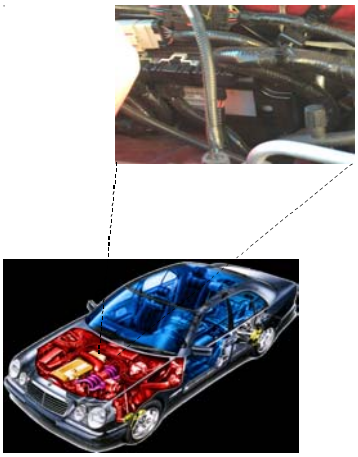
Advance Program, Exhibition Information and Registration on-line: www.imaps.org/hitec

IMAPS International Conference and Exhibition on

High Temperature Electronics (HiTEC 2006)

May 15 – 18, 2006

Hilton of Santa Fe
Santa Fe, NM



General Chair:
R. Wayne Johnson, Auburn University
johnson@eng.auburn.edu

General Co-Chair:
Randy Normann, Sandia National Laboratories
ranorma@sandia.gov

Technical Chair:
Patrick McCluskey, University of Maryland
mcclupa@eng.umd.edu

Technical Co-Chair:
Susan L. Heidger, Air Force Research Laboratory
susan.heidger@wpafb.mil

Sponsored by:
International Microelectronics And Packaging Society (IMAPS)
"Everything in electronics between the chip and the system"

The Air Force Research Laboratory, WPAFB

Sandia National Laboratories

Jet Propulsion Laboratory

Sandia National Laboratories

Program Overview

Plenary Session
Chair: Clarence Severt, USAF, AFRL/PRPE

Session TP1: Sensors
Chair: Ali Sayir, NASA Glen Research Center

Session TP2: Packaging I
Chair: Joseph Weimer, Air Force Research Laboratory

Interactive Forum (Poster Session)
Chair: F. Patrick McCluskey, University of Maryland

Session WA1: HT Integrated Circuits I
Chair: Harold Synder, Physical Solutions

Session WA2: Emerging Technologies I
Chair: Don Shiffler, AFRL/DEHP

Session WA3: HT Integrated Circuits II
Chair: Chris Hutchens, Oklahoma State University

Session WA4: Emerging Technologies II
Chair: Jim Scofield, AFRL/PRPE

Session WP1: HT Integrated Circuits III
Chair: Bruce Ohme, Honeywell Defense & Space Electronics Systems

Session WP2: Packaging II
Chair: R. Wayne Johnson, Auburn University

Session THA1: Silicon Carbide Discrete Devices I
Chair: Bruce Geil, Army Research Laboratory

Session THA2: High Temperature Batteries
Chair: David Ryan, Air Force Research Laboratory

Session THA3: Silicon Carbide Discrete Devices II
Chair: Anant Agarwal, Cree, Inc.

Session THA4: Capacitors I
Chair: John Witham, Sandia National Laboratories

Session THP1: Passives & Packaging
Chair: Randy Normann, Sandia National Laboratories

Session THP2: Capacitors II
Chair: Tom Shrout, The Pennsylvania State University/TRS Technologies Inc.

Session THP3: Emerging Technologies III
Chair: Susan Heidger, Air Force Research Laboratory

Early Bird Registration, Tabletop Registration and Hotel Deadline: April 14, 2006.

Message from the General Chair:

The members of the Conference Committee are pleased to invite you to the IMAPS High Temperature Electronics Conference (HiTEC 2006).

This is the premier event addressing the needs of the high temperature electronics community. Applications for high temperature electronics include underhood automotive, oil well logging, geothermal, more electric aircraft, space, industrial sensors, etc.

HiTEC 2006 provides a comprehensive technical program addressing the applications, and the latest development in devices, circuits, MEMS, sensors, packaging, power sources, and materials to address the challenges of these applications.

Tabletop exhibits will complement the technical program by providing you an opportunity to view the latest products for high temperature electronics.

This is a truly unique opportunity for suppliers, fabricators, and users to meet and talk about the needs, issues and opportunities in this exciting and important area.

Please join us in wonderful Santa Fe, New Mexico for HiTEC 2006.

R. Wayne Johnson, Auburn University

HiTEC Tabletop Exhibition

"An opportunity to talk to industry leaders"

Exhibit Hours

Tuesday - May 16 10 am - 7:30 pm

Refreshment Breaks, Lunch and a Reception will be held in the Exhibit Hall.

Wednesday - May 17 10 am - 3:00 pm

Refreshment Breaks and Lunch will be held in the Exhibit Hall.

Tabletop Registration Fees

	On/Before 4/14/06	After 4/14/06
IMAPS Corporate Member	$550	$650
Non-Corporate Member	$650	$750

Included with your registration: one six ft. draped table, two chairs, carpeting, one copy of Proceedings CD-ROM, one copy of the final list of attendees and exhibit hall admission for two booth personnel.

Only tabletop exhibits will be accepted. Free standing exhibits will not be allowed at this event.

For more information visit www.imaps.org/hitec or contact IMAPS at *202-548-4001*

Exhibitors on HiTEC 2006 CD-ROM

IMAPS will provide all exhibitors an opportunity to provide an unlimited amount of pages of company products, services and contact information to be included on the Proceedings CD-ROM. These CD-ROMs are provided to all technical conference attendees and are for sale through IMAPS to all industry professionals.

This unique feature will promote the Exhibitor's products and abilities much longer than just the Conference. There is a charge of $50 for this optional feature; go on-line or see the registration page to sign up.

Submissions must be sent electronically in one (1) file, either PDF or Word, that is easy to open, not password-protected and in a logical format. Any materials not sent in the required format or that arrive after the deadline, may not appear on the CD-ROM and no refunds will be made. **Send files to Ann Bell abell@imaps.org on or before April 28, 2006.**

Monday, May 15

Registration: 4:00 pm - 6:30 pm

Opening Reception: 5:15 pm – 6:30 pm

Tuesday, May 16

Registration: 7:00 am – 7:30 pm

Continental Breakfast: 7:00 am – 8:00 am

Exhibit Hours: 10:00 am – 7:30 pm
Refreshment Breaks, Lunch and Reception in the Exhibit Hall

Reception in the Exhibit Hall: 5:30 pm – 7:30 pm

Opening Remarks: 8:00 am – 8:10 am
Conference Chairs

Plenary Session
Chair: Clarence Severt, USAF, AFRL/PRPE
8:10 am – 12:40 pm

Deep Drilling Frontiers Drive Key Technology Advancements
Mike Payne, BP America Inc.

Applications of High Temperature Electronics in Space Exploration
Elizabeth Kolawa, Jet Propulsion Laboratory

A Case for High Temperature Electronics for Aerospace
Ishaque S. Mehdi,Arthur E. Brockschmidt, The Boeing Company; Kamiar J. Karimi, Boeing Commercial Airplanes

Break in Exhibit Hall: 10:10 am – 10:40 am

High Temperature & Thermal Management Needs for the FreedomCar Program
Laura Marlino, Oak Ridge National Laboratory

HTHV for the Electric Power Grid
Stan Atcitty, Sandia National Laboratories

Development of the Smart Field
Larry Lake, University of Texas

Lunch in Exhibit Hall: 12:40 pm – 2:00 pm

Conference Proceedings

If you are unable to attend the Conference and would like a copy of the CD-ROM Proceedings, you may purchase a copy by using the registration form. Your copy will be mailed to you after the event.

The cost is $200 for members; $300 for nonmembers,* plus shipping and handling. Reserve your copy on-line at www.imaps.org/hitec or call 202-548-4001.
***includes 1 year IMAPS individual membership.**

Conference Hotel

Hilton of Santa Fe
100 Sandoval Street
Santa Fe, NM 87501-2131
Phone: 505-988-2811 or 800-336-3676
www.santafe.hilton.com

Single/Double $159
Please reference IMAPS when making reservation to receive the group rate.

TP1 - Sensors

Chair: Ali Sayir, NASA Glen Research Center

2:00 pm – 5:00 pm

Sensor Amplifier for the Venus Ground Ambient
Linda Del Castillo, Travis Johnson, Toshiro Hatake, Mohammad Mojarradi, Elizabeth Kolawa, Jet Propulsion Laboratory

Performance of MEMS-DCA SiC Pressure Transducers under Dynamic Conditions
Robert S.Okojie, E.L.Benavage, S.M. Page, Jonathan Smith, Mitch Wolff, NASA Glen Research Center

A Novel Designed Thermal Vacuum / Pressure Sensor
Xiaojuan Wang, Laurence P. Sadwick, Jing-Yi Huang, The University of Utah

Parametric Stability and Failure Mechanisms of Silicon Carbide Pressure Sensors
Robert S. Okojie, P. Nguyen, V. Nguyen, E. Savrun, E. L. Benavage, D. Lukco, J. Buehler, T. McCue, NASA Glen Research Center

Layered Structured $La_2Ti_2O_7$ as a High Temperature Piezoelectric
Ali Sayir, Serene C. Farmer, Fred Dynys, NASA Glen Research Center

A 300ºC Silicon Carbide Light-Off Detector for Aircraft Engines
Vijayaraghavan Madhuravasal, Chia Ming Liu, Chriswell Hutchens, Oklahoma State University; Harmik Der Sahakian, John Klaser, Herb Swanson, Technology Development Group

TP2 - Packaging I

Chair: Joseph Weimer, Air Force Research Laboratory

2:00 pm – 5:00 pm

An Advanced Packaging Approach of SiC High Temperature Power Electronics Modules by Embedding Chip Interconnection
Zhenxian Liang, Jian Yin, J. D. van Wyk, Virginia Polytechnic Institute and State University

High Temperaure Considerations in SiC Power Converter Design - Package Design & Results
Leo F. Casey, Gregg Davis, Jim Connell, SatCon Technology Corp.

Si3N4 Based Thick Film Modules for 300C Applications
R. Wayne Johnson, Michael Palmer, Auburn University

Reliability of High Temperature Solder Alternatives
F. Patrick McCluskey, Z. Wang, M. Dash, University of Maryland; D. Huff, Virginia Tech.

High Temperature Interconnect Joints
Bryan E. Koene, Luna Innovations, Inc.; F. Patrick McCluskey, University of Maryland; Stephane Evoy, Andrew J. Murray, University of Alberta

Low-Temperature Sintering of Nanoscale Silver Paste: A Lead-free Die-Attach Solution for High-Performance and High-Temperature Electronic Packaging
J. G. Bai, Z. Zhang, J. N. Calata, T. Lei, G.-Q. Lu, Virginia Polytechnic Institute and State University

Break in the Exhibit Hall: 3:15 pm – 3:45 pm

Interactive Forum (Poster Session)

Chair: F. Patrick McCluskey, University of Maryland

5:30 pm – 7:30 pm

Extreme Temperature SOS Varactor Modeling
Jianning Wang, Yumin Zhang, Steven A. Morris, Srinivasan Venkataraman, Chris Hutchens, Oklahoma State University

High Temperature Silicon on Insulator (SOI) Deep Submicron Device Performance
Vijayaraghavan Madhuravasal, Jianning Wang, Chriswell Hutchens, Xyunu Zhu, Yumin Zhang, Oklahoma State University

Low Power Two-Path Decimation Filter Design and Implementation on Silicon-On-Sapphire (SOS) Process for High Temperature Application
Chia-Ming Liu, Chriswell Hutchens, Oklahoma State University

High Temperature Silicon on Sapphire (SOS) Analog Circuit Design Techniques and Building Blocks
Chriswell Hutchens, Narendra Kayathi, Steven Morris, Chia-Ming Liu, Oklahoma State University

High Temperature Delta-Sigma Analog-to-Digital Converter Implemented on Silicon-On-Sapphire (SOS) Process for Measurement while Drilling Application
Chia-Ming Liu, Chriswell Hutchens, Oklahoma State University; Roger Schultz, Halliburton Energy Services

High Temperature SOS Cell Library
Usha Badam, Singaravelan Viswanathan, Venkataraman Jeyaraman, Chris Hutchens, Chia-Ming Liu, Oklahoma State University; Roger Schultz, Halliburton Energy Services

Design of a High Temperature Switched Mode Power Supply Employing a V^2 Control Mechanism
Bharath Rayakota, Chris Hutchens, Steven Morris, Oklahoma State University; Roger Schultz, Halliburton Energy Services

Kirchoff's Law Analysis of GaAs MESFETs and Related Devices at High Temperatures
Xiaojuan Wang, Laurence P. Sadwick, The University of Utah

A Room Temperature to 300°C Enhanced Curtice Model with General Applicability to Field Effect Transistors
Xiaojuan Wang, Laurence P. Sadwick, The University of Utah

Design of a High-Temperature, Small Area Digital Filter on an FPGA
Bijan Houle, Vishu Gupta, Kevin Buck, Herbert L. Hess, Gregory Donohoe, University of Idaho; Randy Normann, Sandia National Laboratories

High Temperature Characterization of a Low Power HT SOI 80C51
Philippe Manet, David Bol, Renaud Ambroise, Marc Baltus, Jenny Creteur, Jean-Didier Legat, Université Catholique de Louvain; Laurent Demeus, CISSOID S.A.

A High Temperature RFID Device with 8 Kbyte Memory using COTS Parts
Steven Morris, Chris Hutchens, Oklahoma State University

Hermetically Packaged Fiber Optic Fabry-Perot Interferometric Sensor and Time-Domain Coherence Switching Interrogation Technique for High Temperature Applications
Hai Xiao, Junhang Dong, Ming Luo, New Mexico Institute of Mining and Technology; Randy A. Normann, Sandia National Laboratories

Development of Silicon Spacer DDP
Shin Kim, Dong Gil Shin, Ho Gyu Yoon, Samsung Electronics Co., Ltd.

Composite Die-Attach Materials for High-Temperature Packaging Applications
Gorindarajan Muralidharan, Terry N. Tiegs, Oak Ridge National Laboratory; R. Wayne Johnson, Auburn University

Wednesday, May 17

Registration: 7:00 AM – 5:00 PM

Continental Breakfast: 7:00 AM – 8:00 AM

Exhibit Hours: 10:00 AM – 3:00 PM
Refreshment Breaks and Lunch in the Exhibit Hall

Opening Remarks: 8:00 AM – 8:05 AM
Conference Chairs

Keynote Presentation: 8:05 AM – 8:45 AM
JIP - Deep Trek Update
Bruce Ohme, Honeywell Defense & Space Electronics Systems

Keynote Presentation: 8:05 AM – 8:45 AM
Extreme Environment Electronics
Thomas Hertel, Pratt & Whittney, Rocketdyne

WA1 - HT Integrated Circuits I
Chair: Harold Snyder, Physical Solutions
8:45 am – 10:00 am

Development of a HT Diagnostics-While-Drilling (DWD) Tool
Joseph A. Henfling, Randy Normann, David Chavira, Doug Blankenship, Sandia National Laboratories

A Proposed 68HC11 Chip Set for 275 Degrees C
Chris Hutchens, Steven Morris, Chia-Ming Liu, Oklahoma State University

A Quadruple Output 225C 7.3 Watt Isolated Switch Power Supply
Harold L. Snyder, Jr., Physical Solutions

WA2 - Emerging Technologies I
Chair: Don Shiffler, AFRL/DEHP
8:45 am – 10:00 am

Investigation of Diamond Films at High Power & High Temperatures
Susan Heidger, Jacob K. Matthews, Howard E. Smith, Air Force Research Laboratory

High Temperature Operation of Nanodiamond Lateral Vacuum Field Emission Device
J. L. Davidson, K.Subramanian, W.P. Kang, B.K. Choi, M. Howell, Vanderbilt University

Thermal Properties of Freestanding Diamond Resistors
P. Hamari, P. Taylor, J. L. Davidson, W. P. Kang, Vanderbilt University

Break in the Exhibit Hall: 10:00 AM – 10:25 AM

WA3 - HT Integrated Circuits II
Chair: Chris Hutchens, Oklahoma State University
10:25 am – 12:30 pm

A High-Temperature Silicon Carbide (SiC) Multichip Power Module (MCPM) Inverter for Down-Hole Applications
J. Hornberger, E. Cilio, B. McPherson, R. Schupbach, A. Lostetter, Arkansas Power Electronics International, Inc.; H. Alan Mantooth, University of Arkansas

An SOI Precision Voltage Reference & Bias Cicuitry for Operation to 250C
Bruce Ohme, Mark R. Larson, Honeywell Defense & Space Electronics Systems

A Silicon Carbide based 350C Voltage Reference
Harold L. Snyder, Jr., Physical Solutions

A Comparison of High Temperature Performance of SiC MOSFETs and JFETs
Sei-Hyung Ryu, Sumi Krishnaswami, Husna Fatima, Bradley Heath, James Richmond, Anant Agarwal, John Palmour, Cree, Inc.; James Scofield, Air Force Research Laboratory

Performance Analysis of SOI Based Power Converter for Offline Application at 200°C
Sunny Liu, Philips Research East Asia; Carsten Deppe, Ulrich Boeke, Georg Sauerlaender, Philips Research Laboratories

WA4 - Emerging Technologies II
Chair: Jim Scofield, AFRL/PRPE
10:25 am – 12:30 pm

Internal CVD Diamond Thermal Vias for High Heat Flux Spreading in CTE-Compatible Semiconductor Package Components
David L. Saums, DS&A LLC; Brian Edward, Pete Ruzicka, Sensis Corporation; Kevin P. Fennessy, CPS Technologies Inc.; Glenn J. Sundberg, University of Massachusetts - Lowell; Jerry Zimmer, sp3 Diamond Technologies Inc.

Atmospheric Pressure Growth of Bulk GaN for Substrates for High Temperature
Karen Waldrip, Sandia National Laboratories

GaN and ZnO Based Electronic & Optoelectronic Devices for Very High Temperatures
Amir M. Dabiran, Andrei Osinsky, Andrew Wowchak, Peter Chow, Steve Pearton, Rohit Khanna, Fan Ren I.I. Kravchenko, SVT Associates, Inc.

AlGaN/GaN MODFET Device for High Temperature Applications
Hasina F. Huq, Syed K. Islam, Leon M. Tolbert, University of Tennessee

High Temperature Simulation of and Comparison with Experimental Data of the Electrically Thermally Enhanced Substrate Leakage in GaAs MESFETs
Xiaojuan Wang, Laurence P. Sadwick, The University of Utah

Lunch in the Exhibit Hall: 12:30 PM – 2:00 PM

Keynote Presentation: 2:00 pm – 2:40 pm

European HT Activities
Colin Johnston, HITEN

Break in the Exhibit Hall: 2:40 pm – 3:00 pm

WP1 - HT Integrated Circuits III

Chair: Bruce Ohme, Honeywell Defense & Space Electronics Systems
3:00 pm – 4:40 pm

Building Robust 350C Test Fixtures
Randy Normann, Don Davis, Paul Vianco, Sandia National Laboratory

Conduction Heat for Lead-Free Soldering - Simple, Efficient, Economical
Sigurd Wathne, Sikama International, Inc.

Ultra Low-Power 9-bit A/D Converter for Harsh Environments
Laurent Demeus, V. Dessard, L. Vancaillie, G. Picun, Cissoid s.a.

Development of a Non-Volatile Memory Meeting Automotive Temperature & Reliability Requirements and Results
Mammen Thomas, Jagdish Pathak, Jim Payne, MEMTEK, LLC; F. Leisenberger, E. Wachmann, G. Schatzberger, A. Wiesner, M. Schrems, Austria Microsystems AG

WP2 - Packaging II

Chair: R. Wayne Johnson, Auburn University
3:00 pm – 5:30 pm

Reusable Packaging for High Temperature (800C) and High Pressure MEMS
A. Friedberger, T. Ziemann, E. Rose, G. Müller, EADS Deutschland GmbH; D. Telitschkin, S. Ziegenhagen, EADS Space Transportation; S. Fricke, H. Seidel, U. Schmid, Saarland University

Lean Process for High Temperature Hybrid Assemblies
Milton Watts, Quartzdyne, Inc.

A 500°C Electronic Package Technology for Continuous Operation in Extreme Environments
Larry P. Sadwick, J. H. Chern, R. Nelson, R. J. Hwu, InnoSys, Inc.

Managing the Heat
Ed Greenwood, Alchemetal Corp.

Lead-free Assemblies in High Temperature Applications
Anupam Choubey, J. Wu, S. Ganesan, M. Pecht, A. Leal, J. G. Labanda, L. Beneteau, University of Maryland

Reliability and Failure Analysis of Dummy IGBT Assembles using Liquid Solder Joints under Thermal Cycling
Jianfeng Li, Samjid H.Mannan, Mike P. Clode, David N. Fenner, King's College – London; David C. Whalley, Keming Chen, Loughborough University

Thursday, May 18

Registration: 7:00 am – 5:00 pm

Continental Breakfast: 7:00 am – 8:00 am

Opening Remarks: 8:00 am – 8:05 am
Conference Chairs

Keynote Presentation: 8:05 am – 8:45 am

A Review of High Power, High Temperature SiC Devices
Anant Agarwal, Jim Richmond, Cree, Inc.

THA1 - Silicon Carbide Discrete Devices I

Chair: Bruce Geil, Army Research Laboratory
8:45 am – 10:00 am

High Temperature Power Electronics - Application Issues of SiC Devices
Leon M. Tolbert, Burak Ozpineci, Oak Ridge National Laboratory; Madhu Chinthavali, 1Oak Ridge Institute for Science and Education; Hui Zhang, The University of Tennessee

Thermal Aging of Ti/AlNi/Au Ohmic Contacts to P-type SiC
Bang-Hung Tsao, Jacob Lawson, University of Dayton Research Institute; James Scofield, Air Force Research Laboratory

Properties of Unipolar SiC Power Devices for Operation Beyond 200°C Junction Temperature
Peter Friedrichs, SICED Electronics Development GmbH & Co., KG

Keynote Presentation: 8:05 am – 8:45 am

High Temperature Power Electronics for Future Aircraft
Joseph Weimer, Air Force Research Laboratory

THA2 - High Temperature Batteries

Chair: David Ryan, Air Force Research Laboratory
8:45 am – 10:00 am

High Temperature Power Sources for the Drilling Industry
V. R. Koch, D. M. Ryan, Covalent Associates, Inc.

Intrinsically Safe High Temperature Battery for Borehole Applications
Za Johnson, Brian Burns, Scott Preston, David Pickett, Mobile Energy Products, Inc.; Ron Guidotti, Sierra Nevada Consulting

High Temperature Battery for Drilling and Logging Industry
Josip Caja, T. Don, J. Dunstan, Electrochemical Systems, Inc.

Break: 10:00 am – 10:20 am

THA3 - Silicon Carbide Discrete Devices II

Chair: Anant Agarwal, Cree, Inc.

10:20 am – 12:00 pm

High-Temperature Reliability of 4H-SiC Vertical-Channel Junction Field-Effect Transistors (VJFETs) for Power Conditioning System Applications
L. Cheng, M. S. Mazzola, J. R. B. Casady, J. B. Casady, SemiSouth Laboratories, Inc.; P. Martin, V. Bondarenko, H. Causey, Mississippi State University

Characterization & Packaging of SiC JFET Half Bridge Modules for Extreme Environment Motor Drives
R. Wayne Johnson, Volodymyr Bondarenko & Paul Martin, Michael S. Mazzola, Robin Kelley, Janna Casady, Auburn University

Summary of SiC BJT Switching
Steven Kaplan, Dimos Katsis, Timothy Griffin, U.S. Army Research Laboratory

Switching Characteristics of a SiC-based BJT to 200C
Janis M. Niedra, Gene E. Schwarze, QSS Group, Inc.

THA4 - Capacitors I

Chair: John Witham, Sandia National Laboratories

10:20 am – 12:00 pm

High Temperature Ceramic Capacitors
E. F. Alberta, W. S. Hackenberger, TRS Technologies, Inc.; C. J. Stringer, C. A. Randall, T. R. Shrout, Penn State University; S. Mounce, Arkansas Power Electronics International, Inc.; G. E. Schwarze, NASA Glenn Research Center

High Temperature Capacitor - Sodium Bismuth Titanate - Idea to Application
Walter Schulze, Conor Walsh, Gerald Wynick, Francis Williams, Alfred University; Keith Bridger, Arthur Cooke, Active Signal Technologies; James Weigner, Lockheed Martin Maritime Sensors and Systems

Life Time Study of Two Types of Capacitors for High Temperature Applications
Oystein Dugstad, Oddbjorn Vagle, Bernt Pedersen, Roxar Flow Measurements AS

MicroPelt®: Leading Edge Thermoelectric Micro Devices Technology and Application
Bernhard Loibl, Andreas Scholle, Inheco GmbH

Lunch: 12:00 pm – 1:00 pm

Keynote Presentation: 1:00 pm – 1:40 pm

High Temperature Power Electronics at ARL
Bruce Geil, Army Research Laboratory

Keynote Presentation: 1:00 pm – 1:40 pm

NSF - Earth Monitoring
Harold Tobin, New Mexico Tech

THP1 - Passives & Packaging

Chair: Randy Normann, Sandia National Laboratories

1:40 pm – 2:30 pm

High Temperature Dielectric Properties of Aluminum Nitride
Ender Savrun, Di Wu, Sienna Technologies, Inc.

Temperature Dependent Dielectric Properties of Polycrystalline AlN Substrate with Yttrium Additive
Liang-Yu Chen, OAI/NASA Glenn Research Center

THP2 - Capacitors II

Chair: Tom Shrout, The Pennsylvania State University/TRS Technologies Inc.

1:40 pm – 2:30 pm

Passive Components and Interconnect-Pressure Cycling at High Temperature
Rolf Johannessen, Froydis Oldervoll, Truls Fallet, SINTEF Information and Communication Technology; Per Ohlckers, Vestfold University College

Microstructure & Morphology of Carbon Nitride (CNx) Thin Films for use as a High Temperature Dielectric
William Lanter, David C. Ingram, B. Allen Tolson, Charles A. DeJoseph, ISSI

Break: 2:30 pm – 2:50 pm

THP1 continued - Passives & Packaging

Chair: Randy Normann, Sandia National Laboratories

2:50 pm – 4:05 pm

Practical Aspects of Building a 300°C Ferrite Planar Transformer
Art Brockschmidt, Rob Matson, Ishaque S. Medhi, Boeing Phantom Works; Russ Spyker, US AirForce Research Lab.; Joe Huth, Spang Corporation

Conformal Coatings for 225°C Applications
Steven Knudsen, Sandia National Laboratories

Polyimide Thermal Curing Process Optimization for High Temperature Wide Bandgap Semiconductor Device Passivation
Sombel Diaham, Marie-Laure Locatelli, Thierry Lebey, Samir Zelmat, Vincent Bley, Paul Sabatier University

THP3 - Emerging Technologies III

Chair: Susan Heidger, Air Force Research Laboratory

2:50 pm – 4:30 pm

SSVDs: 500°C Electronics for Extreme Environmental Applications
Larry P. Sadwick, J. H. Chern, R. J. Hwu, InnoSys, Inc.; L. Del Castillo, T. W. Johnson, M. M. Mojarradi, Jet Propulsion Laboratory

Active Cooling Technology for Aerospace Controls and High Power Density Electronics
Kenneth Semega, US Air Force Research Laboratory

High Temperature Water Heat Pipes
David B. Sarraf, William G. Anderson, Advanced Cooling Technologies, Inc.

An Effectual Approach to Substantial Cost Savings: The Utilization of Advanced Commercially available Polymers in Military Fiber Optic Applications
Gregory T. Daly, Lockheed Martin Maritime Systems & Sensors

Registration Form

Register On-Line at www.imaps.org/hitec

HiTEC 2006 Conference - May 15 - 18, 2006

❑ Dr. ❑ Mr. ❑ Ms. Member ID# _____

First Name _____ M.I. _____ Last Name _____

Company/Affiliation _____ Job Position _____

Address _____

City _____ State _____ Zip _____ Country _____

Phone _____ Fax _____ Email _____

Registration Fees: Early Registration Ends 4/14/06

Conference Fees	(On or before 4/14)	(After 4/14)
❑ Member (IMAPS)	$375	$475
❑ Non-member*	$475	$575
*Includes one-year individual membership in IMAPS		
❑ Speaker ❑ Chair	$275	$375
❑ Student ❑ Chapter Officer	$275	$375
Conference Fee includes an Extended Abstract Book, all meals listed and a CD-ROM Proceedings.		
❑ Exhibits Only	Free	$10

Tabletop Exhibit (May 16th & 17th)

❑ IMAPS Corporate Member	$550	$650
❑ Non-IMAPS Corporate Members	$650	$750
❑ Yes, we will participate in the CD-ROM*	$50	

*see inside front cover for details and deadlines.

Additional Purchases

❑ Guest/Family Member *(meals only)*	$160	$160
❑ CD-ROM Proceedings *(Member Rate)*	$200	$200
❑ CD-ROM Proceedings *(Non-Member Rate)*	$300	$300
❑ Add to Ship in the US	$7	$7
❑ Add to Ship Overseas	$25	$25

Housing *(Hotel Cut-off is April 14, 2006)*

Housing Accommodations **must** be made directly to:

Hilton of Santa Fe
100 Sandoval Street
Santa Fe, NM 87501-2131
Ph: 505-988-2811 or 800-336-3676
www.santafe.hilton.com

Single/Double - $159

Please reference IMAPS when making reservation.

To reserve room on-line, go to

www.santafe.hilton.com
Enter your arrival & departure dates, click Go.
Enter "**IMA**" in the field for Group/Convention Code and continue through making your reservation.

Payment

HiTEC06

Conference Fee: $_____

Tabletop Exhibit Fee: $_____

Additional Purchases: $_____

Total Payment Due: $_____

❑ Enclosed is a check payable in US funds to IMAPS

❑ Charge my fees to:

❑ Visa ❑ MasterCard ❑ Discover ❑ Amex ❑ Diners Club

Card # _____ Exp. _____

Signature _____

Card billing address, if different from above: (required)

_____

_____

For Wire Transfer information call 202-548-4001.

Mail this form with payment to: IMAPS * 611 2nd Street, NE * Washington, DC 20002-4909. For credit card transactions, register on-line: www.imaps.org; or register by phone with your credit card by calling 202-548-4001; Fax: 202-548-6115. Additional information? E-mail: IMAPS@imaps.org, or visit our web site: http://www.imaps.org. Cancellations will be refunded (less a $50 processing fee) only if written notice is postmarked on or before **Friday, April 28, 2006**. No refunds will be issued after that date.

IMAPS Registration
611 2nd Street, NE
Washington, DC 20002-4909

"Address Service Requested"

Presorted
First-Class Mail
U.S. Postage
PAID
Merrifield, VA
Permit No. 6418