

The ESD Association newsletter, for everyone with an interest in the understanding and control of electrostatic discharge.



# THRESHOLD™

Volume 21, No. 4

September/October 2005

## News bits

### Asia Forum Report

This past March the ESD Association offered education opportunities in Asia. Four cities in Asia hosted the program manager certification related courses. Also in March, the Philippine Electrostatic Discharge Forum was held in the Philippines. See page 5 for details.

### Packaging Principles course

The ESD Association is offering a course on ESD Packaging Principles on Wednesday October 12. See page 3 for details.

### Website continues to change

We are continuing to streamline the website so it will better serve users. See page 5 for more information.

### Online seminar

The next online seminar, Air Ionization, has been re-scheduled for October 25. See page 8 for more information.

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## 27th Annual EOS/ESD Symposium

Anaheim, CA, is hosting the 27th annual EOS/ESD Symposium. This symposium features research, technology, and solutions to enhance understanding, increase quality and reliability, reduce and control costs, and improve productivity. It's the one event where you will find technical papers that emphasize the latest research and technology; basic, intermediate, and advanced tutorials; exhibits of ESD control products and services; workshops; authors' corners; Program Manager Certification; Device/Design Certification; and more. The 27th annual EOS/ESD Symposium is scheduled for September 11-16, 2005, at the Marriott Anaheim in Anaheim, California. This year's symposium features in-depth educational opportunities focused on three primary tracks: ESD Test, Failure Analysis, and Systems; Factory, Materials, and ESD Control; and Device, Design, and Technology.

### Technical Sessions

This year's technical sessions feature more than 50 technical papers presented in parallel sessions. Topics covered in these technical sessions will include on-chip physics/modeling; on-chip RF; on-chip latchup; system level ESD, factory and materials; on-chip CMOS; MR heads and testing, TLP and on-chip standards.

The technical sessions begin with a plenary speaker, Tuesday, September 13. This year the topic is Advanced Thermal Modeling of Transistors by Kenneth Goodson of Stanford University.

### Tutorials and Workshops

Symposium week opens officially on Sunday, September 11, with a full day of ESD tutorials. These in-depth, full-day sessions include courses such as ESD Ba-

sics, ESD On-Chip Protection, System Level ESD/EMI, ESD/EMI Systems Testing to IEC Standards, and ESD Program Development and Assessment.

Additional tutorials are scheduled for Monday, September 12, and Thursday, September 15. The preliminary tutorial schedule reflects approximately 23 sessions, including How To's of In-Plant ESD Auditing and Evaluation Measurements, Packaging Principles for the Program Manager, and Air Ionization: Issues and Answers. Two new tutorials have been added to the schedule to help attendees obtain the ESD Certified Professional-Program Manager certification.

In addition to tutorials and technical sessions, symposium offers workshops held in panel format to help facilitate greater learning and encourage peer discussions in an interactive workshop setting. Workshops offered on Wednesday, September 14, include subjects such as on-chip ESD protection, TLP testing, cleanrooms, ESD in magnetic recording, ESD auditing, ESD automated equipment, and system level ESD considerations.

### Exhibits

Attendees will have the opportunity to visit nearly 80 exhibit booths offering ESD control products and services. Beginning the evening of Monday, September 12, through Wednesday, September 14, the exhibit hall will be open to anyone interested in EOS and ESD. Currently all exhibit space is sold out. All exhibits are open to the public.

### Networking

Networking is also a key reason for attending symposium. Attendees will have the opportunity to discuss the technical

*Continued on page 2*

**Symposium**

Continued from page 1

## 27th Annual EOS/ESD Symposium

papers with the authors at Authors' Corners and meet top professionals at the Welcome Reception, Awards Breakfast, Professional and Technical Women's Reception, and the ESD Association Annual Meeting and Luncheon. Also taking place during symposium week are several days of standards meetings, during which the various working groups meet to discuss and develop standards documents. A detailed symposium program is available on the ESDA website, [www.esda.org](http://www.esda.org).

### New Venue

Attendees will be able to attend symposium at the Anaheim Marriott, which features 31 meeting rooms and 54,000 sq. ft. of total meeting and banquet space. The

hotel lobby has been recently renovated to add elegance, drama, and character through details in architecture, decor, and even furniture.

The Anaheim Marriott is in the heart of an area full of business and recreation. Only two blocks from Disneyland Park, Disney's California Adventure, and Downtown Disney, you are also not far from natural beauty to be found at places such as the Bolsa Chica Ecological Reserve, the Arden canyon, and Crystal Cove State Park.

The ESD Association, in cooperation with the IEEE, sponsors the EOS/ESD Symposium. It is technically co-sponsored by the Electron Devices Society. The general chair is Charvaka Duvvury, Texas Instruments. The vice-general chair is Carl

Newberg, River's Edge Technical Service/Microstat Labs, and the technical program chair is Donn Bellmore, Universal Instruments Corp., ▲



*Charvaka Duvvury*  
General Chair

**Symposium**

## 2005 EOS/ESD Symposium Schedule Summary

Download a symposium program at [www.esda.org/symposia](http://www.esda.org/symposia) for complete schedule and course details.

### September 11-16, 2005 Marriott Anaheim, Anaheim, California

#### Sunday, September 11, 2005

Registration  
Standards Meetings  
ANSI/ESD S20.20 Seminar, Part 1  
ESD Tutorials

#### Monday, September 12, 2005

Registration  
ANSI/ESD S20.20 Seminar, Part 2  
ESD Tutorials  
Welcome Reception  
Exhibits (evening only)

#### Tuesday, September 13, 2005

Registration  
Awards Breakfast  
Exhibits (all day)  
Technical Sessions  
Attendee Luncheon  
Professional and Technical Women's Reception

#### Wednesday, September 14, 2005

Registration  
Technical Sessions  
Association Luncheon and Annual Meeting (for members and guests)  
Exhibits (AM only)  
Workshops

#### Thursday, September 15, 2005

Registration  
Technical Sessions  
ESD Tutorials

#### Friday, September 16, 2005

ESD Certified Professional-Program Manager certification exam

### Howell Packaging, Division of F.M. Howell & Company

P.O. Box 286, Elmira, NY 14902  
Tel: 607-734-6291 Fax: 607-734-8667  
Designers & Manufacturers of ESD Protective Packaging,  
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### DESCO Industries Inc.

3651 Walnut Avenue, Chino, CA 91710  
Tel: 909-627-8178 Fax: 909-627-7449 [www.descoindustries.com](http://www.descoindustries.com)  
ESD CONTROL PRODUCTS: Charleswater, CMG, Desco, EMIT, Menda,  
ESD Systems.com, Protoktive Pak, Semtronics, Statguard Flooring

From the president

## Welcome to Anaheim, CA



Ed Weggeland

On behalf of the ESD Association, it is my pleasure to welcome you to Anaheim for the 27th annual EOS/ESD Symposium! Our association is committed to offering you the very best in ESD education and training.

This year's conference promises to be both exciting and informative. Tutorials, workshops, certification programs, exhibits, and technical papers-they're all in one place at the Anaheim Marriott in beautiful Anaheim, CA. Attendees can take advantage of the many varied area attractions including the Disney theme park, only two

blocks from Disneyland Park, Disney's California Adventure, and Downtown Disney. Nature enthusiasts are not far from the natural beauty of the Bolsa Chica Ecological Reserve, the Arden canyon, and Crystal Cove State Park.

I am confident that this year's Symposium will be a rewarding experience for everyone. The demand for information and training about ESD and ESD control continues to grow. Join us as we open the Symposium with the Technology Roadmap into the future. The Roadmap includes a review of past trends with a comparison to the future. As devices become more sensitive it will be imperative that companies begin to determine the ESD capabilities of their handling

*Our association is committed to offering you the very best in ESD education and training.*

process.

The ESD Association has developed an education program that will provide the ESD program manager with the knowledge to develop an effective control program. The ten course program provides the attendee with the information required to successfully implement an ESD control program in the factory. The ESD program manager can take any one course, or all ten courses, to broaden their capabilities in ESD management. Upon completion of all courses, and the successful completion of an exam, the attendee can also achieve Program Manager Certification from the ESD Association. Program Manager Certification demonstrates a very strong knowledge in the area of ESD control.

On behalf of the ESD Association and the 2005 Steering Committee, I personally invite you all to join us at the 27th Symposium. An event you do not want to miss!

## Certification

## ESD Packaging Principles for the Program Manager

The ESD Association is offering a course on ESD Packaging Principles on Wednesday October 12 from 1:00 p.m. until 5:00 p.m. at the 3M Innovation Center in Austin, Texas. This course costs \$275 for members and \$375 for non-members. In addition, this course is required for ESD Certified Professional-Program Manager certification.

Shipping electronic parts within a factory, to another factory, distributor, or to an

end-user has always been an area of uncertainty within the manufacturing process. To provide clear-cut information on what type of controlled packaging should be used in any situation, the ESD Association has recently released a comprehensive revision of the obsolete industry standard EIA 541-1988. The new document, ANSI/ESD S541, is the focus of this session. It provides information and guidance, as well as material specifications, to as-

sist in the design and implementation of a packaging plan for use within an ANSI/ESD S20.20 based ESD control program. Current and newly released test method standards suitable for packaging material evaluation will be described. Course credit applies to the ESD Certified Professional-Program Manager certification curriculum.

### Conductive Containers, Inc.

4500 Quebec Ave. North, New Hope, MN 55428

Tel: 1-800-FARADAY Fax: 763-537-1738 [www.corstat.com](http://www.corstat.com)

Manufacturer of CORSTAT conductive corrugated products and ESD safe thermoformed plastic designs for shipping, storage & handling.

### 3M

Electronic Solutions Division

Tel: 1-800-328-1368 [www.3M.com/eisd](http://www.3M.com/eisd)

Manufacturer of static control permanent flooring, wrist/heel straps, static shielding bags, & testing/monitoring equipment

Symposium

## Call for Papers

### 28<sup>th</sup> Annual EOS/ESD Symposium

Tuscon, Arizona USA, September 10-14,  
2006

#### About the EOS/ESD Symposium

The ESD Association in cooperation with the IEEE is sponsoring the 28th Annual Symposium dealing with Electrical Overstress (EOS) and Electrostatic Discharge (ESD) effects. The Symposium will be devoted to the understanding of issues related to electrical transients and electrical overstress, and the application of this knowledge to the solution of problems in consumer, industrial and military applications, including electronic components and manufacturing, as well as in systems, subsystems and equipment.

#### Technical Papers

The Technical Program Committee solicits paper contributions, which include data and analysis, which advance the state-of-the-art knowledge, enhance or review the general knowledge, or discuss new topics related to EOS/ESD.

#### Abstracts

Authors must submit a 50-word abstract and 4 page (maximum) summary of their work. The summary must clearly state the purpose, results (e.g., data, diagrams, photographs, etc.), and conclusions of the work. Summaries must also include references to prior publications and state how the work enhances existing knowledge. Authors must designate the appropriate area related to their work and submission.

#### Electronic Submissions

Abstract and paper submissions shall be made electronically via e-mail to [info@esda.org](mailto:info@esda.org). The required file format is pdf (Adobe Acrobat®), one single pdf file for each submission. Paper presentations at the Symposium will be in electronic PowerPoint® format.

#### Paper Acceptance

The Technical Program Committee will accept unpublished papers for review with the understanding that the author will not publish the work prior to presentation at the Symposium. Accepted papers published in any form prior to presentation at the Symposium may result in the paper being withdrawn from the Symposium Proceedings. Authors must obtain appropriate company and government clearances prior to submitting their abstracts.

#### Paper Awards and Recognition

Awards are presented annually for the Best Presentation (selected by Symposium attendees) and the Best Paper (selected by the Technical Program Committee). The Best Paper is considered for presentation at the RCJ EOS/ESD Symposium in Japan. A Best Student Paper Award will also be presented. Eligible student contributions should be marked as such by the authors at the time of abstract submission.

#### Deadlines

The submission deadline is Friday, January 13, 2006. Late submissions will not be accepted. The final submission deadline for the finished papers will be Friday, June 9, 2006. Final papers will be limited to a maximum of 10 pages - guidelines will be provided after acceptance of the paper.

#### Contact addresses for questions or further information:

##### ESD Association Headquarters Operation Team

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##### Technical Program Chair

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Technically co-sponsored by the Electron Devices Society

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[www.vpiflooring.com](http://www.vpiflooring.com)  
Manufacturer of static control flooring

#### TREK, INC.

11601 Maple Ridge Road, Medina, NY 14103  
Tel: 585-798-3140 Fax: 585-798-3106  
Web: [www.trekinc.com](http://www.trekinc.com)  
Designer and manufacturer of instrumentation and sensors for measuring surface voltage, ionizer performance, and surface resistivity

## Local chapters

## Asia Forum Report

This past March the ESD Association offered education opportunities in Asia. Four cities in Asia hosted the program manager certification related courses: Manila, Philippines; Bangkok, Thailand; Penang, Malaysia; and Singapore. The two days of technical training were taught by Ron Gibson, Celestica International, Inc.; Stephen A. Halperin, Stephen Halperin & Associates, Ltd.; and John Kinnear, IBM. The courses included the following; ESD Basics and How To's of In-Plant ESD Auditing and Evaluation Measurements, ESD Basics, ESD Auditing and Evaluation Measurements, ESD Program Development and Assessment, Packaging Principles for the Program Manager, and ESD Standards Basics for EPA.

The demand for knowledgeable ESD program managers is growing. Qualified ESD personnel are needed to design, implement, and manage today's ANSI/ESD S20.20 control programs to protect sensitive devices and assemblies. Organizations and facilities with qualified ESD personnel on staff are better prepared for S20.20 facility certification.

These courses are designed to educate and train professional ESD program managers. The courses offered during this seminar series are required courses to obtain the ESD Association's ESD Certified Professional-Program Manager certification. Although other tutorials and seminars are also necessary to fulfill the certification requirements, these programs are critical to understanding ESD fundamentals, program development and certification, and the ongoing process of verifying performance of a program's technical ESD controls.

Also this March, the ASEMEP Electrostatic Discharge Council (AEC), the first chapter of the Electrostatic Discharge Association (ESDA) in Asia, held the Philippine Electrostatic Discharge Forum at the Bellevue Hotel, Alabang City, Philippines. This event was sponsored by the Semiconductors and Electronics Industries in the Philippines (SEIPI) and the Association of Semiconductor and Electronics Manufacturing Engineers of the Philippines (ASEMEP).

The main objective of the Philippine Electrostatic Discharge Forum was to promote awareness and understanding of ESD and showcase the trends and developments in ESD detection and control. International and local delegates involved in ESD control within and outside the semiconductor and electronics industries in Asia attended the forum.

Suppliers to the industry showcased test and audit equipment, ESD and cleanroom garments, ESD control equipment, ESD control accessories, ESD safe materials, publications, and training materials. So far this is the only event focused on the ESD market in the Philippines.

For more information about the forum, visit [www.esdphilippines.com](http://www.esdphilippines.com). To register for the ESDA tutorials download a registration form in PDF format at [www.esda.org/upcomingcourses.html](http://www.esda.org/upcomingcourses.html), visit [www.esdphilippines.com](http://www.esdphilippines.com), or call the association at 315-339-6937. ▲

## Association news

## Website updates

The website is currently being updated to help improve its usefulness. One topic that is continuing to cause confusion is the new registration pop-up window. We apologize for the inconvenience this window may have caused, though all problems are usually resolved quickly. The next time you are accessing the free downloads please note that you will be prompted to enter a username and password. All users, including members who have created a username and password in the members only section, must register in this area to access free downloads. Any questions or comments can be directed to [info@esda.org](mailto:info@esda.org).

**Local Chapters**

The local chapter section has undergone a few changes. To help people interested in local chapter activities and events, descriptions have been added to the website. In the local chapter section, click a chapter title to see a short description, contact information and web address. Participating in local chapters provides opportunities to discuss common problems with others who have similar experiences.

**Buyer's Guide**

The ESDA Buyer's Guide is a useful tool for anyone searching for ESD control products, solutions, training, and consulting. The Buyer's Guide can be searched by product, company name, or geographic location. The Buyer's Guide continues to grow and consists of over 50 companies whose information is conveniently available online to ESDA website users.

**New Press Catalog**

View or download the complete press

*Continued on page 6*

**ACL Staticide**

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ISO 9002 certified for advice, supply and manufacturing of static control materials and systems

Association news

## Website updates

Continued from page 5

catalog in PDF form at [www.esda.org/publications.html](http://www.esda.org/publications.html). The catalog lists all publications currently available for purchase with current pricing.

Be sure to check out August's Volunteer Spotlight. This month's featured volunteer is Michael Hopkins, who, in conjunction with Working Group WG14, has contributed to the issues of ESD Simulators and the problems seen in the industry of reproducibility of the ESD test. Hopkins is currently chair of WG14 and in late

### Threshold Institutional Listings

There is currently space for listers in our Threshold newsletter. Threshold Listings Space, which appears at the bottom of newsletter pages, can be purchased for \$600.00 for six consecutive issues. Larger contributions are welcome. No agency fee is granted for soliciting such contributions. Inquiries, or contributions made payable to the ESD Association, should be sent to:

ESD Association, 7900 Turin Rd., Building 3, Rome, NY 13440-2069 Tel: (315) 339-6937, Fax: (315) 339-6793, email: [info@esda.org](mailto:info@esda.org)

View Threshold at <http://www.esda.org/threshold.cfm>.



## New Volunteer Spotlight

1990 (and again in 2004) he produced a half day seminar for ESD service packs. In 2005, Hopkins produced and presented a half day tutorial for ESD and EMI at the system level.

Hopkins spent nine years in the US Navy as a Communications Technician and Naval Instructor. After leaving the military, he attended Franklin Institute in Boston and Northeastern University for Electronic Engineering. Hopkins went on to teach electronics at RETS, a two year technical school in Boston. After numerous positions in the communications industries, he began working for KeyTek.

Hopkins is currently the manager of the Customer Technical Center at Thermo Electron Corporation. Hopkins was involved in the development of a commercial ESD Simulator and has worked closely with industry and standards organizations to develop ESD test methods for finished products that would be repeatable and reproducible. By mid 1980, the need for automated test systems for ESD qualification of semiconductor devices became apparent, leading to his participation with standards development within the ESD association and other bodies, which continues to the present.

For recreation, Hopkins has varied interests, including cycling (10 to 15 miles a day), and all kinds of music. He currently holds a private pilot certificate and is working towards and instrument

rating. He is also active with amateur radio and is an avid reader with a preference toward science fiction.

Hopkins is happily married with eight stepchildren and seven grandchildren. He and his wife have fostered several

children ranging in age from infants to teenagers.

According to Hopkins, "Working within the ESDA has helped tremendously by providing a means of staying close to industry trends. The ability to stay in touch with industry leaders helps define what's

important for our customers, and allows us to more effectively address industry needs. And just as important, the tremendous amount of knowledge continuously brought to the table in open forums, symposia, standards meetings and simply hallway conversation is irreplaceable."

The ESDA relies on its volunteers. Be part of the ESDA mission and become a volunteer. If you would like to become more involved with the ESDA, send us an email at [info@esda.org](mailto:info@esda.org). Please include your contact information and someone will be in touch with you.



Michael Hopkins, Volunteer



### Monroe Electronics

100 Housel Avenue, Lyndonville, NY 14098  
Tel: 585-765-2254 Fax: 585-765-9330  
Email: [electrostatics@monroe-electronics.com](mailto:electrostatics@monroe-electronics.com)  
[www.monroe-electronics.com](http://www.monroe-electronics.com)  
Full line manufacturer of static measurement equipment

### Saint-Gobain Advanced Ceramics

1225 Aero Plaza Drive, Colorado Springs, CO 80916  
Tel: 719-637-8714 Fax: 719-380-5591  
[Stanley.C.Smith@saint-gobain.com](mailto:Stanley.C.Smith@saint-gobain.com)  
Manufacturer of Cerastat™ ESD ceramics products to customers' prints: tools, fixtures, wear parts for data storage and other electronic industries

## Association news

## Buyer's Guide

Reach thousands of potential buyers of ESD control products and services each and every month with the searchable ESD Association Website Buyer's Guide! Visitors to the ESDA web site can search by product, by company name, and by geographical location. Here's what you receive for your \$300 listing:

- A full 12 month's listing in the Buyer's Guide
- Your company listed under any of 42 different product and services categories
- A complete descriptive listing of your company: address, contact names, phone, fax, email address, website address, products and services you provide
- Email address clickable for direct contact
- A link to your company's website

For information on purchasing a listing in the Buyers Guide, visit our website at: [http://www.esda.org/members/buyers\\_guide.cfm](http://www.esda.org/members/buyers_guide.cfm), to download an order form in PDF format or contact the ESD Association.

## Symposium

## Tuscon, Arizona to host 2006 EOS/ESD Symposium



*Carl Newberg,  
2006 General Chair*

## Standards

## New Standards Available

The ESD Association has published two new standards that are now available for sale. The following standards are new in 2005:

**ANSI/ESD S6.1-2005 Grounding**

Specifies the parameters, materials, equipment and test procedures necessary to choose, establish, verify and maintain an Electrostatic Discharge Control grounding system for use within an ESD Protected Area for protection of ESD susceptible items, and specifies the criteria for establishing ESD Bonding.

**ESD DSP15.1-2005 In-Use Resistance Testing of Gloves and Finger Cots**

This draft standard practice provides test procedures for measuring the intrinsic electrical resistance of gloves and finger cots.

Serving as a focal point for ESD standards development, Association standards and specifications provide the guidance companies need to get their ESD control programs off and running. An ANSI recognized standards development organization, the Association has published more than thirty documents covering electrostatic discharge in the electronics environment. These include standards, standard test methods, standard practices, technical reports, and informational advisory documents.

For information on ordering and pricing, visit our website at: <http://www.esda.org/standards.html> or contact the ESD Association.

2006 will find the EOS/ESD Symposium in beautiful Tuscon, Arizona. The Westin LaPaloma will host the 28th annual EOS/ESD Symposium, September 10-15, 2006.

Exhibit space for the 2005 symposium is sold out, so be sure to book your exhibit space in advance.

Recognized as the international forum for furthering the understanding of electric overstress and electrostatic discharge, the annual EOS/ESD Symposium attracts attendees and participants from throughout the world.

Focusing on technology and solutions, the EOS/ESD Symposium covers a broad base of interests including

industrial, computer, communications, and military electronics; web processing; cleanrooms; semiconductors; MR heads; and electronic systems, components, and equipment.

The most targeted, concentrated audience of worldwide influential specialists in ESD and EOS will come to Tuscon, Arizona, for solutions. They come for tutorials, for technical papers, for workshops, for networking...and they come for the exhibits. So remember to book your exhibit space early!

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Tel: 925-673-0225 [www.esdrmv.com](http://www.esdrmv.com) Fax: 925-672-3316  
NARTE Certified ESD Engineer, AMERICAN Council of Independent Labs, ESD Product Development & Product Safety, Comprehensive ESD/Cleanroom Audits, Event Monitoring, On-Site Seminars

**Tek Stil Concepts, Inc.**

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s ESD dissipative and conductive vinyl sheet and tile,  
ESD carpet tile, ESD high traction safety floor tile

**Education**

## Online tutorials update

The ESD Association continues online course presentation with Ionization: Theory and Practice, presented by Arnold Steinman, Ion Systems Inc. Solve problems caused by static charge with air ionization with the aid of an hour long PowerPoint presentation provided online, utilizing voice over internet, on October 25 at 1:00 PM EST. The cost for members is \$95.00 and \$140.00 for non-members.

The primary method of static charge control is direct connection to ground for conductors, static dissipative materials, and personnel. But a complete static control program must also deal with isolated conductors, insulating materials, and moving personnel that cannot be grounded. Air ionization can neutralize the charge on insulated and isolated objects. This seminar will cover the following topics:

- Importance of Ionization in a Static Control Program
- Ionization Fundamentals and Methods
- Ionizer Selection Criteria and Examples
- ANSI ESD S20.20 Static Control Program Requirements for Ionization

The instructor for this course, Arnold Steinman is chief technology officer for Ion Systems Inc., Berkeley, CA, responsible since 1983 for the design concepts of the company's ionization static control products. He holds four patents covering air ionizer technology. Steinman graduated from the Polytechnic Institute of Brooklyn, receiving both BSEE and MSEE degrees. Steinman is a member of the Board of Directors of the ESD Association and a past chairperson of the Ionization Standards Committee. Steinman is also a senior member of the Institute of Environmental Sciences and Technology (IEST) and a member of the Electrostatics Society of America. For more information visit our web site at: <http://www.esda.org/upcomingcourses.html> ▲

**Symposium**

## Symposia Presentations on CD

Several EOS/ESD Symposium presentations, including presentation visuals and audio, are now available on CD-ROM. Presentations are available by session and are currently available for purchase at ESDA Headquarters..

### 2004 EOS/ESD Symposium

Session	Cost	
	Member	Non-member
<b>1A</b> MR Heads--Processing	\$65.00	\$95.00
<b>1B</b> RFIC and Novel Protection Devices	\$65.00	\$95.00
<b>3A</b> Tester--Device Effects	\$65.00	\$95.00
<b>4A</b> Factory and Materials	\$65.00	\$95.00
<b>5A</b> Novel TLP Testers	\$65.00	\$95.00
<b>5B</b> Magnetic Recording Heads	\$65.00	\$95.00

### PRE ORDER: 2005 EOS/ESD Symposium

Session	Cost	
	Member	Non-member
<b>1A</b> On-Chip RF	\$65.00	\$95.00
<b>1B</b> On-Chip Physics/Modeling Devices	\$65.00	\$95.00
<b>2A</b> On-Chip Latchup	\$65.00	\$95.00
<b>2B</b> Testing (TLP, ON-Chip, Standards)	\$65.00	\$95.00
<b>3A</b> Factory and Materials	\$65.00	\$95.00
<b>3B</b> System Level ESD/On-Chip CMOS I	\$65.00	\$95.00
<b>4A</b> MR Heads	\$65.00	\$95.00
<b>4B</b> On-Chip CMOS II	\$65.00	\$95.00

Session details available at ESDA headquarters. Contact association headquarters at 315-339-6937 or [info@esda.org](mailto:info@esda.org).

**ProLine**

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 Tel: 800-739-9067 Fax: 978-374-4885  
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 Manufactures ESD modular and ergonomic workstations

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 Supplying the ESD Community with the most Accurate and Reliable  
 CDM-TLP and HBM-TLP Test Equipment

Symposium

## Exhibitors at the 2005 EOS/ESD Symposium



Exhibit space is sold out for the 27th annual EOS/ESD Symposium!

### Current Exhibitors

3M  
ACL, Inc.  
Advanced Test Equipment  
Asiatic Fiber Corporation  
Barth Electronics, Inc.  
Bolidt Synthetic Products & Systems  
Botron Co., Inc.  
CCI-Conductive Containers, Inc.  
Century Container  
Chronicle Technology, Inc.  
Compass Concepts, Inc.  
Credence Technologies, Inc.  
Desco Industries, Ltd.  
Dou Yee Enterprises, Ltd.  
Eonyx Corporation

ESD Association, Inc.  
ESD Consulting Group, Inc.  
ESD-TLP Consulting & Testing  
Electro-Tech Systems, Inc.  
Electronic Polymers, Inc.  
Exdron  
FLEXCO  
Forbo Flooring  
Gibo/Kodama Chairs  
Global Technology Leader, Inc.  
HANWA Electronic Ind. Co., Ltd.  
H.C. Stark, Inc.  
Hyperion Catalysis  
Hyttest Safety Footwear  
ION Systems Inc.  
ITW/Richmond Technology  
Kreha Corporation of America  
Lehigh Safety Shoes  
LG Floors  
MEFAS Inc.  
Michelin Footwear  
Monroe Electronics, Inc.  
Noveon Static Control  
Novx Corporation  
Oryx Instruments  
PRF Industrial LLC  
Prostat Corporation  
R&R Lotion, Inc.  
RTP Company

Sauquoit Ind., LLC  
Static Control Components (SCC)  
Shenzhen Zizone Industrial Co., Ltd.  
SIMCO an ITW Co.  
Static Solutions, Inc.  
STATICO  
Stephen Halperin & Assoc.  
TDI International, Inc.  
Tech Wear, Inc.  
Thermo Electron Corp.  
Trek, Inc.  
Ultra Tec Mfg. Inc.  
Uniglobe Kisco, Inc.  
Vidaro Corporation

### Publications

Advanced Packaging  
Circuits Assembly  
CleanRooms  
Connector Specifier  
Controlled Environments Magazine (formerly A2C2)  
Evaluation Engineering  
Medical Electronics Manufacturing  
Printed Circuit Design & Manufacture  
Solid State Technology  
Surface Mount Technology  
Test & Measurement World

### Sponsor

ESD Association

### Association News

## New vice president appointed



Dale Parkin

Dale Parkin has been appointed Vice President for 2005, effective July 8. Parkin is with IBM Corporation and is a Standards Working Group Chair, a member of the Standards Committee and the Human Resources Team, and is involved with the EOS/ESD Symposium Steering Commit-

tee and A/V Chairman.

The previous ESD Association Vice President, Joe Bernier has taken a new position. As a result, he stepped down as Vice President of the association. We thank him for his service and wish him the best for the future. ▲

### TOPLINE-ELME

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## Standards

### September Meeting Schedule

#### **ESD Association Standards and Association Committee Meetings September 8-11 2005** **Mariott Anaheim** **Anaheim, CA**

Thursday, September 8

TAS 8:00-5:00

Friday, September 9

TAS 8:00-5:00

WG-3, Ionization 8:00-Noon

WG-5, Device Testing 8:00-5:00

WG-10, Handlers 1:00-5:00

Saturday, September 10

TAS 7:00-5:00

WG-5, Device Testing 8:00-5:00

WG-53, Workstations 8:00-Noon

WG-55, Cleanrooms 8:00-Noon

WG-4, WG-6, WG-9, WG-97.1,

WG-97-2, Grounding 8:00-Noon

WG-11 Packaging, 1:00-3:00

WG-2 Garments 2:00-4:00

WG Chair meeting 5:30-6:30

ESDA Mixer - all invited 6:30-7:30

Sunday, September 11

WG-14, ESD Simulators 8:00-Noon

WG-7, Flooring 8:00-Noon

WG-15, Gloves 8:00-Noon

DAR/STDCOM 1:00-3:00

Board of Directors 5:30-7:00

Local Chapters 8:00-10:00

## Symposium

*Continued from page 4*

### Call for Papers

**Papers are solicited in the following areas:**

#### **I. Component Level EOS/ESD**

- On-Chip Protection Devices & Techniques
- IC Design and Layout Issues
- ESD & Latchup, or other Reliability Aspects
- ESD in Advanced Technologies (SiGe, SOI, Compound Semiconductors, etc.)
- EOS/ESD Failure Analysis
- Transmission Line Pulse Testing
- Processing Issues and Effects
- New ESD Phenomena in MEMS (Microelectromechanical Systems)
- ESD Device and Circuit Simulation
- Modeling and Physics of EOS/ESD
- RF Devices and Circuits
- High Voltage, High Power Technologies (BiCMOS, HV-CMOS)

#### **II. System Level EOS/ESD**

- Simulators, Calibration and Correlation
- Case Studies, Reviews and Analysis
- Optical Networks ESD
- Test Methods and Procedures
- ESD Detection and Measurement Techniques
- Modeling and Simulation

#### **III. EOS/ESD Factory Level and Materials Technology**

- Packaging and Handling
- Case Studies, Reviews and Analysis
- Test Methods and Procedures
- Transient ESD/EMI Induced Upset
- Air Ionization and Uses
- Troubleshooting Techniques
- Facility Design

*Continued on page 11*

## Symposium

### The local scene in Anaheim, California

2005 finds the EOS/ESD Symposium in sunny California. The Anaheim Marriott Hotel will host the 27th annual EOS/ESD Symposium.

The Anaheim Marriott is in the heart of an area full of business and recreation. Only two blocks from Disneyland Park, Disney's California Adventure, and Downtown Disney, you are also not far from natural beauty to be found at places such as the Bolsa Chica Ecological Reserve, the Arden canyon, and Crystal Cove State Park.

The Anaheim Museum, "A Walk Through

Local History," has exhibits of local culture and art. Anaheim also offers the Arrowhead Pond a highlighted spot for entertainment and sports. The Arrowhead is a 650,000 square foot arena is the home of the NHL Mighty Ducks of Anaheim and annually hosts the Ringling Bros. and Barnum & Bailey Circus, Disney on Ice, and the Harlem Globetrotters.

Anaheim is also the home of the Anaheim Angels, who have played at Angel Stadium of Anaheim since their move from Los Angeles after the 1965 season. ▲

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## Association news

### And the survey says...

Each month *Threshold*<sup>TM</sup> provides a column to address the many questions and comments expressed by association members in their responses to an email survey conducted by the ESD Association's Human Resources Business Unit.

The Survey Says column will not appear in this issue, but will return in the October/November issue. Be sure to check back for more association responses to member questions. ▲

### New Staff at Headquarters

ESDA Headquarters has hired two new employees. Lynn Babiarz, Marketing Administrator and Jessica Berry, Standards Administrator.

Lynn Babiarz has joined the ESDA headquarters staff as a marketing administrator. As well as assuming the role of Editor for *Threshold*, she also has responsibility for the ESDA web site, marketing and communications projects, the Web Buyer's Guide, and serves as the press contact for the association.

Jessica Berry has joined the staff as a standards administrator. Jessica's primary focus will be the Standards Business Unit. Some of her duties include maintaining the Committee Rosters, and the minutes of working groups (and other committees). Jessica is also responsible for maintaining standards files and manuals to ANSI audit level requirements. She will also produce and format all standards documents. Jessica and Lynn may be contacted at the ESD Association, 7900 Turin Road, Building 3, Rome, NY 13440; phone: 315-339-6937, fax: 315-339-6793, email: info@esda.org.

We wish both Jessica and Lynn the best for the future within our Association. ▲

## Symposium

Continued from page 10

### Call for Papers

- Management Issues (cost/benefit analyses, etc.)
- ESD Control Materials
- ESD Shunting Packaging Technology
- Use of Antistatic Materials
- Chemistry

#### IV. Electrostatic Considerations

- Biomedical & Chemical Industry Electrostatic Control
- Graphic Arts Electrostatic Control
- ESD Control in Explosives and Pyrotechnics
- Oil/Petroleum Industry Electrostatic Control
- Aircraft, Spacecraft and Avionics ESD
- Other ESD Topics

#### V. Magnetic Recording Heads and Ultra Sensitive Devices

- Testing and Analysis
- Protection Techniques

- Special Considerations for Extremely Sensitive Devices
- Failure Analysis Techniques and Interpretations

#### VI. ESD Standards - Components, System, Factory & Materials

- Test Methods and Procedures
- Round-Robin Testing, Results and Analysis
- Standards - Comparisons and Analysis
- Case Studies

Accepted papers covering selected topics may be considered for review for possible publication in a special issue of either the IEEE Transactions on Components, Packaging and Manufacturing Technology, the Journal of Electrostatics, the Micro-Electronics Reliability Journal, or other appropriate publications.

#### Electrostatic Society of America

www.electrostatics.org

The Electrostatic Society of America (ESA) is devoted to the advancement of electrostatics, encompassing a wide breadth of areas including MEMS, biological and industrial applications

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## Calendar

### September 2005

September 19, 2005  
**ESD North Central Chapter**  
Chapter Meeting  
Celestica, Arden Hills  
4300 West Round Lake Rd.  
www.esdnorthcentral.org

September 19-22, 2005  
**IDEMA's DISCKON -USA, 2005**  
Westin Hotel  
Santa Clara, CA  
www.idema.org.org

### October 2005

October 12, 2005  
**ESD Packaging Principles for the Program Manager**  
3M Innovation Center, 6801 River Place  
Boulevard, Austin, Texas  
www.esda.org/upcomingcourses.html

October 25, 2005  
**ESD Online Program: Air Ionization: Theory and Practice**  
Web seminar  
www.esda.org

### November 2005

November 6-10, 2005  
**ISTFA 2005**  
McEnery Convention Center  
San Jose, CA.  
www.istfa.org

## Threshold

*Threshold*<sup>TM</sup> is published six times a year by the ESD Association, a not-for-profit corporation. It strives for the advancement of theory and practice of electrical overstress avoidance and of allied arts and sciences and the maintenance of a high professional standing among its members and others.

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Issue	Deadlines
September/October	Aug. 1
November/December	Oct. 1
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March/April	Feb. 1
May/June	April 1
July/August	June 1

### Threshold Institutional Listings

Space in the Threshold Institutional Listings, which appear at the bottom of newsletter pages, can be purchased for \$600.00 for six consecutive issues. Larger contributions are welcome. No agency fee is granted for soliciting such contributions. Inquiries, or contributions made payable to the ESD Association, should be sent to

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