



## April Meeting:

### *Silicon Technology Scaling and ESD Challenges*

By: Charvaka Duvvury

**Abstract** – For more than 20 years, IC component level ESD target levels for both HBM (2kV) and MM (200V) have essentially stayed constant, with no focus on data to change these levels. Today's enhanced static control methods required by OEMs do not justify these higher HBM/MM levels. ESD over-design to these levels in today's latest silicon technologies is increasingly constraining silicon area as well as performance, and is leading to more frequent delays in the product innovation cycle. Based on improved static control technology, field failure rate, case study and ESD design data, collected from IC suppliers and contract manufacturers, there is now an industry wide proposal for reduction to more realistic and safe HBM/MM ESD target levels. This presentation will first review the silicon technology effects, followed by a discussion of the overwhelming evidence on why the industry should consider a paradigm shift in the ESD qualification requirements.

Charvaka Duvvury is a Texas Instruments Fellow working in the Silicon Technology Development group at Dallas. He has more than 25 years of experience in the semiconductor industry with specific work on advanced silicon technology research and development. His current work is on development and companywide support on Electrostatic Discharge (ESD) for the nanometer submicron CMOS technologies. He received his Ph.D. in Engineering Science from the University of Toledo. Charvaka has published over 120 papers in technical journals and conferences and holds 65 patents with several pending. He has co-authored three books on transistor reliability, modeling for electrical overstress, and ESD design. He has been very active in the ESD Symposium where he was the General Chairman both in 1994 and in 2005. He is a Director on the ESD Association Board since 1997 promoting university advanced research in ESD. He is a recipient of the Outstanding Contributions Award from the ESD Association. Charvaka is a member of the Electron Devices Society and is a Fellow of the IEEE.

### **Presidents Corner:**

Our February meeting attendance was the best ever since the Southwest ESD association was reactivated. Arnie Steinman's presentation Determining the Impact of Static Control Methods was great, and generated a great number of questions from the audience. Arnie has provided and given permission to the association to post his presentation to the web site, which we plan to do in the near future.

Again I like to thank ON-Semi Conductor for the allowing the Southwest ESD association the use of their facility and HISCO for providing snacks and beverages.

### **April Meeting**

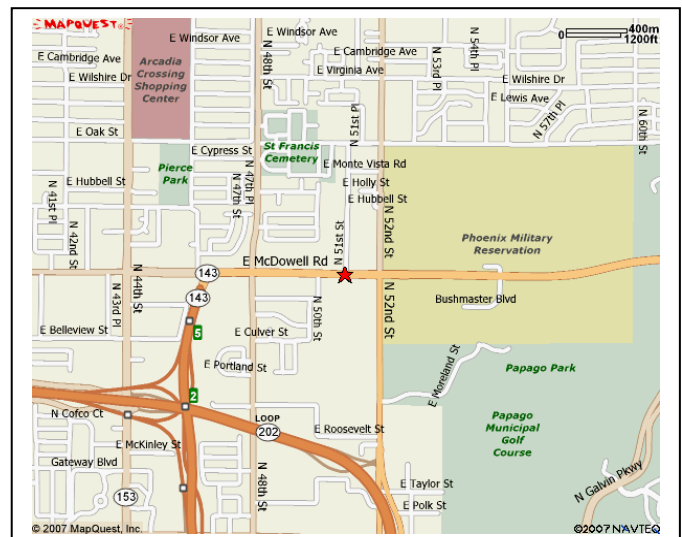
Date: Monday, April 28, 2008

Time: 6:30 p.m. Sign in & Social  
7:00 p.m. Speaker  
8:30 p.m. Close of meeting

Dinner Cost: Refreshments will be provided.

Location: **ON Semi Conductor** (See map below)  
5005 E McDowell Rd  
Phoenix, AZ 85008  
Ph: 602 244 3748

Please **RSVP by Thursday, April 24** at our website at [www.southwestesd.com](http://www.southwestesd.com) or call Chris Back at (602) 822 - 4229 (work), e-mail: [christopher.back@honeywell.com](mailto:christopher.back@honeywell.com).



**Presidents Corner continued:**

**Future meetings/events:**

Thanks to Mr. Bill Butt from Quantum Systems we now have a Meeting Coordinator. Bill is highly knowledgeable about ESD controls and products, his extensive experience within the ESD field will be a valued asset to the Association members.

At our last BoD meeting Bill provided insight on plans for future membership meetings. What are those plans, well back to the basics and general ESD processes, controls and tools. We receive many basic or common ESD questions from members and non-members. It has been suggested maybe a couple of good ole social events. We are looking for you feedback so please let us know your thoughts and interests. To contact us please visit our web site at [www.southwestesd.com](http://www.southwestesd.com).

Thank you  
Ron Roden  
President Southwest ESD Association

**Membership**

Southwest ESD Association membership continues to grow and the good news it's free until the end of this year. If you're not a member please take this opportunity to join by going to our website at [www.southwestesd.com](http://www.southwestesd.com). If you need more information about membership please contact Chirs Back, (ph: 623-266-0877) membership chair or any of the Board of Directors listed on the last page.

**Advertisers/Sponsors:**

If you are interested in Advertising or providing sponsorship please visit our web site or contact any of the BoDs. The Southwest ESD association needs your support to continue operating and providing membership service.

**Wanted: Speakers/Presenters**

It is important to provide quality ESD presentation about, process controls, products, services and training to our members. If you are interested in doing a presentation or know of someone who would like to please contact any of the BoDs listed or email me.

**EVENTS:      Symposiums/Conferences:**

The following ESD events are provided by the National ESD Association for more information and registration, please visit their website at [www.esda.org](http://www.esda.org)

- 4/21-4/22/08 Classes for Professional Certification, ESD Association Headquarters, Rome, NY.
- 9/07-9/12/08 Annual Symposium, Westin La Paloma, Tucson, AZ.
- 4/23-4/23/08 3M Innovation Center
  - o Packaging Principles for the Program Manager
  - o ESD Standards Overview for the Program
 By Dave Swenson-Affinity Static Control Consulting, LLC
  - o RF On-Chip ESD Protection Design and Test
  - EOS/ESD Failure Models and Mechanisms
 By Steven H. Voldman, Ph.D. ESD Consultant

**Board of Directors Meeting (BOD)**

Board of Directors meetings are held periodically, members are welcome to attend. Meetings will be posted on our web sites home page.

**2008**

**Southwest ESD Board of Directors / Representatives**

<u>President</u> Ron Roden (602) 822 4383 ron.roden@honeywell.com	<u>Vice President of Consumers</u> Becky Witt (480) 262 9064 becky.witt@medtronic.com	<u>Vice President of Suppliers</u> Mari Lenton (480) 968 6171 mlenton@hiscoinc.com	<u>Secretary</u> Glenn Saracino (602) 467 7320 glenn_saracino@csaa.com
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<u>Treasurer</u> Gary Timmons (602) 867 8436 esdgaryt@aol.com	<u>Meeting Coordinator</u> Bill Butt (480) 219 4553 bill@qtsm.net	<u>Membership Chair</u> Chris Back (602) 822-4229 christopher.back@honeywell.com	<u>Webmaster</u> Lesley Schulz (602) 822 4254 lesley.g.schulz@honeywell.com	<u>Newsletter Editor</u> Ron Roden (Interim) 602 822 4383 ron.roden@honeywell.com
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**Programs**

<u>Date</u>	<u>Location</u>	<u>Speaker/ Presentation</u>	<u>Presentation</u>
<b>April 28<sup>th</sup> Monday</b>	ON Semi Conductor	Charvaka Duvvury, Texas Instruments	Silicon Technology Scaling and ESD Challenges

May – TBD	TBD	TBD	TBD
June– TBD	TBD	TBD	TBD

Southwest ESD Association