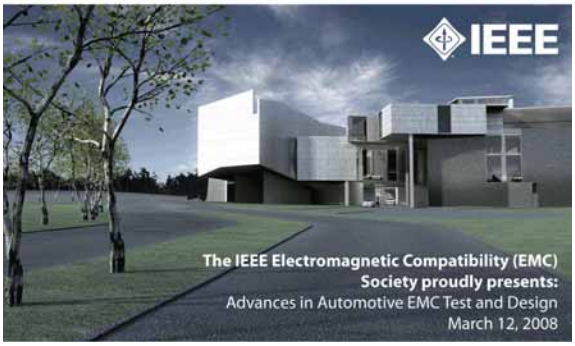
CUICAR
CLEMSON UNIVERSITY INTERNATIONAL CENTER FOR AUTOMOTIVE RESEARCH



Regional EMC Society Event Held at Clemson University: Advances in Automotive EMC Test and Design

By Janet O'Neil, EMC Society Regional Conference Coordinator, IEEE Regions 1-7

On March 12, 2008, the EMC Society organized a special, one-day colloquium and exhibition at the Clemson University International Center for Automotive Research (CU-ICAR), Carroll A. Campbell Jr. Graduate Engineering Center in Greenville, South Carolina. Titled "Advances in Automotive EMC Test and Design", the technical program featured an international group of automotive EMC experts. Invited speakers included Mark Steffka, University of Michigan-Dearborn, who provided an "Automotive EMC Introduction and Overview", Dr. Vince Rodriguez of ETS-Lindgren who presented "EMC Testing to CISPR 12 and ISO 11452", Scott Mee of Johnson Controls (France) on "Bench-Top Pre-Compliance Testing", Dr. Todd Hubing of the Clemson University ICAR who presented "Automotive Circuit Board and System Design for EMC", Dr. Daryl Beetner of the Missouri Institute of Science and Technology, who spoke on "Expert System EMC Analysis of Automobile Electronics", and Dr. Julian Weber of BMW (Germany) who gave the concluding presentation on "Design Collaboration Between OEMs and Electronics Suppliers." The day started with a continental breakfast buffet in the exhibition area and featured several great presentations as noted above as well as lunch, refreshment breaks, and a facility tour of the numerous automotive test chambers at the new CU-ICAR. The full day concluded with a reception with the speakers in the exhibition area and drawings for door prizes.

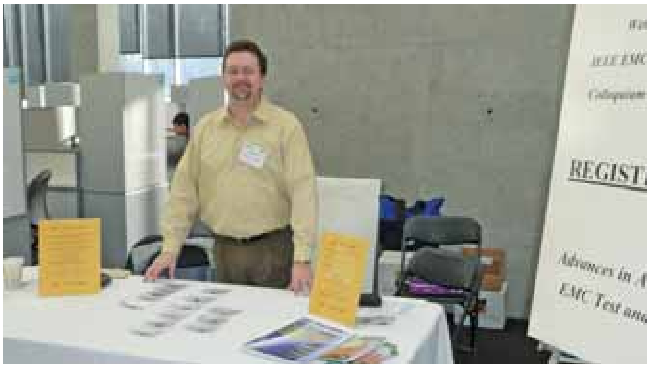
"Integrating dozens of electronic systems in the confined space of an automobile along with a growing number of RF transmitters and receivers for communications, navigation and entertainment presents a considerable electromagnetic compatibility challenge," noted Todd Hubing, Michelin Professor of Vehicular Electronics at Clemson University and colloquium chair. Pointing out the increasing importance of automotive research, he added, "Though some people fondly remember the days when automobiles had relatively few electronic components and a disabled vehicle could often be fixed with nothing more than a wrench; the fact is that today's cars and trucks are safer, more fuel efficient, and significantly more reliable than their purely mechanical ancestors. Electronic systems enhance the performance of the engine, transmission, steering and brakes, while helping to keep the driver alert and informed. Today, vehicles rely on dozens of microprocessors and miles of wiring to meet stringent government standards for safety and fuel economy, while also satisfying various consumer requirements for comfort, convenience and style."

The evolution of the increasingly electronic automobile prompted the development of the CU-ICAR. Chairing the colloquium to educate engineers about advances in automotive EMC test and design was a natural outcome given Professor Hubing's background as a past President of and Distinguished Lecturer for the IEEE EMC Society. Also on the planning committee for the colloquium and exhibition were Janet O'Neil of ETS-Lindgren, the Society's Regional Conference Coordinator for IEEE Regions 1-7, and Don Brown of Brennan Associates.

The tabletop exhibition featured several exhibitors of EMC related products and services, including 3M, Agilent Technologies, AR RF/Microwave Instrumentation, Elite Electronic Engineering Inc., ETS-Lindgren, Fair-Rite Products Corp., EM Software and Systems, Haefely EMC, HV TECHNOLOGIES, IBM, Laird Technologies, LeCroy Corporation, RFTEK, Rohde & Schwarz, Tektronix, TUV SUD America, and Underwriters Laboratories Automotive EMC.

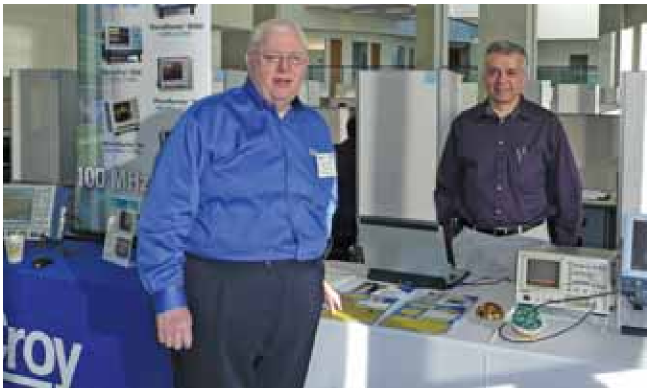
At the end of the event, many of the 70 or so attendees were tired, but more informed about automotive EMC. They were especially tempted to learn more by attending the 2008 IEEE International Symposium on EMC in Detroit this August. In fact, was it a coincidence that the lead speaker at the colloquium was none other than Mark Steffka, the Technical Program Co-Chair for EMC 2008?

PHOTOS BY JANET O'NEIL

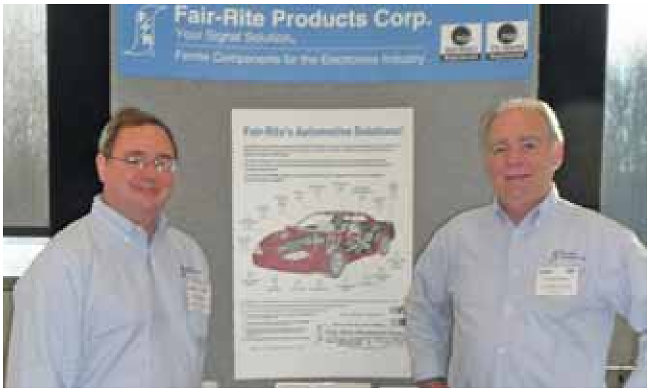


Colloquium Registration Chair Don Brown of Brennan Associates prepares to welcome attendees to the Clemson regional Colloquium and Exhibition.

Professor Todd Hubing of Clemson University warms up the audience at the "Advances in Automotive Test and Design" Colloquium. The presentations were given in one of the classrooms at the Clemson University International Center for Automotive Research (CI-ICAR).

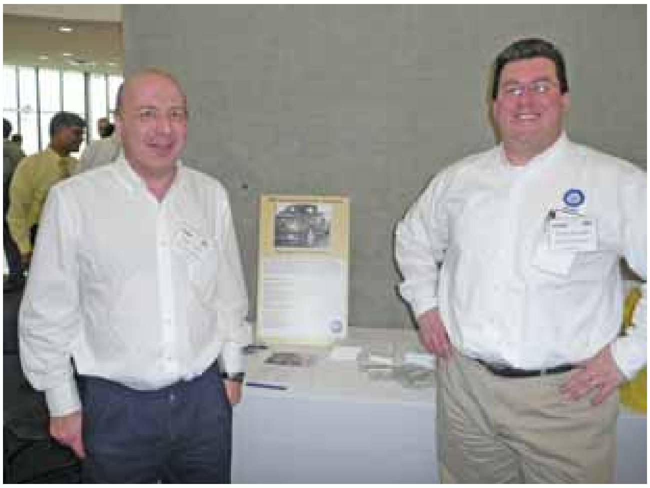


Exhibitors at the Clemson event included Robert Crowe, Jr. (left) of LeCroy Corporation and David Guzman of RFTEK.

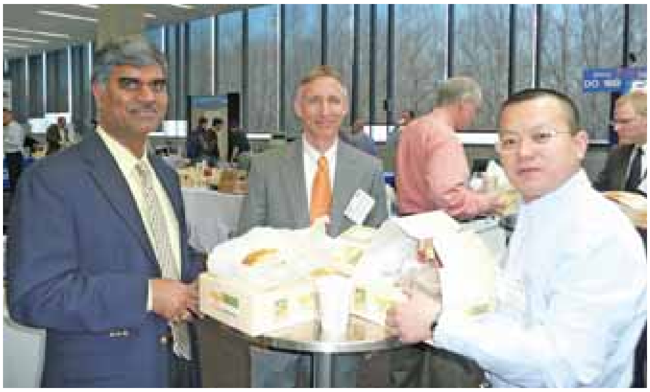


Trip Kreger (left) of A.B. Kreger Company joined exhibitor Frank Babic of Fair-Rite Products Corp. at his tabletop display.

Scott Proffitt (far right) of Advanced Compliance Solutions assisted with publicity for the Clemson event as chair of the nearby Atlanta EMC Chapter. He enjoyed a lunch break with (from left) Lee Littlejohn of Itron, exhibitor Tom Eichelberger of AR RF/Microwave Instrumentation, and Jamie Smith of Itron.

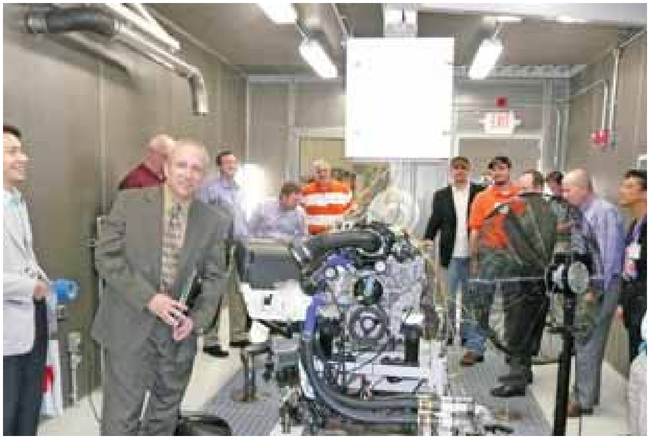


Steve English (left) and Doug Hughes of TUV SUD America traveled from the greater Detroit area to Clemson to staff their exhibit.



The lunch break was an ideal time to informally catch up with colleagues as exhibitors CJ Reddy (left) and Sun Rensheng (right) of EM Software and Systems did with Clemson Professor Todd Hubing.

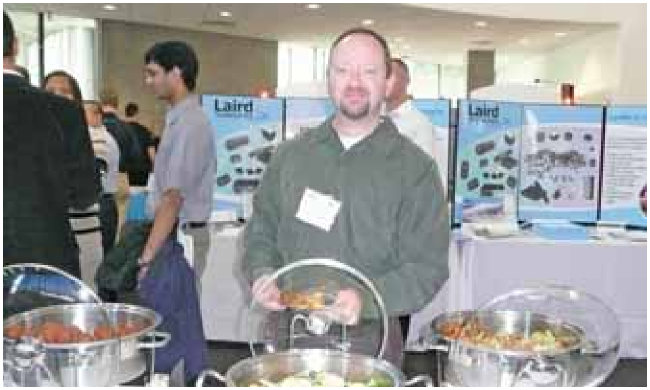
The one-day event featured a tour of the impressive new CU-ICAR. Colloquium Chair Todd Hubing (far right) led a few tours of the many automotive test chambers.



Mark Steffka gets a kick out of seeing an engine under test during the tour of the CU-ICAR. Turns out Mark worked on that type of engine at GM before he joined the GM Powertrain EMC group. Mr. Steffka is one busy fellow; he works at GM and is an adjunct professor at the University of Michigan - Dearborn.

The speakers at the Clemson Colloquium relaxed after a full day of energetic presentations, including, (front row from left) Julian Weber of BMW and Daryl Beetner of the Missouri Institute of Science and Technology, (back row from left) Mark Steffka of the University of Michigan-Dearborn, Scott Mee of Johnson Controls, Vince Rodriguez of ETS-Lindgren, Todd Hubing of Clemson University and IEEE Regional Conference Coordinator, Janet O'Neil of ETS-Lindgren.

EMC 2008 had an exhibit at the Clemson event and offered one free registration to the 2008 IEEE International Symposium on EMC as a raffle prize. Lucky winner Crystal Johnson of 3M in Austin, Texas is flanked by symposium committee members Mark Steffka (left), Technical Program Co-Chair and Kimball Williams (right), Symposium Chair.



Jeff Waggoner of Rohde & Schwarz enjoyed the reception held at the conclusion of the Clemson Colloquium and Exhibition. The dinner buffet, wine, raffle prizes, and opportunity to meet informally with one's colleagues in the EMC industry were the perfect ending to a great day.

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