Chapter Chatter

Todd Robinson, Associate Editor

Mahalo for "Hang Loose" and "Aloha"

I'd like to do something a little different in the Chapter Chatter headline this time. Hopefully, the half dozen faithful readers of Chapter Chatter will enjoy something different. And, if my musings aren't enjoyable, never fear, I will return to the regularly scheduled programming in the next issue.

Hang Loose. Can we make Hawaiian shirts the standard attire of all future symposiums? There was something unique and relaxing about visiting with EMC friends old and new – with the shirttails hanging out on my hibiscus flowered shirt. I really enjoyed how so many vendors in the exhibit area got into the Hawaiian spirit, with themed company shirts, bags, logos, etc.

Walking and driving around Oahu, I don't recall hearing a car horn. And, the only hand gesture I saw was "hang loose." I'd like to import that to the mainland.

It was cool to be where it was cool. How nice to leave 100+ degrees for the pleasant 70's and 80's of Honolulu. Poi was not something I would serve at home, but I did try it. However, I could live on that deep-pit BBQ pork.

Aloha. You have to love a word that means hello and goodbye. Times together are to be appreciated and good-byes shouldn't be forever. It was a blast to see and visit with so many old friends this year. How fitting for an anniversary celebration. This was our yearly 'EMC family reunion' on a grander scale. I seemed to have a greater opportunity to catch up with more people this year than in years past. I was thankful for a visit with Mike Hart in his booth – and sad that it will be the last. Aloha Mike.

Albuquerque

Leland H. Bowen reports that the IEEE AP/EMC/MTT/NPSS Society Albuquerque Chapter has held several meetings recently. On January 25, Professor Christos G. Christodoulou, Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, gave a presentation entitled, "Reconfigurable Multifunctional Antennas." Professor Chrisoduolou is an IEEE AP Society Distinguished Lecturer. On February 21, a talk entitled, "What's Up with GEMACS and the CEM Framework?" was given by Dr. Edgar L. (Buddy) Coffey, of Advanced Electromagnetics in Albuquerque, New Mexico. On April 25, "Low- and High-Frequency Solutions of the Telegrapher Equations for Nonuniform Multiconductor Transmission Lines," was the topic when Dr. Carl E. Baum, Distinguished Research Professor, Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, visited the Chapter. Dr. Carl E. Baum is the recipient of the 2007 IEEE Electromagnetics Award "for contributions to fundamental principles and techniques in electromagnetics." This IEEE Technical Field Award was presented to Dr. Baum at the AP Symposium (10-15 June, Honolulu, HI) and at the EMC Symposium (8-13 July, Honolulu, HI). The award was presented formally by the President of the IEEE, Professor Leah Jamieson, at the EMC Symposium where Dr. Baum presented this talk as an Invited Paper. Finally, on June 7, a presentation on "The Folded Horn Antenna," was given by Dr. Everett G. Farr, President, Farr Research, Inc. of Albuquerque, New Mexico.

Beijing

In mid June 2007, Dr. Li Erping, an IEEE EMC Distinguished Lecturer, from the Singapore Institute of High Performance Computing, was invited to deliver a series of IEEE Distinguished lectures in Beijing, China. A total three distinguished lectures were given over June 12 to 13 at three prestigious Chinese Universities in Beijing, namely, Tsinghua

Dr. Erping Li had a discussion with Professor Cui Xiang (front row, second from right), the Dean of Electrical and Electronic Engineering, NCEPU, and other attendees during the IEEE Distinguished Lecture break.

Dr. Erping Li delivers a Distinguished Lecturer talk in Beijing.

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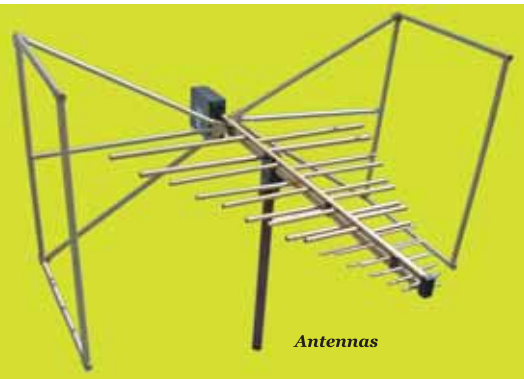

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After his Beijing lecture, Dr. Erping Li (right) had a luncheon meeting with Professor Jinliang He (left), an EMC Professor at Tsingua University, Beijing.

Speaker Lee Hill (far right) of SILENT chats with Central New England Chapter members following his presentation at the June 19 Tech Tour.

University, North China Electric Power University and Beijing Institute of Technology. The first distinguished lecture entitled "Multiscale simulation for complex EMC problems" was delivered in Tsinghua University's main building on the morning on June 12, which was hosted by Professor He Jinliang, from the Department of Electrical Engineering, Tsinghua University, Beijing, China. Dr. Li elaborated on the significance of EMC in both electrical and electronic products, the requirements of EMC simulation tools, and multiscale simulation techniques for complex EMC analysis. Following the talk, Dr. Li visited the Tsinghua University's Electromagnetic Environment Research Lab. Dr. Li also held a fruitful luncheon meeting with Professor He regarding the IEEE EMC developments and activities in China. The second distinguished lecture was held at the Campus of North China Electric Power University (NCEPU), Beijing, and organized by Professor Cui Xiang, Dean of the School of Electrical and Electronic Engineering with NCEPU, where Dr. Li spoke on "Electromagnetic susceptibility analysis for electronic systems". He pointed out the challenges of electromagnetic susceptibility analysis and design challenges encountered by the EMC community. In addition, he presented the equivalent circuit modeling techniques for RF radiated electromagnetic susceptibility analysis. The lecture was followed by another interesting talk on reverberation chambers for EMC testing. A follow up meeting was carried out with Professor Cui's EMC research group where they discussed EMC developments in China and addressed the future Asia-Pacific EMC collaboration. The third distinguished lecture was conducted at the Beijing Institute of Technology (BIT), hosted by Professor Lu Xin, Dean of Electronic and Information Technology, and Professor Shen Xinqing from BIT. Dr. Li gave a presentation on, "EMC and Signal Integrity in High-speed IC and Electronic Packaging". In this talk, Dr. Li elaborated on the major signal integrity and power integrity issues in high-speed designs of electronic packaging, including ICs. He also showed the recent research work carried out in his research group on system-level package modeling. Dr. Li's Beijing IEEE distinguished lectures were well attended by representatives of various institutions including the research students, professors, engineers, and officers from Tsinghua University, North China Electric Power University, Beijing Institute of Technology, Beijing Jiaotong University, Chinese EMC Society, Editorial board members of the magazine of EMC and Safety in China and others. The attendees greatly enjoyed the IEEE EMC distinguished lectures. Thanks were given to the distinguished lecture organizers Professor Xui Xiang, Professor He Jinliang and Professor Shen Xinqing.

Central New England

John Clarke, Secretary of the CNE EMC Chapter, reports that the CNE Chapter held a meeting on Tuesday April 17. The speaker was Bruce Archambeault, PhD, Distinguished Engineer of IBM, North Carolina. The presentation covered the topic "Elec-

Central New England Chapter members, including Roger Anderson of EqualLogic (center) and two attentive unidentified women visit during the reception following the Tech Tour.

Sharon Smith of Conformity magazine, one of the Tech Tour sponsors, joins Jim Schell of Kaiser Systems, winner of the raffle prize drawing held during the reception.

tromagnetics for the Working Engineer." Electromagnetics theory is surrounded by mystery and magic. Mostly because the mathematics needed to solve Maxwell's equations are messy enough that most of us avoid them at all costs! This presentation was intended to remove the mystery behind electromagnetics and explain things in everyday terms - without the mathematics. Some of the basic symbols used in mathematics, such as integration, derivatives, and weird vector symbols were explained. Then, using these simple explanations, Faraday's and Maxwell's contributions to electromagnetics were explained. These concepts are not just of university only interest, they have real world application in the design of electronic equipment. Faraday's law is an introduction to inductance, and this presentation examined inductance and its impact on system-level and printed circuit board design, the concept of "ground", and return current flow. Also, the speaker included a brief discussion on shielding and antennas. Eleven IEEE members and four guests attended Bruce's presentation. The Chapter also sponsored the Tech Tour at the Westford Regency and Conference Center, Westford, Massachusetts on June 19. Two of the four speakers, Lee Hill and Randal Vaughn of SILENT, are CNE Chapter members. The other two speakers included Dr. Vince Rodriguez of ETS-Lindgren, and Vic Hudson of Rohde & Schwarz. The SILENT presentation addressed EMC troubleshooting techniques and provided many hands-on real world examples. Dr. Rodriguez gave a presentation titled "Considerations for MIL-STD Testing Facilities, Including Field Generation and Antenna Systems for Immunity Measurements" noting that an EMC chamber properly designed for MIL-STD 461E requirements can be used for conducted emissions, conducted immunity, radiated emissions, and radiated immunity testing. The presentation discussed chamber essentials for making MIL-STD 461E measurements. Mr. Hudson presented "EMI Measurements Using Time Domain (FFT) Based Test Instruments." He discussed EMI measurement systems with a focus on comparing and contrasting time domain/FFT and frequency domain based instruments. The pros and cons of each method including comparisons of timing, accuracy and the usability of the results each method produces were addressed. The CNE Chapter anticipates scheduling the next Chapter meeting in early Fall 2007.

Chicago

Frank Krozel provided an update on Chicago's 9th annual IEEE EMC Mini-Symposium. Of course, the EMC Mini-Symposium was a success, according to Mr. Krozel, EMC Mini-Symposium Chairman. They had 94 guests, some of which were new to the Mini-Symposium. There were 21 tabletop exhibitor displays and four technical presentations. The presentations ranged from fundamentals of EMC to specification changes to transient mitigation. Mini-Symposium attendees left with new information on several specifications that have changed, and that they need to address. In addition, one of the highlights was the EMC Panel of Experts. Attendees had the opportunity to ask a panel of experts questions related to EMC, moderated by the Panel Chairman, Frank Krozel of Electronic Instrument Associates. The IEEE EMC Mini-Sympo-

The "EMC Panel of Experts" at the Chicago Chapter's Mini-EMC Symposium included (back row from left) Frank Krozel, Dr. Bret Robinson, Tom Braxton, Roger Swanberg, Ray Klouda, (front row from left) Bob Hofmann, Jerry Meyerhoff, and Craig Fanning.

The EMC technical presentation at City University by the President of the EMC Society, Andy Drozd.

sium is a yearly event, sponsored by the Chicago Chapter. For additional details, see http://www.emcchicago.org.

Hong Kong

The Hong Kong Chapter had a successful day on 23 June when they held two EMC technical presentations and EMC Society talks. This half-day meeting had 37 attendees, and was part of the EMC Society Board of Directors out reach to Hong Kong. The two technical talks were: "New Paradigms for Spectrum Management Based on RF Resource Utilization Beyond Spectrum" and "Infrared Images of EM Fields for Numerical Code Validation" presented by Andrew L. Drozd, President of the IEEE EMC Society. A meeting of the Hong Kong Chapter's committee members, along with a delegation EMC Society Board Members, including Andy Drozd, Barry Wallen (VP Conference Services), and Francesca Maradei (Chapter Coordinator) was held after the technical presentations. The meeting introduced various EMC Society related matters including discussion on the Chapter's direction and possible future Hong Kong Chapter events. A social gathering and Hong Kong tour were also organized the day after the event. Board members were introduced to the culture and some popular Hong Kong sites, including a seafood dinner at Lamma Island.

The EMC Society Board of Directors delegation meeting with the Hong Kong EMC Chapter Committee members as part of their outreach visit.

Dr. David Cheng (center), IEEE Hong Kong Section Chairman, presenting a souvenir to Andrew Drozd, the President of the IEEE EMC Society, after the technical presentation. The Chairman of the Hong Kong EMC Chapter, Peter Leung, is on the left.

The EMC Society Board of Directors delegation and the Hong Kong EMC Chapter committee members enjoyed a Chinese Dim Sum lunch at the Chinese Restaurant in the City University of Hong Kong, prior to the Chapter meeting.

A laboratory tour to the Applied Electromagnetic Lab at the City University of Hong Kong was held following the Chapter meeting.

Huntsville Chapter members networking before the meeting began.

Ken Javor (third from right) explains the operation of the BC-348Q radio to several interested Huntsville Chapter members.

Huntsville

Glenn Shelby, Chapter Chair, reports that the Huntsville Chapter held a monthly technical meeting on May 10. The Chapter is indebted to Ms. Leigh Christian of Mindready Systems for hosting the event and to Mr. Ken Javor of EMC Compliance for sponsoring the delicious barbeque dinner. Mr. Ken Javor presented "Military/Aerospace EMI requirements and demonstration of historic EMI test equipment used to set test limits." The talk was well attended with 44 members and guests present. Mr. Javor explained the historical background of U.S. military EMI requirements and demonstrated antique radio receivers and EMI test receivers. He explained that shortcomings in World War II-era radio and radio installation design caused inordinate sensitivity to nearby electric fields and also power bus noise. The levels that caused Radio Frequency Interference (RFI) were very low, and the EMI requirements were levied to control emissions to those low levels. The WWII-era BC-348Q radio and the AN/PRM-1 EMI test receiver used to measure its susceptibility were both demonstrated during the meeting to show how the original EMI requirements were constructed. In addition, the 1960s-era AN/BRR-3 submarine Very Low Frequency (VLF) receiver was demonstrated to explain the origin of the RE01 magnetic field requirement. Mr. Javor's presentation was very well received, as evidenced by the number of attendees who stayed for over an hour after the presentation to talk with him and examine the equipment. The Chapter is grateful to Mr. Javor for the demonstration and for hauling the very heavy equipment to the meeting. A sudden thunderstorm after the meeting made it very interesting to

Huntsville Chapter members admiring the workmanship of the AN-BRR-3 VLF receiver.

Huntsville Chapter members Ken Javor (left) and Curtis Neely (right) sharing EMI experiences after the meeting.

load the equipment in an open truck for the ride home! Several Chapter functions are planned for the rest of the year. Mr. Jeff Bruce, Steward, will present "Ferrites in the suppression of EMI" at the August meeting. Dr. Jun Fan, EMCS Distinguished Lecturer, will present "Power distribution network design for high-speed printed circuit boards" at the September meeting. The annual Chapter business meeting will be held in October to close out the year. Planning for future events including Huntsville EMC 2008 (April 29, 2008) is underway. The call for presentations for the 2008 Chapter year will be sent out in September. Please contact Glenn Shelby (glennshelby@ieee.org) if you would be interested in presenting to the Huntsville EMC Chapter at one of the 2008 monthly meetings. Remember to check out Huntsville EMC Chapter happenings at the Chapter website: http://ewh.ieee.org/r3/huntsville/emc/.

Los Angeles

The Los Angeles Chapter boasted an all-star lineup for the Spring series of meetings including EMC Society Distinguished Lecturer David Hockanson of Sun Microsystems in March, past Distinguished Lecturer Doug Smith of D.C. Smith Consultants in April, as well as past Chairman of the Distinguished Lecturer Program Lee Hill of SILENT, Vince Rodriguez of ETS-Lindgren and James Young of Rohde & Schwarz for the EMC and Wireless Tech Tour in May, and, finally, EMC Society Photographer Ken Wyatt of Agilent Colorado Springs in June. David Hockanson spoke on the topic of "Power System Signal Integrity at the Microprocessor Level." He spoke on the methodology he used to analyze the power signal integrity of an actual Sun microprocessor. David's energetic presentation style had most attendees at the edge of their seats. There were plenty of questions for David at the end of his presentation as most of the attendees were involved with signal integrity issues. Doug Smith spoke on the troubleshooting of PCB's with low cost test equipment for ESD susceptibility. Doug had an actual PCB that had a known reset problem and he invited the audience to use his troubleshooting setup to find the area of susceptibility. Surprisingly, it took the attendee "victim" a long time to find the area of susceptibility, as it was a very localized spot on the PCB. When the correct area and loop orientation the PCB's flashing LEDs locked up, Doug also lightened up the crowd by showing a Dilbert video clip "The Knack" which most engineers would appreciate! It got quite a few laughs from the attendees as it hit close to home. It can be found on Google Video by typing in "The Knack." Chapter members traveled to the Irvine Hilton to attend the half-day EMC Tech Tour and meet up with members of the Orange County EMC Chapter. At the Tech Tour, Lee Hill showed us how to easily check the quality of RF connectors, adapters and cables by fashioning a return loss measurement setup using a spectrum analyzer, directional coupler and a tracking generator. He demonstrated how a seemingly high quality expensive RF connector or load actually had poor return loss whereas a cosmetically beat up RF load had better return loss. He stressed the importance of quickly verifying the quality of all RF components in the measurement signal

Gary Wu and Louis Catuogno of Boeing Satellite Systems, Speaker David Hockanson of Sun Microsystems, Connie Pedroza of Northrop Grumman, David Fischer of Fischer Custom Communications and Carl Vogelsang of Boeing (from left) enjoyed the March Los Angeles Chapter Meeting.

Doug Smith gives his presentation on troubleshooting of PCB's with low cost test equipment to the Los Angeles Chapter in April.

path before making emissions measurements. Vince Rodriguez discussed several of the test environments used for radiated testing: GTEM, OATS and Anechoic Chambers. He outlined some of the advantages and disadvantages of each of these test environments. Each one has limitations but some can only be used for pre-compliance testing whereas an OATS or properly size anechoic chamber can be used for compliance testing. James Young discussed the new EMI receiver architecture that allows for faster sweeps giving the user more real-time spectral data than conventional EMI receiver architectures. It allows the user to see more of the time history for signals of interest, which will aid the test engineer in identifying EMI sources. In June, Ken Wyatt spoke on The Top Ten EMI Problems and Troubleshooting Techniques. As he went through his top ten list of EMC problems he illustrated the design deficiencies with real-world examples of real products. He has seen these very common problems time and time again over his lengthy career with Agilent as an EMC Engineer. After this, he went into the second part of his presentation, which featured his "EMC Crashcart" kit. His kit is full of all kinds

Doug Smith demonstrating trouble-shooting techniques in Los Angeles.

Kanaiya Mahendra performs well as an audience volunteer during Doug Smith's ESD transient troubleshooting technique demonstration in Los Angeles.

A close up of Kanaiya Mahendra troubleshooting a sample PCB during Doug Smith's troubleshooting presentation in Los Angeles.

Ken Wyatt during his presentation on the "Top Ten EMC Problems" at the June Los Angeles Chapter meeting.

Ken Wyatt's inexpensive spectrum analyzer that utilizes a Palm Pilot for a display shown during his presentation to the Los Angeles Chapter in June.

PHOTO BY RHONDA ERICKSON

Lee Hill of SILENT gave a great presentation titled "Characterize EMI Lab RF Cables, Connectors, and Accessories Using eBay and a Test Receiver" during the Tech Tour held on May 15 in Irvine for the Los Angeles and Orange County EMC Chapters.

PHOTO BY RHONDA ERICKSON

Los Angeles Chapter members Brian Kuhlman and Terry He of Boeing joined John O'Brien of WEMS Electronics (from left) during a break between Tech Tour presentations.

PHOTO BY RHONDA ERICKSON

Los Angeles Chapter Chair, Ray Adams (left) of Fischer Custom Communications, visited with Danny Odum of ETS-Lindgren during the Tech Tour reception.

of low cost troubleshooting tools. Ken estimated the total cost of the kit at around $3,000. Some of the items were a spectrum analyzer, low noise amplifier, ESD sources, ESD event detectors, current probes, homemade antennas, harmonic comb generator (schematic and parts list included), resistivity probes and other goodies. The spectrum analyzer was rather interesting as its display is a Palm Pilot that can be removed so you can check your e-mail or lookup a telephone number while taking a break from EMC troubleshooting. In addition to an excellent presentation, the attendees were treated to a three-course dinner at Zazou in the upstairs banquet room. Many Chapter members were looking forward to the EMC Symposium and their chance to share their EMC expertise to their fellow EMC engineers with the acceptance of their technical papers by the symposium technical committee. Some were more excited and proud of getting their travel to Hawaii approved (by their company) than actually going to Hawaii! The Los Angeles Chapter has also been getting ready for EMC 2011 as the contract for the Long Beach Convention Center was signed late in June. By

PHOTO BY RHONDA ERICKSON

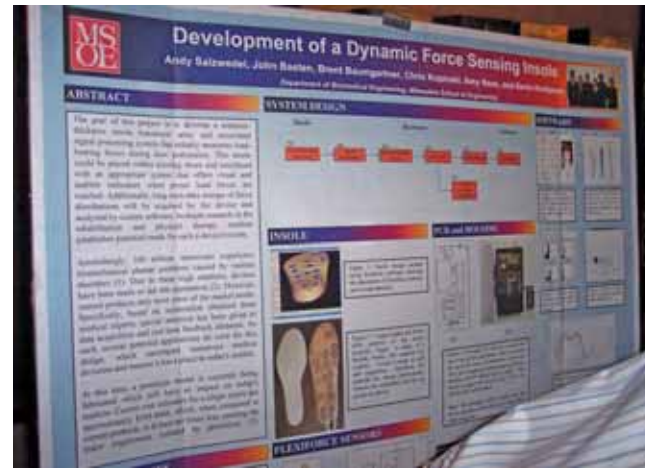
Verdin Orozco, Roger Mannering, and Joseph Capella (from left) of Dot Hill Systems enjoyed good food, good drink and good networking at the reception following the Tech Tour.

PHOTO BY RHONDA ERICKSON

The Tech Tour reception in Los Angeles featured tabletop displays by the event sponsors, ETS-Lindgren, SILENT, Rohde&Schwarz and Conformity Magazine.

PHOTO BY RHONDA ERICKSON

Tien Vu of Northrop Grumman (far left) won the raffle prize at the conclusion of the Tech Tour in Los Angeles. He's smiling as he was the last to RSVP yet won a great prize! Joining him are Martha Hallman and Danny Odum.



MILWAUKEE PHOTOS COURTESY OF JIM BLAHA

First Place Winner! The "Dynamic Force Sensing Insole for Ambulatory Therapy" poster by the Milwaukee School of Engineering.

doing so, the Chapter was able to claim incentive money from the Long Beach Area Convention and Visitors Bureau.

Milwaukee

This spring, the Milwaukee EMC Chapter participated in an IEEE Milwaukee Section sponsored "Senior Project Poster Competition." This competition was open to the three Engineering Colleges within the Section. They are: Marquette University, Milwaukee School of Engineering (MSOE) and the University of Wisconsin at Milwaukee. The competition was held at the Miller Inn, located in Miller Valley, home of the Miller Brewing Company. A well-attended meeting provided an opportunity for the senior standing students to brush up on their presentation skills. It also offered an opportunity for the various Chapters to catch up on each other's activities. Second place was awarded to a team from UW-Milwaukee for its Radio Direction Finder System for Small Hobby Crafts. First Place was awarded to the team from MSOE for its Dynamic Force Sensing Insole for Ambulatory Therapy. After the awards were presented to the students, IEEE Region 4 Awards were also presented. The Magnetics, Power and EMC Chapters received awards. The Milwau-

Free beer on tap at the IEEE Milwaukee Section "Senior Project Poster Competition."

Jim Blaha (left) of Ingenium Testing, Milwaukee Chapter Chair, enjoys "Miller Time" with Milwaukee IEEE Section Vice-Chair Tom Smith.

The Miller Brewing Company with free beer and free parking proved to be an ideal location for an IEEE event in Milwaukee.

A close up of the biosensor insole at the Milwaukee IEEE Section event.

The University of Wisconsin at Milwaukee received the second place award for its "Radio Direction Finder System for Small Hobby Crafts."

PHOTO BY STEVE GERARD

Dan Hoolihan presents Tom Karas of Motorola and Jim Vogler of National Technical Systems (from left) with IEEE beach towels to commemorate the 2007 EMC Symposium in Hawaii. Tom and Jim won the towels as door prizes at the May meeting of the Phoenix Chapter.

kee EMC Chapter was acknowledged by Region 4 as one of the most active Chapters within the region for calendar years 2004, 2005 and 2006.

Phoenix

Harry Gaul, Chapter Chair, reports that 18 people attended the May meeting of the Phoenix EMC Chapter. EMC Society VP for Member Services Dave Staggs gave a brief presentation on the upcoming EMC Symposium and 50th anniversary celebration of the EMC Society, which will be held in Hawaii this summer. Dan Hoolihan was the featured speaker with a topic entitled "Understanding the Latest Changes to IEC 17025 for EMC Lab Accreditation." Dan began his talk by offering suggestions on how to select an EMC Lab. First, you should make sure the lab is accredited to ISO17025: 2005 and then verify that the scope of accreditation covers all of your tests. The ISO17025 document covers all kinds of labs, not just EMC. The document includes both management requirements as well as technical requirements. One of the highlights of ISO17025 is that a lab needs to seek feedback from its customers, both positive and negative. Also corrective action using root cause analysis should be undertaken to correct error prone processes. In particular, Dan mentioned that a lab's measurements should always

fall within plus or minus two standard deviations. This should be checked on a routine basis by performing intermediate checks such as measuring the E-field level of an FM radio station. Information on future meetings is available on the Phoenix EMC Chapter Web site at http://www.ewh.ieee.org/r6/phoenix/phoenixemc/.

Pittsburgh

A technical meeting of the Pittsburgh EMC Chapter was conducted on April 17 at the Westinghouse Energy Center in Monroeville, PA. Michael Oliver, EMC Chapter Chair, and Harry Godlewski, Vice Chair, hosted the meeting with 16 people in attendance. We were fortunate to have four students attend the meeting from Geneva College; it is always important for our EMC Chapter to have Electrical Engineering students involved for continued growth in our field. The meeting started with a social prior to a technical presentation. We had the privilege of having Lee Hill as our technical speaker. Lee is a founding partner of SILENT; an independent consulting firm that specializes in EMC and RF design, troubleshooting, and training services to commercial and industrial manufacturers. He presented "Measuring Noise Current and How to Reduce it Using Ferrites." This presentation was based upon a mix of Lee's other more in depth presentations that he regularly presents as courses offered through SILENT. On May 15-17, Lee held a three-day Electronic Product Design & Retrofit for EMC Class at the Syria Shrine Center in Cheswick, PA. For more details, see the following link: http://www.silent-solutions.com/education.htm. In the technical presentation, Lee reviewed the use of low and high frequency noise filter inductors that are commonly referred to as 'ferrites'. He provided the necessary background, the concepts of differential and common-mode current and demonstrations using a spectrum analyzer, a variety of current probes, and several 'live' noise sources. Discussion also included tips for choosing the right probe and ferrite to understand and solve noise problems and a review of Lee's favorite current probes for the measurement of low and high frequency currents. This presentation was relevant to anyone involved in the control of electrical noise from 10 kHz to 10 GHz. Lee encouraged audience participation and welcomed questions throughout the presentation.

Rock River Valley Section

Great news from Rockford, Illinois: The EMC Society has a new Chapter! The EMC Society has granted an EMC Chapter to the IEEE Rock River Valley (RRV) Section. The new EMC Chapter will be joining three Chapters as part of the RRV Section. The other three Chapters are: Industrial Applications, Computer/Control Systems and Power Electronics. To jump-start the petition for an EMC Chapter, the Rock River Valley Section assisted with the hosting of Tech Tour 2007 by ETS-Lindgren, Rohde & Schwarz, SILENT and Conformity. This half-day seminar on June 6 provided practical EMC design experience from the experts. One of the featured speakers was also one of the EMC Society's own experts, Mr. Lee Hill. Over 80 registered professionals attended the presentations. Following the technical program, the attendees also had the opportunity to tour the new Ingenium Testing EMC Laboratory. A social, with four varieties of cheesecakes, followed the hour-long tour. This summer has also been an active one for the new

PHOTO BY JIM BLAHA

Ingenium Testing, LLC hosted over 80 Tech Tour attendees from the IEEE Rock River Valley Section for a tour of its facility.

PHOTO BY RHONDA ERICKSON

Dr. Vicente Rodriguez of ETS-Lindgren presents "Considerations for MIL-STD Testing Facilities, Including Field Generation and Antenna Systems for Immunity Measurements" at the Rockford Tech Tour.

PHOTO BY RHONDA ERICKSON

Rockford Tech Tour speaker and sponsor, Vic Hudson of Rohde & Schwarz, presents "EMI Measurements Using Time Domain (FFT) Based Test Instruments."

PHOTO BY RHONDA ERICKSON

The light and bright cafeteria area of Ingenium provided a perfect location for the Tech Tour reception held following the tour of Ingenium's new test facilities in Rockford, Illinois.

PHOTO BY RHONDA ERICKSON

Jack Black of DLS Electronic Systems won the raffle prize drawing held at the conclusion of the Tech Tour reception. Tammy Hojat of ETS-Lindgren presented the prize.

PHOTO COURTESY OF JIM BLAHA

Joe Etminan (left), IEEE Rock River Section Chair, of Rock Valley College joins the new Rockford EMC Chapter Chair, Jamal Shafii (center) PhD, of Hamilton-Sundstrand during a hand shake "Welcoming" from Jim Blaha, EMC Chapter Chair in Milwaukee.

EMC Chapter. A seminar committee has been formed and plans are already locked in for an EMC Seminar in October. Chairing the seminar committee is the new EMC Chapter Chair, Jamal Shafii, PhD. Look for Jamal's seminar report in the Winter Issue for the EMC Newsletter.

Romania

On June 14, the Romanian EMC Chapter, in co-operation with the Romanian EMC Association (ACER), Technical University of Cluj-Napoca and Research Institute for Electrical Engineering (ICMET Craiova), held the workshop, "Romanian Regulations Harmonized with European Directives: EMC, R&TTE, Automotive and Workers Health and Safety requirements to the risks arising from electromagnetic fields." Of course, the conference had a special emphasis on EMC topics. The one-day workshop was hosted by the Electrical Engineering Faculty of the Technical University Cluj-Napoca (Western Romania). More than 50 people, including representatives from national regulatory bodies, universities, research institutes, tests laboratories and industry, attended the meeting. The technical programme was established by Professor Sorin Coatu, from the "Polytechnical" University of Bucharest, EMC Chapter Chair and Professor Andrei Marinescu, from the

Professor Andrei Marinescu, Vice-Chair of the Romanian EMC Chapter, opening Romania's recent workshop. Professor Călin Munteanu (Electrical Engineering Faculty of the Technical University Cluj-Napoca), Professor Radu Ciupa (Dean of Electrical Engineering Faculty), Professor Andrei Marinescu, and Rr. Ioan T. Pop (Transelectrica) are shown from left.

Professor Andrei Marinescu introduces Eng. Uwe Flor (EM Test GmbH, Germany), who presented a report about new aspects in the revised version of IEC 61000-4-4 standard (Ed. 2.0) to the Romania Chapter.

Research Institute ICMET Craiova, Vice-Chair, who also lead the debates. The goal of the workshop was to promote the latest provisions regarding EMC in the above-mentioned directives and related standards. All 16 presentations were included on a CD, which will prove useful to attendees in their corporate and academic roles. The EMC Chapter wishes to express its gratitude to Professor Călin Munteanu, from the Technical University of Cluj-Napoca, for organizing the meeting and providing rooms and technical equipment. The Chapter also thanks all authors of the presentations.

Seattle

Pat André, Chapter Chair, reports that the Seattle Chapter had an excellent meeting on May 18 with EMC Society Distinguished Lecturer David Hockanson of Sun Microsystems presenting "CSI: Compliance System Investigation." Dr. Hockanson explained how the world of the EMI/EMC debug has long been shrouded by the consideration that there must be some type of "black magic" associated with eliminating system compliance issues. He showed how, using physics and signal analysis, locally developed solutions can be determined to facilitate EMI/EMC containment and/or mitigation. His presentation discussed the tools, methods and process of solving radiated emissions issues arising during testing.

PHOTO BY JANET O'NEIL

Pat André (left) of André Consulting, Seattle Chapter Chair, presents a small token of appreciation (Seattle's Best Coffee) to speaker David Hockanson of Sun Microsystems at the May Chapter meeting.

PHOTO COURTESY OF JANET O'NEIL

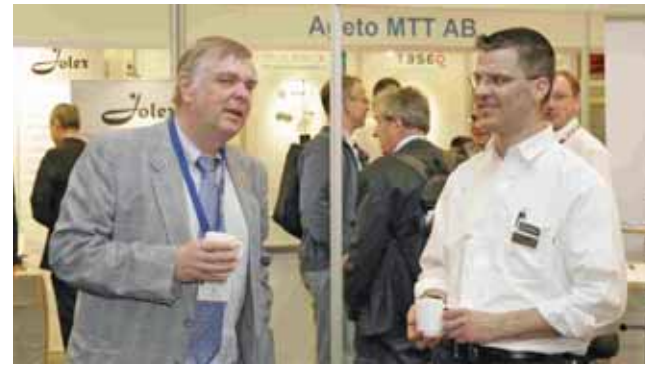
Seattle Chapter members enjoyed a pizza dinner at CKC Labs in Bothell prior to the excellent presentation by Distinguished Lecturer David Hockanson.

The meeting was held at CKC Labs in Bothell where pizza was served for a casual dinner before the presentation.

Sweden

Jan-Olof Brink, Vice Chairman of the IEEE Sweden EMC Chapter, reports that on April 17 and 18, 2007, the first Swedish professional conference on the theme "EMC, ESD and Electricity Safety" was held in Gothenburg, Sweden. The event was organised by Just Event Sweden AB and had been prepared for more than one-year prior. Several prominent organizations such as the IEEE Sweden EMC Chapter, Nordic ESD Council, and Swedish National Committee on Radio Science supported the event. A very good mix of people from different companies, authorities and universities attended, and a good "cross-fertilization" could be seen as a result. This was the natural opportunity for "people in the

The audience listens attentively at the first Swedish professional conference on the theme "EMC, ESD and Electricity Safety" held in Gothenburg, Sweden.



The exhibition held during the Gothenburg, Sweden conference encouraged much interaction between the participants. Jonathan Silvergran (right) of Saab Aerotech EMC and Electromagnetic Engineering in the town of Östersund, is the IT-manager for the Swedish EMC Chapter.

SWEDEN PHOTOS COURTESY OF JAN-OLOF BRINK

IEEE EMC Sweden Chapter Vice-Chair Jan-Olof Brink encouraged participants to learn more about the IEEE and EMC Society at the Gothenburg conference.

SIBCON 2007 attendees enjoy a walking tour of the traditional architecture of Tomsk, Russia.

business" to gather and spread experience and know-how. Professor Dag Stranneby of Orebro University, presented the first paper with the title "What Colour is the Electron?" At the end of the presentation we got the answer - it is yellow. More than 50 additional papers were presented on the subjects EMC, ESD and Electricity Safety, in four parallel sessions. Just outside the conference hall, there was an exhibition with 40 exhibitors showing their products and services. In summary, it was an excellent event, and you can see from the amount of visitors in the photo shown that there is a growing need for this kind of event in Sweden. The goal is to repeat this event in the next two or three year's time. The IEEE Sweden EMC Chapter will meet again in Linköping on October 2. The theme for this meeting will be EM-terrorism and intentional EMI to wireless networks. Please contact the chairman of this event, Mr. Leif Junholm for more information leif.junholm@ieee.org. For more information on the activities of the Sweden EMC Chapter, please contact Mr. Brink at janolof.brink@kockums.se or visit the Chapter website at www.ieee.se.

Tomsk, Russia

Oleg Stukach, Chapter Chair, reports that the seventh Siberian Conference on Control and Communications (SIBCON 2007) was held by the Tomsk Joint EMC Chapter, in Tomsk. The event was also organized by the Siberia Section, co-sponsored by ED-S, MTT-S, ComSoc, and sponsored by the Russian Foundation for Basic Research. Topics included "Simulation and Modeling in Control and Information Processing," the "Basic Problems of Communication and Control Theory," and "Digital Video and Image Processing." There was also a special session on "Materials for Electron Devices and X-Ray Detectors." The program consisted of the paper presentations and discussions while a social program included a site-seeing tour, banquet and bowling. Once again, the conference has shown that a narrow, specialized event can not only be successful in Russia, but that it is also extremely necessary for the development of important technical fields. The second day of the conference was especially successful. The summer-like weather was very hot. Saturday's foot excursion, which demonstrated the unique wooden houses of Tomsk, made an indelible impression on the tour's participants. During our tour, traditional songs about Tomsk played from street loudspeakers. The architectural-musical foot tour was certainly a highlight of the conference. We cordially invite all interested experts to participate in the next SIBCON 2009. Your cooperation and support of the Scientific Program Committee would be highly appreciated. Please find information regarding future events on the Web at http://www.comsoc.org/tomsk.

United Kingdom & Republic of Ireland

The Chapter had another successful programme of events in 2006 starting on Wednesday, March 1, with a meeting at the British Telecommunications Offices in Brentwood, Essex. Presentations were on a number of important topics by Martin Wright, Trevor Morsman, Paul Sayer, Brian Jones and John Pink. The meeting went well with a good atmosphere and plenty of audience participation. Twenty-one people attended. The next event was in June at The National Space Centre in Leicester. There was a good turnout for

Roy Ediss of Philips talks about analyzing current paths and magnetic fields at Newbury.

exciting presentations from the five speakers on "Space/Aerospace EMC" plus "Some Topical Measurement Subjects." Attendees were able to explore the site/facility in the afternoon where much historic rocketry etc. is on display. On October 18, Experiment Demonstration Sessions were held at EMCUK2006 in the Newbury Racecourse Conference Centre. Stuart Charles, Andrew Lambourne, Roy Ediss and Lorant Foelkel in the marquee annex gave four practical experiment and computer solution demonstrations. On December 6, the annual general meeting and afternoon technical meeting were held at University College London. The afternoon meeting was a special event on "PCB and IC Level EMC" presented by two world-class speakers Tim Williams and IEEE EMC Distinguished Lecturer, Etienne Sicard. An after-meeting networking session was held in "The Lamb," a traditional London pub. 2007 started with a technical meeting on the theme "Topical EMC Issues." Papers were presented on New EMC Regulations, Forthcoming Multimedia Standards, Cables in EMC Testing and EMC Requirements for Radio Equipment. Although the meeting was interrupted by a fire alarm, it was still very successful and enjoyed by all. EMC

There was much interest in the tabletop demonstrations at Newbury organized by the United Kingdom and Republic of Ireland Chapter.

Andrew Lambourne of Qinetiq demonstrates the effectiveness of EMP protective devices at Newbury.