May 2012 IEEE Reliability Society Newsletter

Joint-Section Chapter - Boston - New Hampshire - Providence

February – May 2012

http://www.ieee.org/bostonrel

Greetings IEEE Reliability Enthusiasts,

We have enjoyed a busy and educational 2012 so far with four excellent presentations related to Reliability Engineering. In February Andrew Kopanski spoke about ESD (Electrostatic Discharge) Class 0 protocols which are critical for successfully handling today's most sensitive electronics. In March, Dr. Vladimir Liberman of MIT Lincoln Laboratory spoke about the reliability of materials used with ultraviolet sources for applications such as micromachining, forensics, astronomy, photolithography, refractive eye surgery, and sterilization. In April, Dr. David Heimann spoke about the forthcoming IEEE 730 Software Quality Assurance Standard, including ties to other IEEE Software engineering standards. In May, David Icke spoke about conformal electronics applied directly to the skin or object under study, and enabling new applications by allowing next generation electronics to overcome space and geometry challenges.

We hope you have been able to take advantage of the lectures and networking opportunities offered by our local chapter, and that we see you at the next chapter event, which is tentatively scheduled for September 12, 2012. Please watch your inbox, the IEEE Reflector, or our chapter website at http://ewh.ieee.org/r1/boston/rl/events.html, for announcements as that date approaches.

Best wishes for a great summer,
Dan Weidman
Boston Joint-Section Chapter Chair

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February 8, 2012	• "ESD Class 0 Protocols," Andrew Kopanski, MIT Lincoln Laboratory, a joint meeting with NE-ESDA and Boston SMTA, at Teradyne, North Reading, MA.
March 14, 2012	• "Reliability of Materials under UV Exposure," Dr. Vladimir Liberman, MIT Lincoln Laboratory, at MIT Lincoln Laboratory, Lexington, MA.
April 11, 2012	• "A Guide to the Forthcoming Revision of the IEEE 730 Software Quality Assurance Standard," David Heimann, at MIT Lincoln Laboratory, Lexington, MA.
May 2, 2012	• "High Performance Conformal Electronics: Technology and Applications," David Icke, mc10, at MIT Lincoln Laboratory, Lexington, MA.
In Memoriam	• Prior IEEE Providence Section leader Alan Storms passed in 2011.

Upcoming Events

September 12, 2012	• Title: TBD, by Gary Smith, Ph.D., MIT Lincoln Laboratory, at MIT Lincoln Laboratory, Lexington, MA.
October, 2012	• "Counterfeit Semiconductor Products: The #1 Threat to Electronics Reliability" by Andrew Olney, Director of Reliability and Product Analysis, Analog Devices, Inc., Location-TBD
November, 2012	• TBD
Society Participation	• http://www.ieee.org/bostonrel • Suggest a Meeting Topic • Join Technology Development • Join our E-Mail Distribution List • Join IEEE, Join an IEEE Society, IEEE Reliability Society Membership

Recent Activities

February 8, 2012:

On Wednesday, February 8th, Andrew Kopanski, ESD and Quality Engineer, MIT Lincoln Labs, presented "ESD Class 0 Protocols" at Teradyne, Inc., North Reading, MA, in a joint meeting with NE-ESDA and Boston SMTA to 56 members and guests.

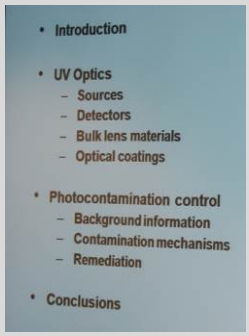
Andrew reviewed the Electrostatic Discharge (ESD) Class 0 program at MIT Lincoln Laboratory and showcased measurements taken to protect these devices. These devices were sensitive down to 50V, and processes were developed for all operations including upscreening, assembly, and final test. At the Class 0 level, using a proven process was just as important as leveraging the correct tools and materials as discussed during this talk.

Andrew Kopanski held the attention of the 56 attendees with his detailed case study requiring Class 0 ESD protection.

March 14, 2012:

On Wednesday, March 14th, Dr. Vladimir Liberman, Staff Scientist, MIT Lincoln Laboratory, presented "Reliability of Materials under UV Exposure," at MIT Lincoln Laboratory, Lexington MA to 59 members and guests.

Dr. Liberman discussed challenges of establishing the right infrastructure for UV-based optical systems, including sources, optics, and supporting construction materials, such as epoxies, for meeting requirements of their respective applications. He reviewed UV-based outgassing studies for selecting the most appropriate construction materials to minimize system contamination.



Dr. Vladimir Liberman, shown seated at the right above started with the basics of UV Optics requirements and discussed the reliability issues related to photocontamination control.

Chair Dan Weidman at the right informed attendees of upcoming events, the evening's agenda, and introduced the speaker.

April 11, 2012:

On Wednesday, April 11th, David I. Heimann presented "A Guide to the Forthcoming Revision of the IEEE 730 Software Quality Assurance Standard," at MIT Lincoln Laboratory, Lexington MA to 24 members and guests.

Dr. Heimann provided a brief overview of changes to IEEE-730-2002 standard on Software Quality Assurance (SQA) where the newest version will coordinate with the four process areas and sixteen SQA tasks in the IEEE-12207-2008 standard "Systems and Software Engineering: Software Life Cycle Processes," providing detailed elaborations for these areas and tasks. Discussion included the difference between SQA and testing and covered the annexes in IEEE 730 that provide industry-specific information as well as the relationships with software process approaches such as CMMI, Agile, SPICE, CSQE, PMBOK, and VSEs.

David Heimann left presented pending changes among IEEE standards for SQA and Software Life Cycle Processes at the April 11th meeting to 24 members and guests.

May 02, 2012:

On Wednesday April 2nd, David Icke presented "High Performance Conformal Electronics: Technology and Applications," at MIT Lincoln Laboratory, Lexington MA to 47 members and guests.

Conformal electronics technology may enable new applications by allowing next generation electronics to overcome space and geometry barriers. New platforms overcome the limitations of traditional and rigid forms by enabling electronics to stretch and conform to different form factors and substrate materials. This presentation discussed applications of conformal electronics and reliability assurance practices of the design and production process deployed by mc10.

Dave Icke's conformal electronics presentation included a sample of the one centimeter circuit shown in his slide at the left which is adhered to the skin of a test subject. The Conformal Electronics session was well attended by 47 members and guests.

Presentations:

Select presentations from prior meetings are available on the IEEE Reliability Society Joint Boston – New Hampshire – Providence Chapter website at http://ewh.ieee.org/r1/boston/rl/presentations.html.

In Memoriam

Alan D. Storms

The IEEE Boston Reliability Chapter regrets the passing on November 8, 2011 of Alan Storms, 75 of Bristol, RI, a former IEEE Providence Section leader for many years.

Mr. Storms worked as an engineer with Martin Aircraft, Moog Servocontrols, and Westinghouse Electric, and headed his own consulting firm, Storms Advisory Services. Mr. Storms' many professional memberships included the National Fire Protection Association and the Institute of Electrical and Electronic Engineers where he served on the Switchgear Committee for many years. A donation was made on behalf of the Joint-Section Reliability Chapter - Boston - New Hampshire - Providence in his memory to the Capital Campaign Fund at St. Michael's Church, P.O. Box 414, Bristol, RI 02809. (Information extracted in part from The Providence Journal on November 10, 2011.)

Upcoming Meetings and Events

No events are planned for June, July, or August, 2012 for the IEEE Reliability Society Joint Boston – New Hampshire – Providence Chapter.

The Advisory Committee is in negotiations with potential speakers for the following dates:

September 12, 2012

Title: To Be Announced, by Gary Smith, Ph.D., MIT Lincoln Laboratory, at MIT Lincoln Laboratory, Lexington, MA.

October 10, 2012

"Counterfeit Semiconductor Products: The #1 Threat to Electronics Reliability," by Andrew Olney, Director of Reliability and Product Analysis, Analog Devices, Inc., a joint meeting with NE-ESDA and Boston SMTA, Location-TBD.

November 14, 2012 TBD

Please watch your inbox, the IEEE Reflector, or our chapter website for announcements as these dates approach.

Society Participation

Please check our website periodically for updates on upcoming events!
http://ewh.ieee.org/r1/boston/rl/events.html.

- If you would like to present a reliability based topic at a future meeting, have meeting topic suggestions, or ideas about how to improve our meetings, we want to hear from you! Please send an e-mail to any of the AdCom members, or go to our website and click on Suggest a Meeting Topic.

- To participate or provide input to chapter technology development activities, sign up to become a TDC (Technology Development Committee) participant using our website by clicking on Technology Development.

- You can also be added to the chapter e-notice distribution via our website by clicking on Subcribe to E-Notices, or send a request to dermarderosiana@ieee.org (Vice-Chair, notices, and registration).

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http://ewh.ieee.org/r1/boston/rl/newsletters/boston_chapter_newsletter_may12.pdf