

## **Symposium Offers Forum For Learning About Methodologies, Regulations & Services For Product Compliance Engineering**

by Kevin Parmenter, Contributor, How2Power Today

I had the pleasure of attending the IEEE Symposium on Product Compliance Engineering held in Portland, Oregon, November 5-7. This conference follows the trend in North America of presenting a small, highly specialized event, rather than a larger, more generalized one. At the symposium, there were approximately 250 attendees representing the top names in corporations such as HP, Microsoft, Dell, Nemco TUV, UL, CSA and a plethora of testing labs and forensic analysis organizations (Fig. 1.)

In the exhibits section (28 exhibitors in all) there were very compelling displays and demonstrations ranging from companies that apply metalized copper and aluminum coatings to the inside of plastic housings (for mitigating EMI-RFI emissions) to suppliers of test and measurement instrumentation such as hipot testers. Some of these companies were the test instrument manufacturers, while others were firms offering test equipment rentals (see Fig. 2.) Many were providers of testing and compliance services—the aforementioned test labs and analysis organizations.

The theme of the conference was perfectly aligned with the objectives of the IEEE Product Safety Engineering Society—one of the symposium's key sponsors. The stated focus of this society is: "the theory, design, development and practical implementation of product safety engineering methodologies and techniques for equipment and devices. This includes the study and application of analysis, techniques, and construction topologies, testing methodologies, conformity assessments and hazard evaluations." The symposium topics, presentations and exhibitor displays were aligned very well with this focus statement.



*Fig. 1. While small in size, this IEEE symposium brings together representatives of top corporations, testing labs, forensic analysis organizations, and suppliers of materials and test equipment to discuss the compliance-related developments, regulations, testing methods and topical issues in these areas.*



*Fig. 2. Among the 28 exhibits at the IEEE Symposium on Product Compliance Engineering were suppliers of test instruments such as Advanced Test Equipment Rentals and ED&D.\**

For power electronics engineers this is an event which should not be missed by those involved in the practice of the art. Consider that the design of power supplies and power systems requires attention to many issues addressed at this conference. Topics such as safety, EMI-RFI, creepage, clearances, isolation barriers, leakage currents, high voltages and (sometimes) high currents are front and center in power electronics work. Thus, it is incumbent on designers in power electronics to fully understand the compliance-related developments, regulations, testing methods and topical issues in these areas. In that regard, this conference hit the mark as it allowed the attendees an opportunity to discuss and disseminate technical information, to enhance professional skills, and to provide outreach to engineers, students and others with an interest in the product compliance field.

The conference also included something unusual for an electronics industry event—a test session for iNARTE certification. iNARTE is a non-profit association that certifies qualified practitioners in product safety engineering, providing credentials for engineers and technicians in a variety of EMI-RFI or other certifications (Fig.3.) These exams are given each year at the symposium to interested attendees who apply ahead of time. More information is available at <http://www.narte.org> and <http://www.psessymposium.org/sites/psessymposium.org/files/inarte.pdf>



*Fig. 3. iNARTE is a non-profit association that certifies qualified practitioners in product safety engineering.\**

Kicking off and setting the tone for this multi-day event was the keynote speech by Don Mays, director of Product Safety at Deloitte & Touche LLP. In his keynote, “The Safety Challenge” Mays’ theme was the importance of understanding risk. “Every day we take risks; some are calculated while others are totally unknown. Understanding risk is the first step in developing any strategic safety program. But the lack of understanding can lead to product-related injuries or deaths, product recalls, and financial and reputational damage to your company,” says Mays.

Mays provided a wonderful risk analysis and safety overview with several key examples. Then, he went on to explain intelligent ways for mitigating risk. He also gave the audience a safety challenge—a commonplace safety problem that sorely needs a creative solution. (For a copy of Mays’ talk and further details on his challenge to the community, contact the speaker at 203-708-4241 or email [dmays@deloitte.com](mailto:dmays@deloitte.com).)

In addition to the keynote, the symposium included numerous paper presentations. In the table below, I have listed the titles of the papers along with the authors’ names and affiliations to give you a further sense of the subjects and themes addressed at the conference. For more on the papers, contact the authors or the conference directly.

If you missed this year’s conference you can catch it later this year, Oct. 7-9 in Austin, Texas. More information on the 2013 symposium is now available at their [website](#). Keep this event in mind as an opportunity to enhance your career development through the training, certification, and networking opportunities that this symposium will provide.

*\*Note: ED&D and iNARTE booth photos are courtesy of Richard Georgerian.*

Table. Technical papers presented at the 2012 IEEE Symposium on Product Compliance Engineering.

<b>Title of Paper</b>	<b>Author(s)</b>
Strategies for Tracking Regulatory Requirement Changes	Ted Eckert (Microsoft Corporation, USA)
System Safety and ISO 26262 Compliance for Automotive Lithium-Ion Batteries	William Taylor (kVertex Associates (kVA) LLC, USA), Gokul Krithivasan (kVertex Associates (kVA) LLC, USA), Jody J Nelson (kVertex Associates (kVA) LLC, USA)
Cutaneous burn at an elevated ambient air temperature	Flore Chiang (Underwriters Laboratories Taiwan Co., Ltd., Taiwan)
New Editions of ANSI Standards for Warnings	Steven Hall (Applied Safety & Ergonomics, Inc., USA), Judith Isaacson (Applied Safety & Ergonomics, Inc., USA), Charles Burhans (Applied Safety & Ergonomics, Inc., USA), J. Paul Frantz (Applied Safety & Ergonomics, Inc., USA), Timothy Rhoades (Applied Safety & Ergonomics, Inc., USA), Raina Shah (Applied Safety & Ergonomics, Inc., USA), Stephen Young (Applied Safety & Ergonomics, Inc., USA)
Radio Approval in Taiwan	Grace Lin (Crestron Electronics, Inc., USA), Alpha Liu (Intertek Testing Services Taiwan, Taiwan), Cliff Wang (CCS RF, Taiwan)
Large Scale Energy Storage Systems	Devarajan Maheswaran (LARSEN & TOUBRO LIMITED, India)
A Study on a management system for pursuing product safety of consumer electronics products using Hazard based assessment	Yasuo Harada (Panasonic, Japan)
DC High-Energy Arcing Ignition (HAI) Resistance for Polymeric Materials. Part I: Consistency and Repeatability of DC-HAI System	Hai Jiang (Underwriters Laboratories (UL), USA), Paul Brazis (Underwriters Laboratories (UL), USA), Noe Navarro (Underwriters Laboratories (UL), USA)
Fuse Selection Criteria for Safety Applications.	Ray Huang (Exponent, USA), Stig Nilsson (Exponent, USA)
Safety Considerations of Wireless Charger For Electric Vehicles	Hai Jiang (Underwriters Laboratories (UL), USA), Paul Brazis (Underwriters Laboratories (UL), USA), Mahmood Tabaddor (Underwriters Laboratories (UL), USA), Joseph Bablo (Underwriters Laboratories (UL), USA)
Introduction to Lightning and AC Power Fault Surge Protection for Telecom Signaling Cables	Joseph Randolph (Randolph Telecom, Inc., USA)
The Use of TDR and FDR Techniques to Characterize a GTEM Chamber for EMI/EMS/EMC Pre-Compliance Test	Humberto Xavier de Araujo (University of Campinas, Brazil), Luis Kretly (University of Campinas, Brazil)
Grounding Architecture Design for Wireless Base Stations - EMC and PS Considerations	Dheena Moongilan (Alcatel-Lucent, USA)
Electric Shock Hazards - Risk Assessment and Safety Management	Thomas Lanzisero (UL LLC, USA)
The Beelzebub Zone	Louis Bilancia (Synnovation Engineering, Inc., USA)

## About The Author



*Kevin Parmenter has over 20 years of experience in the electronics and semiconductor industry. Kevin is currently vice president of applications engineering in the USA for Excelsys Technologies. Previously, Kevin has served as director of Advanced Technical Marketing for Digital Power Products at Exar, and led global product applications engineering and new product definition for Freescale Semiconductors AMPD - Analog, Mixed Signal and Power Division based in Tempe, AZ.*

*Prior to that, he worked for Fairchild Semiconductor in the Americas as senior director of field applications engineering and held various technical and management positions with increasing responsibility at ON Semiconductor and in the Motorola Semiconductor Products Sector. Kevin also led an applications engineering team for the start-up Primarion where he worked on high-speed electro-optical communications and digital power supply semiconductors.*

*Kevin serves on the board of directors of the [PSMA](#) (Power Sources Manufacturers Association) and was the general chair of APEC 2009 ([the IEEE Applied Power Electronics Conference](#).) Kevin has also had design engineering experience in the medical electronics and military electronics fields. He holds a BSEE and BS in Business Administration, is a member of the IEEE, and holds an Amateur Extra class FCC license (call sign KG5Q) as well as an FCC Commercial Radiotelephone License.*