2003
 12. Thanks to Eric Zimmerman for maintaining the web pages <http://www.asme.org/divisions/htd/K16/>. Please send updates to Eric k16z@yahoo.com
 13. Opportunity for joint sessions k-16/EPPD at IMECE 02. Ganesh Subbarayan from Colorado is the KCR for EEPD.
 14. Meeting Adjournment