# Advanced Technology Workshop on Thermal Management

## Dinah's Garden Hotel Palo Alto, California USA October 24 - 26, 2005

#### **General Chair:**

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This workshop is organized each year by IMAPS to promote discussion of leading-edge developments in thermal management components, materials, and systems solutions for removing, spreading, and dissipating heat from microelectronic devices and systems. The Workshop emphasis is for *practical, high-performance solutions* to meet current and evolving requirements in computing and wireless/telcom systems. Single-company product development concepts are acceptable subjects; however, all abstracts will be judged on novel and innovative contributions to the industry knowledge.

This Advanced Technology Workshop on Thermal Management has been held since 1992 and is considered to be one of the most successful of the IMAPS ATWs that are held each year. The 2004 Workshop included 39 presentations by OEM and component and materials manufacturers.

Another ATW will also be held in the same week, co-located at Dinah's Garden Hotel. The subject for this ATW is packaging of Light Emitting Diodes (LEDs). A discount will be offered for attendees who register to attend both ATWs. These two workshops are scheduled with no overlap. These two events in one location offer attendees the opportunity to maximize value received per travel expense budget. Information will be available on transportation methods by train and/or bus from area airports.

All authors are requested to attend the entire Workshop to maximize opportunities for interaction with registered attendees. This IMAPS Workshop format is a proven forum for effective industry networking.

**DEADLINE FOR ABSTRACTS: JULY 15, 2005** 

### PAPERS ARE SOLICITED IN THE FOLLOWING AREAS:

"High Conductivity, Low Expansion Materials: Metallic, ceramic and other composite materials with thermal conductivity equal to or higher than aluminum or copper, as well as thermal expansion closer to that of silicon and ceramic.

" Chip Level Packaging Thermal Management: Lidless and lidded packages, integrated thermoelectric devices, nonuniform conductive and convective cooling.

" Liquid and Phase-Change Cooling: Presentations on advances in alternative solutions as well as reliability, serviceability, and availability are encouraged.

" Telecommunications systems: Component-level and system-level thermal management solutions for high-performance telecommunications systems. This may include central office and base station equipment.

" Thermal interface materials: Innovative developments in thermal materials for high-performance processors, memory, and wireless/telcom components and systems. Metallic, metal matrix and polymer matrix materials will be discussed here.

" DataCom Center Cooling: Studies of cooling provisioning, airflow and temperature distribution, and migration paths from air to liquid cooling are solicited.

" Consumer Electronics: Component-level and system-level thermal management solutions for stationary and mobile systems. This may include displays, desktop and notebook computers, and handheld devices.

" Refrigeration Cooling: Presentations on advances in alternative solutions as well as reliability, serviceability, and availability are encouraged.

" Computing systems: Component-level and System-level thermal management solutions for highperformance computing systems. This may include servers and workstations.

"Market drivers: Presentations in this session are intended to combine discussion of technical challenges and drivers with perspectives on market trends, market segment size, cost drivers, and performance and reliability requirements.

#### **TECHNICAL SESSION TOPICS:**

High Conductivity, Low Expansion Materials Chip Level Packaging Thermal Management Liquid and Phase-Change Cooling Telecommunications Systems Thermal Interface Materials DataCom Center Cooling Consumer Electronics Refrigeration Cooling Computing Systems Market Drivers

#### **PREPARATION OF ABSTRACT:**

Speakers should submit a two-paragraph abstract describing their proposed 25-minute presentation **no later than July 15, 2005.** No formal technical paper is required. A reproduction-ready two- to six-page concise summary with text (figures and graphs included if necessary) will be required for the abstract booklet in September. A post-conference CD will be distributed to all attendees containing the full presentation material as supplied by authors.

Abstracts must be submitted on-line at <u>www.imaps.org/abstracts.htm</u>. E-mail or phone Jackki Morris-Joyner with questions: <u>jmorris@imaps.org</u> or 305-382-8433. Official workshop site: <u>www.imaps.org/thermal</u>