Meeting Minutes of the ASME K-16 Committee on Heat Transfer in Electronics
34th NHTC
Pittsburgh Hilton and Towers Hotel
Sunday, August 20, 2000
9:40 AM to 12:00 PM

In Attendance
Larry Witte, U. of Houston
Cristina Amon, CMU
Mike Yovanovich, U. of Waterloo
Shirish Mulay, Lexmark
Donald Price, Raytheon
Afshin Ghajar, Okla. St. U.
Tim Fisher, Vanderbilt
Ann Anderson, Union Coll.
Mark North, Thermacore
Rich Wirtz, U. of NV, Reno
Elliott Short, Raytheon
Charlie Johnson, Bell Labs

Minutes (T. Fisher)

- Executive committee report (L. Witte)
  - ⇒ Invitation to submit nominations for executive committee and other positions
  - ⇒ Proposal to upgrade HTD Memorial Award to ASME level; need to raise endowment
  - ⇒ Encourage to respond survey that will be sent by ASME regarding IMECE, its format and its attendance
  - ⇒ John Park, recently inaugurated ASME president, will attend honors dinner
- Meeting agenda distributed (C. Amon)
- Minutes from IMECE 99 meeting **approved**
  - ⇒ Change Elliot to Elliot Short under 2000 NHTC KCR Report (D. Price)
- Introduction of attendees
- Committee membership
  - ⇒ Committee membership should be updated and based on involvement. (C. Amon)
  - ⇒ Proposal was made to implement a 3-year absentee rule for committee membership. (R. Wirtz)
  - ⇒ Proposal was made to add R. Culham to membership. (M. Yovanovich)
  - ⇒ Committee agreed not to limit the total number of members at this time.
  - ⇒ Chair indicated need to identify potential members who are not in the current list of k-16 members. (C. Amon)
  - ⇒ Chair will contact current listed members to determine their interest in continuing service. (C. Amon)
- ITHERM 2000 Report
  - ⇒ Conference was generally successful and produced a financial surplus. (C. Amon)
  - ⇒ ITHERM 2002 will be held in San Diego with ECTC. (C. Amon)
- InterPack 2001 Report
  - ⇒ ASME has been generally unresponsive in helping with the conference web page. (D. Price)
  - ⇒ Y.C. Lee has created a temporary web site for the conference. (D. Price)
  - ⇒ ASME has recently promised to improve its level of web support. (D. Price)
  - ⇒ Cost to maintain InterPack 99 web site was $35k-$50k. (C. Amon)
  - ⇒ Conference will have 12-14 technical tracks. (D. Price)
  - ⇒ New tracks include MEMs and RF microwave areas. (D. Price)
  - ⇒ Deadline for abstracts is 11/20/00; final manuscripts are due 2/20/01. (D. Price)
  - ⇒ Concern expressed over the NHTC's future dates, which will be in June each year, and their proximity to InterPack and ITHERM conferences. (C. Amon)
  - ⇒ Discussions are ongoing for NHTC to co-locate with InterPack in 2003. (D. Price)
  - ⇒ Committee discussed the possibility of increasing emphasis on IMECE due to potential conflicts between NHTC, InterPack, and ITHERM.
- NHTC 2001 Report

  - ⇒ Conference will be held June 10-12 in Anaheim. (C. Amon)
  - ⇒ Tentative technical sessions
    1. Compact and Flow Network Modeling for Electronics Cooling (K. Kelkar, V. Calmidi)
    2. Micro-Electro Mechanical Components & Systems: Cooling and Sensing (T. Avedisian, S. Mulay)
    3. Heat Pipes, Phase Change Materials and Thermosyphons in Thermal Management of Electronics (S. Garimella, J. Rosenfeld)
    4. Telecommunications, Electronic Systems, Photonics: Thermal Issues (D. Agonafer, ??)
    5. Low Temperature Cooling of Electronics (C. Herman, P. Majumdar)
    6. Fundamentals of Heat Transfer Modes Applied to Electronics Cooling --or-- Limits of Air Cooling (A. Anderson, R. Wirtz)
  - ⇒ Tentative panel sessions
    1. Thermal Challenges in Telecommunication Systems (D. Agonafer, ??)
    2. NEMI Electronic Packaging Roadmap: Thermal Management (Bar-Cohen, Amon, Price, ?)
  - ⇒ The session chair and co-chair for session 6 (see above) will likely not be able to attend (A. Anderson, R. Wirtz) but will be glad to coordinate the review of papers.
  - ⇒ Chair will draft tentative K-16 session calls for papers and distribute to the committee. (C. Amon)
  - ⇒ D. Price will attend a NEMI roadmap meeting in the near future and expects the final version to be complete by October 2000. (D. Price)
- Web-based communications
  - ⇒ Chair requested that the committee review the K-16 and HTD web pages and provide updated information to the respective webmasters. (C. Amon)
  - ⇒ Proposal made to enhance the content of the K-16 web page by including research capabilities. (M. Yovanovich)
  - ⇒ Proposal made that subcommittees should become responsible for web content related to their work. (T. Fisher)
- Committee Vice-Chair status
  - ⇒ Chair solicits nominations for committee Vice-Chair position. (C. Amon)
  - ⇒ Preference will be given to industrial members, in keeping with the alternating academic/industrial pattern. (C. Amon)
- Subcommittees
  - ⇒ R. Culham has proposed the formation of a new subcommittee on Thermal Interfaces and has contacted G. Kroman about his interest in co-chairing the committee. M. Yovanovich delivered a report prepared by R. Culham in support of this effort. (M. Yovanovich)
  - ⇒ D. Agonafer has suggested a new subcommittee on Telecommunications. The committee agreed to support this effort. (C. Amon)
- NHTC 2000 Report
  - ⇒ Chair thanked the session organizers for their help in planning the four sessions. (C. Amon)
- IMECE 2000 Report
  - ⇒ K-16 meeting will be held on Tuesday, 11/7/00 from 9-11 AM. (C. Amon)
  - ⇒ Preliminary program is available at http://www.asme.org/conf/congress00/WAMpgs.pdf . (C. Amon)
  - ⇒ All K-16 sessions are on Wednesday to be compatible with related EEPD sessions. (C. Amon)
  - ⇒ K-16 requested four sessions and two panels, but only three sessions were allocated. One of the sessions was moved to EEPD to allow an oral presentation session instead of a poster session. (D. Price)
  - ⇒ The following sessions will be sponsored by K-16
    1. HT-160 Cooling of Electronic Components and Systems (Sammakia, Sathe)
    2. HT-20B Air Cooling Limits (Ortega, Marotta)
    3. HT-21A Application of Heat Pipes (Short, Ochterbeck)
  - ⇒ The following sessions will be sponsored by EEPD. K-16 will seek to co-sponsor these:
    1. Emerging Cooling Technologies in Electronic Systems (Agonafer, Schmidt)
    2. Panel: Thermo/Mechanical Challenges in Telecommunication Systems Packaging (Agonafer, TBD)
  - ⇒ The response to K-16 calls for papers was generally strong, but the committee was forced to move some sessions into EEPD due to lack of stand-up session availability. (D. Price)
  - ⇒ Proposal made to notify authors in the future to earmark K-16 in their paper submissions. (R. Wirtz)

- IMECE 2001 Report
  - ⇒ KCR meeting will be held on Monday, 11/6/00, from 10-12 at IMECE 2000. (C. Amon)
  - ⇒ T. Fisher was appointed the KCR for IMECE 2001. (C. Amon)
  - ⇒ Chair solicits ideas for a major theme for the K-16 sessions at the conference. (C. Amon)
  - ⇒ Chair solicits session topic proposals. (C. Amon)
- Other business
  - ⇒ S. Sathe has offered to coordinate an electronic K-16 newsletter and seeks 1-2 paragraphs on interesting technical areas (e.g., air-cooling, power roadmaps, recent patents, HERETIC technologies). (C. Amon)
  - ⇒ Proposal made to include a university research database. (C. Johnson)
- Committee meeting adjourned