

# The **B E E T**

## *The Bulletin of Electrical & Electronics Engineers of Tucson*

### **IEEE TUCSON SECTION MEETING**

### ***Microprocessor Power Delivery: Drivers, Metrologies and Future Challenges***

Date: Thursday, March 1, 2007, 6:00 P.M.

Speaker: Dr. Michael Hill

Place: AME S202, NE corner of Speedway and Mountain

Today's high performance microprocessors require high performance packages & power delivery networks (PDN) for proper function. The design of a PDN capable of providing 100+ Amps of clean power to a highly dynamic load like an Intel® Core™ 2 Quad Processor requires careful attention to all aspects of the PDN design, including component selection and layout parasitics. These relatively uncontroversial statements parallel many of the statements found in most packaging textbooks, but they only hint at some of the challenges faced by today's microprocessor package & system power delivery designers. Most academic packaging programs limit their focus to relatively isolated technical issues and tend to overlook some of the true challenges and technical achievements in the field. Often the solutions to the academic problems can not be applied in a high volume manufacturing (HVM) setting; however, many of the most interesting and technically rewarding fields of the discipline relate to the HVM context. This presentation will provide a high level overview of the microprocessor PDN design problem and some of the challenges introduced by HVM. An overview of several state-of-the-art PDN related metrologies will also be presented, and the impact of those metrologies discussed. Highlights of future challenges relevant to the electronic packaging discipline and related academic fields will be covered.

Michael J. Hill is a Staff Electronic Packaging Engineer at Intel Corporation in Chandler, Arizona. His work includes the development of new techniques and tools enabling precise characterization of the microprocessor power delivery network at both the package and motherboard levels. Michael is a member of the IEEE Microwave Theory and Techniques Society, Eta Kappa Nu, and Tau Beta Pi. He holds B.S., M.S. and Ph.D. degrees in Electrical Engineering from the University of Arizona.

Next Meeting: Peter Siegel, Terahertz Technology in Outer and Inner Space – Tentatively March 27, 2007!

### **Conferences Coming to Tucson**

The IEEE Computer Society will sponsor the 8th IEEE Workshop on Mobile Computing Systems and Applications (HotMobile). This conference will be held 26-27 February

2007 in Tucson at the Westin La Paloma. For more details see:

<http://www.cs.toronto.edu/hotmobile2007/>

The 2007 IEEE Symposium and Workshop on Engineering of Computer Based Systems (ECBS) (Meeting #12302) will be coming to Tucson. This conference will be held 26-29 March 2007 at the Doubletree. For more details see:

<http://www.ece.arizona.edu/~ecbs07>

### **Feedback and Volunteering**

We need to hear from you! We want to know what we can provide to make IEEE a better organization. If you have any ideas for meetings, any activities that promote engineering and the IEEE, let us know! We'd like to hear from you. Also, remember that we run this as a set of volunteers. If you put something into this organization, you can get much more out of it! We need you to help out! Contact us! Help out! Contact us!

The Tucson Section also has standing committees whose chairperson is not elected, but is appointed by the Section Chairman. If you are interested in any of these positions or are interested in having a say in what the Tucson Section does, please notify Joseph Wu at [joewu@ieee.org](mailto:joewu@ieee.org) or at 325-4781.

### **Computer Society Chapter Forming**

A chapter of the Computer society is forming in the Tucson Section. If you're interested in this society or in getting involved, contact Andrew Gardner at [asg@ieee.org](mailto:asg@ieee.org)

### **Senior Membership**

Do you want to become a senior member of the IEEE? The IEEE wants to promote qualified candidates to senior membership! If you have 10 years of professional experience of which five years is significant professional performance, you are qualified for a senior member upgrade. Educational experience such as a bachelor's degree in an IEEE-designated field counts 4 years to that number, a master's degree counts 5 years and a doctorate counts 6 years. In order to find out more, point your web browser to [www.ieee.org](http://www.ieee.org) and search for senior membership!

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**Tucson Section Meeting  
Thursday, March 1, 2007  
6:00 PM, at the U of A  
AME S202**

**(Northeast of Speedway and Mountain – Parking  
available East of the AME building after 5 P.M.)  
Refreshments Provided**

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**Just find the link through our website and follow the  
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**Remember**

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- Also, check out the website at:

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