



Chapter Chatter

Todd Robinson, Associate Editor

A New Perspective

In the nearly 14 years that I have worked in the EMC industry, I have attended numerous IEEE EMC Society symposiums, participating as an exhibitor. In that regard, I did not have any exposure to what had gone on “behind the scenes” to organize, promote, and rollout a symposium. I was honored when, about two years ago, Henry Benitez asked me to head up the publications and publicity activities for the Portland symposium. I really enjoyed working on publicity for Portland. I had great support from IEEE conference management and others working on the symposium. Being physically remote from the majority of my fellow symposium committee members sheltered me, to a degree, from the incredible efforts that others were putting forth to make the symposium happen. Once the symposium had come and gone, I received a new perspective

on effort it took to make it successful. I came away with a new appreciation for the number of professionals we have in the Society who are dedicated to the Society and willing to give their time and talents for its betterment. From my view, the Portland symposium was not about a few dedicated individuals doing a great deal of work, this symposium was about many dedicated people doing a great deal of work. During the wrap-up meeting, I was amazed by each committee chair’s report, as I realized how much effort the members of the committees and sub-committees put forth. The Portland symposium was an incredible team effort. When I attend future symposiums, I’ll have a deeper appreciation for the technical program, the social activities, the tours, the children’s programs, and the exhibit floor, having gained a new perspective on what symposium volunteers gave to make it happen.

Welcome New Chapters!

The EMC Society Board of Directors, Chapters, and members are pleased to welcome two new Chapters into the Society. The new Hong Kong Chapter is chaired by Professor Peter SW Leung eeswl@cityu.edu.hk and the new Czech Republic Chapter is chaired by Professor Milos Mazanek mazanekm@fel.cvut.cz. We wish the newly formed Chapters and their officers a successful future. Please watch Chapter Chatter for more news about the new Chapters.

was held from August 1 to 4, 2006 in Dalian, Liaoning Province, China. Nearly 200 delegates attended the conference from Australia, Belgium, Canada, China, Egypt, Germany, India, Israel, Japan, Korea, Poland, Russia, Sweden, Switzerland, Thailand, USA, and Hong Kong. The chairman of the technical program committee, Dr. Yang Qianli, former vice minister China, presided over the opening ceremony. The other speakers included Professor Gao Yougang (General Chairman) from Chinese Beijing University of Posts and Telecommunications, Professor Koga (Co-Chairman) from Japanese Okayama University and Professor Nitta from Japan (one of the Conference founders and a member of the IEEE EMC-S Board of

Directors). This conference received 260 papers, of which 205 papers were reviewed by the technical program committee. All papers were included in the proceedings CD; 154 papers were from authors in China and 51 papers were from authors in other countries. The technical reports in the conference consisted of two parts: the keynote speeches and group reports. The keynote speeches included: “Developments in the study of lightning electromagnetic effects with applications to the protection of distribution power lines” by Professor Ianoz from the Swiss Federal Institute of Technology of Lausanne, Switzerland; “Microstrip antenna research at millimeter wave technique laboratory of

Beijing

The 4th Asia-Pacific Conference on Environmental Electromagnetics (CEEM’2006)



Todd Robinson and his lovely wife Bonnie at a “Great Gatsby” theme event in Portland.



Dr. Yang Qianli, chairman of technical program committee, former vice minister China, during his welcome address at the CEEM’2006/Dalian in China opening ceremony on August 2, 2006.

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Session discussions were quiet though intense during CEEM'2006/Dalian, China.



Professor Rhee Joong-Geun gave his thanks to conference in his speech before the banquet dinner.

NJUST” by Professor Fang D.G from Nanjing University of Science and Technology, China; “Translation of the electromagnetic mode-splitting along a microstrip line with a slit in the ground plane” by Professor Koga from Okayama University, Japan; “Some advancements in antenna near/far field calculation for EMC prediction” by Professor Gao B.Q. from Beijing Institute of Technology, China. The other 201 papers were presented within 20 different sessions. A glorious banquet was held on August 3 where Professor Rhee Joong-Geun from Korea, Professor Radasky from USA, and Professor Worshevsky from Russia gave ebullient speeches and praised the success of the conference. Also, Mr. Sun, the secretary-general of the communication committee in Liaoning province, gave a splendid Chinese calligraphy show. All performers accepted much applause. This conference was a great success and achieved its goal to foster an international academic exchange, enhance further

cooperation, and promote the development of new technology among different countries. The conference also preliminarily selected the city of Xi’an as the host of the next conference in 2009.

Germany

The German IEEE EMC Chapter was proud to host a workshop entitled “Data Security and Electromagnetic Pulses – Protection Against Natural and Intentional EMI” at the airport Paderborn/Lippstadt near Paderborn, Germany, on September 21. More than 50 people, including participants from banks, data centers and industry attended this one-day event. Professor Michael Koch of the University of Hannover, who is responsible for technical activities in the German EMC Chapter, organized the technical program. Seven presentations on different safety issues connected with electromagnetic fields were made at the successful one-day meeting. After the introduction made by Professor Koch, the technical part

of the meeting was opened with two presentations on lightning given by B. Steinkuehler of Correct Power Institute Ltd. and Professor Gockenbach of the University of Hannover. The three following presentations given by Dr. Sabath of WIS, H. Herlemann and S. Korte of the University of Hannover covered the area of intentional EMI and its effects on electronic systems. The next talk on the electromagnetic shielding properties on building materials was given by T. Frenzel of the University of Hannover and the meeting was completed by J. Rhode of the Federal Office for Information Security (BSI) with his presentation on unwanted electromagnetic radiation and tapping. Some of the presentations may be downloaded from the site of the Correct Power Institute <http://www.cp-institute.de/downloads.htm>. Many of the attendees advised that they received useful information they could use to estimate the threat for their field of work. The EMC Chapter wishes to express its gratitude to Fritz Henze, managing director of the Paderborn airport,



Mr. Sun, the secretary-general of the communication committee in Liaoning province, gave a splendid Chinese calligraphy show during the banquet dinner.



Dr. William A. Radasky gave an ebullient speech and praised the success of the conference during the banquet dinner in China.



Participants of the German EMC Chapter sponsored workshop on "Data Security and Electromagnetic Pulses."



Professor Koch (center) introduces the next speaker at the workshop hosted by the German EMC Chapter, Frank Sabath of WIS (far left).



Break time during the workshop in Germany.



Break time during the workshop in Germany.

for supporting the meeting and providing rooms and technical equipment. The German IEEE EMC Chapter also held a workshop at the University of Hannover on July 25. The goal of the presentations was to introduce students of electrical engineering to the applications of FEM software in academia and industry. Twenty participants attended this one-day event. The technical program was organized by Professor Michael Koch of the University of Hanover,

who is responsible for the technical activities in the German EMC Chapter. Professor Koch opened the meeting with a welcome to the participants and the speakers. Three lectures were given at the successful workshop. M. Eng. Robert Banjac of COMSOL Germany opened the sequence of presentations with an "Introduction to COMSOL Multiphysics." The second speaker was Dipl.-Ing. Daniel Detsch of the University of Hannover who concentrated on the edu-

ationally undergraduates, advised that they received a lot of information they could use to estimate the importance of such simulation tools for their professional work now and in the future. The EMC Chapter wishes to express its gratitude to Professor Koch for organizing the meeting and providing rooms and technical equipment and to Dr. Bernhard Fluche, CEO of the German branch of COMSOL AB, for supporting the meeting.



Professor Michael Koch and Dipl.-Ing. Daniel Detsch of the University of Hannover; Dipl.-Ing. Ulrike Siemer of Volkswagen AG and MSc Robert Banjac of COMSOL Germany (from left to right standing) are shown at the July 25 workshop organized by the German EMC Chapter.

educational aspects of numerical simulations in his talk "Finite Element Analysis for Undergraduates." The series of lectures was concluded by Dipl.-Ing. Ulrike Siemer of Volkswagen AG who provided an interesting insight into the applications of FEM software in the automobile industry in her presentation "Industrial Applications of Finite Elements." Many of the attendees, espe-

Hong Kong

The Hong Kong Chapter is planning to hold its inaugural meeting in December 2006 to celebrate the formation of their Chapter. Hong Kong was successful in petitioning the necessary signatures from current EMC-S members in Hong Kong and being accepted as a new EMC Chapter by IEEE. Currently, there are about 20 members in the EMC-S in Hong Kong. However, the Chapter is hoping to increase membership steadily by attracting those currently working in the EMC testing and design industry. Dr. Peter S. W. Leung, the founding member



Dr. Peter Leung, founding member of the new Hong Kong EMC Society Chapter.



Tom Sertic makes a point during his presentation on traveling wave tube amplifiers to the Huntsville Chapter.



The registration table was a busy but efficient place during the Huntsville Chapter's first colloquium.



Daryl Gerke explains the mysteries of grounding to a packed house at a Huntsville Chapter meeting.



Past Chapter Chair Paul Stover (right) welcomes Dr. Clayton Paul to Huntsville.



Chapter Chair Tom Perry (right) assists Ed Worley with registration during the Huntsville colloquium.



Dr. Clayton Paul is shown speaking to a full house in Huntsville.

of the Chapter, said it is exciting to see the formation of the Chapter. He adds that the new EMC Chapter will provide a good forum for more exchanges and EMC activities in Hong Kong. Dr. Leung is also thankful for the encouragement from the EMC-S officials during the formation process of the EMC-S Chapter. Dr. Peter Leung earned his PhD from the City University of London in 1981 and is now an Associate Professor in the City University of

Hong Kong. He is a core team member of the Applied Electromagnetics Laboratory and the Wireless Communication Research Center (<http://www.cityu.edu.hk/cityu/research/wrcr.htm>) of the City University of Hong Kong. Dr. Leung is actively involved in many EMC consultancy projects assisting the industry, both in Hong Kong and overseas, solving EMC/EMI problems. He is also a Director of the Electromagnetic Compatibility (EMC) Consulting Group of City U

Professional Services Ltd, City University of Hong Kong. In addition, he is the EMC test accreditation technical assessor in Hong Kong, and the Programme Leader of the MScEIE programme. He also teaches an EMC course for the programme.

Huntsville

Glenn Shelby, EMC Chapter Chair, reports that the Huntsville Chapter has



Michael Lehman of ETL-Semko discusses EMC testing with an interested attendee during the Huntsville colloquium.



Samuel McElroy (left) and Al Standiford (right) lead the charge on the lunch buffet during the Huntsville colloquium.

had a very successful and busy year. Three monthly technical meetings have been held with an average attendance of 28 people. The Chapter held its first one-day EMC colloquium in July with Dr. Clayton Paul that exceeded all expectations. Ken Javor kicked off the year with a presentation on January 12 entitled, "Radiated Electric Field Control." It was a very informative talk on proposed updates to the MIL-STD-461E standard with regards to electric field measurements in the high frequency (HF) range.

The 41-inch rod antenna is a high impedance antenna originally simulating the high impedance antenna lead-in wire of World War II type aircraft. All of these aircraft are gone, along with the receivers to which the antennas were connected. The rod antenna remains a part of MIL-STD-461 testing because high impedance HF antennas are still used on some aircraft. Alternate measurement techniques below 30 MHz are being considered for the standard revision based on the various types of HF

antennas in use today. 21 people attended and the catered meal was sponsored by ERC, Inc. On February 9, Tom Sertic of CPI presented a talk entitled "Introduction to the TWT." The basics of traveling wave tube (TWT) amplifier construction and operation were presented in a very practical format. Tom illustrated the ways that TWTs age and how to tell when a TWT is nearing its end of life. TWT maintenance was also presented showing how to get the most out of your TWT amplifier. 26 members and

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The exhibit hall at the Von Braun Center in Huntsville provided a comfortable space for 28 exhibitors and all meals.



Chapter Chair Glenn Shelby (left) thanks Dr. Paul for his generous support of the Huntsville Chapter.



Dr. Paul signs Chris Jaskolka's book while Scott Bridge looks on.



Scott Proffitt (left) presents the ACS Test Lab door prize to Keith Jadus during the Huntsville Colloquium.

guests attended. CPI hosted the catered meal. On March 9, Daryl Gerke, of Kimmel-Gerke Associates, presented a talk on "The Mysteries of Grounding." Daryl was in Huntsville presenting the Kimmel-Gerke three-day EMC seminar and graciously agreed to give up one of his evenings to speak to the Chapter. Daryl was treated to a severe thunderstorm that struck just as he was getting from his car to the building. After drying off, Daryl explained single point, multi point, and

hybrid grounds and provided design guidelines on when and how to use each method. 38 members and guests attended. The catered meal was co-sponsored by Qualis and Jacobs Sverdrup. The Chapter held its first one-day technical symposium and tabletop show on July 11 at the Von Braun Center in Huntsville. The response to this event was phenomenal. The original conference venue capacity of 75 was exceeded within three weeks of registration opening, forcing a venue change to accommodate the event. Dr. Clayton Paul presented his talk "The Fundamentals of EMC" to a crowd of 124 attendees and 28 exhibitors. The exhibit area featured 28 draped 100 square foot booths. An excellent selection of food was served to over 170 people for breakfast, lunch, two breaks, and an evening reception. Dr. Paul graciously signed copies of his

second edition text for the attendees at the evening reception. The exhibitors generously donated over twenty-five door prizes that were given away throughout the day. Many thanks to Dr. Paul for his support of the Huntsville Chapter; the huge response was due to his reputation as having the heart of a teacher and his extensive EMC experience and expertise. The Chapter is indebted to Janet O'Neil for her invaluable guidance on planning for the event. Remember to check out Huntsville EMC Chapter happenings at the Chapter website: <http://ewh.ieee.org/r3/huntsville/emc/>.



Glenn Shelby (left) and Tom Perry (right) present the iPod grand door prize to Dan Frische.

Japan

Professor Youji Kotsuka, Chairman of the Japan Chapter, reports that numerous important Chapter events have taken place over the past year. First, lively Chapter meetings have been held monthly (except in February and August) and many interesting EMC topics have been presented. Most EMC meetings in Japan have been held under the auspices of the EMCJ in IEICE, the IEEE EMC Society Japan Chapter, and

the Sendai EMC Chapter. In these monthly meetings, the average number of papers is 16 for a one-day meeting. The Chapter also introduced a forum in IEICE for young engineers and scientists and gave awards for excellent presentations at these monthly meetings. The awards were evaluated based on the quality of the paper as well as such factors as presentation skill. Japan has two national EMC related conferences, the General Conference in March and Society Conference in September in IEICE. The IEICE General Conference, held at Osaka University in March 2006, was entitled, "The development of Industrial Economy and EMC." Conference organizers were pleased to have an official from the Ministry of Internal Affairs and Communications as one of the guest panelists. The conference was intended to promote "cooperation with the industrial, governments and academic worlds on EMC technologies." In March 2006, the Japan Chapter held an overnight workshop on EMC topics at the Hakone hot springs resort. Presenters at this workshop including professors and engineers from a variety of companies. The workshop focused on "Development of e-Japan 2nd Strategy and EMC Problems." The keynote speaker was an official from MIAC and he touched on what are Japan's present and future policies regarding EMC technology. In the workshop, a large variety of topics were covered such as, "Carbon nanotube application for EMC fields," "Development of RFID tag," "Latest trends of digital terrestrial TV broadcast problems," "Analytical methods of signal integrity," "PLC problems," and "International EMC regulatory trends." Recently, the Japan Chapter is making strides "to open widely a door of EMCJ for every engineer and researcher." Members of the Chapter believe strongly that the future will bring more "fusing together" of technical disciplines. EMC is one area well suited to the idea that various technologies can be merged and fused, resulting in technological expansion far beyond today's limits. EMC technology includes a large variety of research topics, for example, ranging from noise interference problems and immunity technologies etc. to biological effects. Based on the interdisciplinary nature of EMC, Japan Chapter officers came to the conclusion that the EMC Society should have a broad extension not only into research

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topics but also into international relationships that will deepen the understanding of EMC technologies. It was this line of reasoning that motivated the Japan Chapter to form the first Pan-Pacific EMC (PPEMC) meeting in May 2005 at the Awaji Yumebutai International Conference Center, Hyogo, Japan. Distinguished guest speakers were invited, principally from Asian countries. The second annual PPEMC meeting was held in Okayama University in May 2006. In December 2005, the Japan Chapter held a lecture meeting on the topic of biomedical EMC. The meeting was held at the Nagoya Institute of Technology with a number of excellent presentations given by invited speakers. In other Japan Chapter news, the 2006 Richard Schultz Transactions Prize Paper Award was presented to the paper contributed by members of the Sendai EMC Research Center, namely Eiji Suzuki, Satoru Arakawa, Hiroyasu Oota, Kenichi Arai and Risaburo Sato. The paper title was "Optical Magnetic Field Probe Working up to 15GHz Using CdTe Electro-optic Crystals," IEEE EMC-T, Vol. 47, no.2, pp. 344-351, May 2005. Their paper pre-

sented a new type of optical magnetic field probe designed to detect magnetic near-fields with high accuracy up to 15 GHz. The probe consists of a sensing beam and a loop antenna element doubly loaded with CdTe electro-optic crystals. Through an optical technique, the probe can work as a conventional double-loaded loop probe without metallic cables or an electrical hybrid junction. The Japanese EMC Society in the Institute of Electronics, Information and Communication Engineers (IEICE) is excited to be approaching its 30th anniversary! Professor Risaburo Sato, now professor emeritus in Tohoku University, founded the Chapter in 1977. The IEEE EMC Society presented a Chapter Recognition Award to the Japan Chapter at the 2005 IEEE International Symposium on EMC. We would like to continue our effort to enhance EMC technologies through these EMC activities in the future.

Malaysia

The Malaysian AP/MTT/EMC Chapter held a DLP talk by Professor Weng Cho Chew from the University of Illinois,



Participants are shown at the Malaysia EMC Chapter pre-conference tutorial on “Solutions to the Challenging Problems Faced in Designing and Verification of Critical Microwave and RF Components” presented by Dr. Marko Walter.



RFM 2006 Chair, Dr. Zaiki Awang (left), accepted a mock check from the sponsor, Col. John E. Brewer (AFOSR/AOARD) at the opening ceremony in Malaysia.

USA, on “Overview of Computational Electromagnetics: From Very Low Frequency To Ultra Large Scale Problems.” His talk described recent advances in solving Maxwell’s equations for complex structures; from those that are a tiny fraction of a wavelength to those that are ultra large structures involving hundreds of wavelengths. These new approaches use integral equation methods derived from first principle electromagnetics. Professor Chew’s presentation included large-scale simulation examples from scattering, subsurface probing, antennas mounted on cars, and complex structures as encountered in computer circuits and chips. The meeting was held August 21, 2006, in the Electrical Engineering facility at the Universiti Teknologi Mara, Shah Alam, Malaysia. Nearly 50 IEEE members and guests were in attendance. The Chapter also successfully pre-

sented the “International RF and Microwave Conference (RFM 2006),” from September 12-14 at the Palm Garden Hotel, IOI Resort, Putrajaya, Malaysia. The RFM conference is held bi-annually by the Chapter, alternating with the “Asia Pacific Conference on Applied Electromagnetics (APACE).” The co-organizers for the conference were the electrical engineering faculties of the Universiti Teknologi Malaysia, Universiti Teknologi MARA, Kolej Universiti Teknologi Tun Hussein Onn, Kolej Universiti Teknikal Kebangsaan Malaysia, and Universiti Industri Selangor. The conference has now become an important bi-annual event for the microwave industry in Malaysia, as judged by the number of papers presented and the conference attendance. There were nearly 120 papers presented covering topics such as meta-materials to computational methods, and from wireless networks to microwave imaging. The RFM conference was well attended with about 150 participants from 55 organizations. RFM also included three keynote addresses, two pre-conference tutorial sessions, a vendor exhibition and oral presentations in ten technical sessions. The plenary session keynote speeches included “Investigation for the DNG Property of a Novel Type of LHM,” by Professor Qun Wu of Harbin Institute of Technology, China; “Ever Increasing Challenges in the Design and Development of

Leading-Edge Microwave and RF Products at Avago Technologies Penang, Malaysia,” by Dr. Grant A. Ellis of Avago Technologies Malaysia; and “Technologies for RF to Millimeter Wave Circuits” by Professor Shibani K. Koul of Indian Institute of Technology, Delhi, India. The pre-conference tutorials were on “New Unique Electromagnetic Left-Handed Metamaterials and Their Potential RF and Microwave Applications,” given by Professor Qun Wu of Harbin Institute of Technology, China; and “Solutions to the Challenging Problems Faced in Designing and Verification of Critical Microwave and RF Components,” by Dr. Marko Walter from Computer Simulation Technology (CST) GmbH, Germany. A conference dinner was held on the first day of RFM2006. The six best paper awards were presented that evening, including Platinum, Gold, Silver, and Bronze (three awards). Ms. Preeti Sharma, of the Indian Institute of Technology, Delhi, India, received the Best Paper Platinum Award for her paper “Design and Development of Square and Circular Micro-machined Patch Antennas at Ka-band.” The conference organizers wish to acknowledge the support lent by the sponsors, the United States Air Force Office of Scientific Research, Asian Office of Aerospace Research and Development (AFOSR/AOARD) and Computer Simulation Technology of Germany. In addition, the conference organizers also would like to convey appreciation to the exhibitors and researchers who came to share their findings with us. We look forward to and hope to see some of you at next year’s APACE conference, which will be in Malacca, Malaysia.



Professor Qun Wu (left) received a souvenir from Dr. Zaiki Awang for his keynote speech entitled “Investigation for the DNG Property of a Novel Type of LHM” in Malaysia.



Jim Kelly of Cybershield spoke to the Orange County Chapter in September.



Orange County Chapter members, including John O'Brien of WEMS Electronics (foreground), await the beginning of Jim Kelly's presentation in September.

Orange County

Robert Tozier, Chapter Chair, reports that the Orange County Chapter met on September 13 at CKC Laboratories in Brea. Jim Skelly, President of Cybershield, gave an informative presentation on the "Metalization of Plastics." Jim's talk covered the use of conductive coatings for EMI shielding in plastic enclosures. Such shielding can be key in helping a product meet EMC regulations and

ensure reliable device performance with other shielding systems. In addition to reviewing the shielding effectiveness of conductive coatings systems, the presentation included information on design considerations for cost effective utilization of conductive coatings in electronic devices. Mr. Skelly also proposed several current production applications, as well as the impact of new global environmental standards, Reduction of Hazardous

Substances (RoHS) and Waste in Electrical and Electronic Equipment (WEEE) on metalized plastic systems. The Orange County EMC Society election resulted in the following new officers for 2007: Jeff Klinger from Compatible Electronics will be the new Chairman, Jerry Page from Northwest EMC will remain the Secretary and Robert Tozier from CKC Laboratories will take over as Treasurer.

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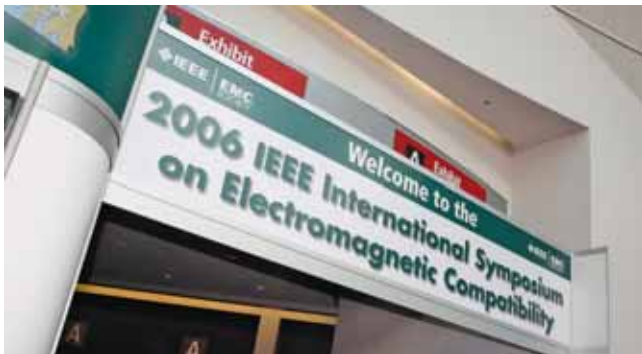


Oregon and Southwest Washington

William Moyer, Chapter Vice Chair, reports that the Oregon and SW Washington Chapter had a very busy spring and summer this year. Their 2006 technical presentation program continued with presentations in April and May at the University of Portland. In April, Professor Aziz Inan of Portland University gave a two-part presentation on "Philip H. Smith and an Introduction to the Smith Chart." Professor Inan's talk covered Phillip Smith's famous invention still in use by RF and microwave designers and researchers today, 66 years after its adoption by the MIT Radiation Laboratory in 1940. Remarkably, this once-classified paper calculator has survived into the digital age, unlike most pre-digital calculator and computer nomograms, and is one of the primary means of displaying impedance matching data on a Vector Network Analyzer. Professor Inan's enthusiasm for his subject and clear admiration for Mr. Smith made for an entertaining and informative presentation, both for those in his audience who have worked with Smith Charts before, and those who had heard of them

but had not until then actually seen them being used. Professor Inan, who obtained his PhD in Electrical Engineering from Stanford University in 1983, taught the subject at a number of schools, prior to joining the EE Faculty at the University of Portland in 1989. He won the University of Portland annual faculty teaching award in 1992, served as Department Chair for six years, and for the last four years has been a full Professor of EE and Computer Science at the University. Professor Inan is the co-author of two electromagnetics textbooks and is a valued member of the Oregon and SW Washington Chapter of the EMC Society. In May, Eugene Mayevskiy gave a presentation on "Modeling of Gigabit Backplanes from Measurements," which discussed some of the signal integrity and EMC challenges faced by designers of Gigabit-speed printed circuit assemblies. His presentation also addressed the need for accurate measurement-based IBIS and SPICE interconnect models in electrically long circuits, in order to accurately simulate effects of frequency-dependent transmission and reflection losses, cross-talk, and signal dispersion to achieve reliable

high-speed digital system designs. Mr. Mayevskiy's presentation also gave an example of one means by which such interconnect models can be generated, using a Vector Network Analyzer and Tektronix IConnect Signal Integrity Software. Mr. Mayevskiy has BSEE and MSEE degrees from Oregon State University, where he did substantial research on modeling and simulation of passive radio frequency integrated circuit devices. In his current position at Tektronix, his responsibilities include product development, training and problem resolution for TDR and VNA measurements, modeling, and SPICE and IBIS circuit simulation. He has published a number of papers and given seminars on measurement-based modeling for high-speed digital design. Following a much-abbreviated version of the Chapter's traditional summer hiatus, the Chapter kicked into high gear by hosting the 2006 IEEE International Symposium on EMC in Portland. With the usual five days of tutorials, workshops, demonstrations, technical presentations, networking opportunities, discounts on select IEEE books, and the temptation of the latest EMC technology in vendor dis-



The entrance to the 2006 Symposium Exhibition Hall at the beautiful Oregon Convention Center in Portland.



Symposium attendees catch-up with EMC colleagues while waiting in line for the Northwest Buffet during the Tuesday Night Welcome Reception.



Mitchell Philippi (at rear on left), Symposium Volunteers Coordinator, catches a rare moment of standing still with several of the hardworking EMC 2006 Volunteers including Chris, Graham, Steve, Vladimir, and Amy.



Brian Harlan of InFocus (left) and Portland Symposium Chair Henry Benitez.



A lighter moment with three chairs (from left): Derick Skouby, Oregon & SW Washington Chapter and Symposium Technical Program Chair; Pat André, Seattle Chapter and Symposium Close Format Presentations Chair; and Henry Benitez, General Symposium Chair.



Hard at work during the Children's Program are Sidney Chan (left), EMC 2006 Secretary, and junior attendees Brian and Emily, who are building a battery powered hydrofoil boat.



Up close and personal at one of the many close format presentations in the exhibition hall during the Portland EMC Symposium.



It was SRO (standing room only) at Clayton Paul's "Rise Time Signal Spectra Effects" demonstration.



The winner of the electric powered bicycle drawing, courtesy of Amplifier Research, was Sidney Chan!

plays, the 2006 Symposium lived up to its theme of "Exploring EMC Frontiers." EMC 2006 also maintained the fine tradition of performing a meaningful and worthwhile annual professional EMC event, vitally important to the health and relevance of the Society. Northwest hospitality was evident at the Welcoming Reception buffet, the Gala banquet, and in the historical displays. The unforgettable entertainment included the electronic spectacle of the Neon Man, and a moving "Corps of Discovery" presentation, covering in words and music the historic Lewis and Clark expedition into the unknown West. Also notable was the Awards Luncheon, which honored the many fine contributors to our profession. The Oregon and SW Washington Chapter would like to thank all who served on the 2006 Symposium Committees: you have our gratitude and congratulations on a job well done. Organizing an international symposium, even with professional help, is no small feat. We all look forward to meeting again next year in Hawaii!

Pittsburgh

The fourth meeting of the newly formed Pittsburgh EMC Society Chapter was conducted on October 12 at the Westinghouse Energy Center in Monroeville, PA. Michael Oliver, IEEE EMC-S Chapter Chair, hosted the meeting with 12 IEEE members. The meeting started with a social hour prior to a technical presentation. We had the privilege of having Ed Nakauchi as our technical speaker; Ed is an EMC consultant with Emulex Corporation. Discussions encompassed the upcoming technical presentation agenda and an introduction of Mr. Ed Nakauchi. The technical presentation by Ed Nakauchi was entitled, "Testing for EMC Compliance: Approaches and Techniques." This presentation is based upon Ed's recently published book of the same name and discusses what to do if your product fails EMC testing. Many books deal with all aspects of EMC product design, but few describe a process in dealing with "troubleshooting". At the beginning, a fundamental review and what causes EMI is followed by a logical step-by-step



Ed Nakauchi provides an excellent presentation on “EMC Compliance Testing” to the Pittsburgh Chapter in October.



Speaker Ed Nakauchi receives a well-deserved plaque of appreciation from Pittsburgh Chapter Chair Mike Oliver (left) in October.

approach in solving the EMI problems, questions to ask, what things can be done, and finally what tools are available to make it easier. About the author: Ed has a BSEE and MSEE from Northrop University and Columbia Pacific University, respectively. He has over 30 years experience beginning with analog, power, and digital design. For the last twenty years, he has spent a majority of his time in the EMI/EMC/EMP and ESD areas for both military/aerospace companies and commercial audio/computer/medical companies. Ed’s consulting projects have included serving as an EMI consultant to the Air Force’s Space and Missile Command on their COTS program. He has written numerous technical papers and magazine articles as well as presented seminars on EMI/EMC/EMP/ESD topics for many companies. He also teaches EMI and electrical engineering courses through the University of California at Irvine extension program. Mr. Nakauchi was the primary author of a shielding design guideline for the Army. He has also worked on many RF projects including the CASSPER system, an innovative correlation analyzer. Some of the past projects that he has worked on include the



Mike Francis, Don Bodnar, John Norgard (seated from left) Randy Musselman, Vince Rodriguez, Chris Holloway, and Matt Aschenberg (standing from left) made up a powerhouse speaking team at the Rocky Mountain Chapter’s July 21 colloquium, co-sponsored by the Antenna Measurement Techniques Association.

Space Shuttle, Global Positioning Satellite, Splash Mountain/Rocket Rods for Disneyland, submarines, and the B-2 Bomber. Most recently, he worked for Instrument Specialties/Laird Technologies as a principal scientist. He is a NARTE Certified EMC/ESD Engineer with senior membership in the IEEE and is currently a consultant to G&M Compliance, a regulatory compliance

company. On behalf of all of us in Pittsburgh, PA, “thank you Ed Nakauchi for your contribution to our EMC-S Pittsburgh Chapter!”

Rocky Mountain

Monrad Monsen, Chapter Vice-Chair, reports that the Rocky Mountain Chapter of the EMC Society (RMCEMC) held



Dr. Hockanson during his July 18 presentation to the Rocky Mountain EMC Chapter.



Janet O’Neil, EMC Society Board Member, and Matt Aschenberg, Rocky Mountain Chapter Chairman, provide attendees with introductions and orientation at the Chapter’s July 21 colloquium.

DENVER PHOTOS COURTESY OF MONRAD MONSEN



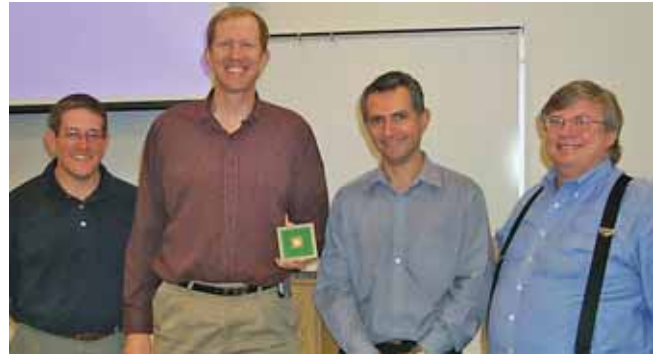
Richard LeJeune and Jeannie Franz of Technical Marketing Specialists celebrate the success of the Rocky Mountain Chapter's colloquium over dessert with John Norgard (right) of the University of Colorado – Colorado Springs.



Richard Georgerian was happy to take photos in the tabletop exhibit area for the Rocky Mountain Chapter during their July colloquium.



During the September meeting of the Rocky Mountain Chapter, Mr. William Kimmel (on right) fields some end of session questions. Chapter Vice Chairman Monrad Monsen (on left) serves as facilitator.



At the Rocky Mountain Chapter meeting in September (from left to right), Chapter Chairman Mat Aschenberg, Chapter Vice Chairman Monrad Monsen (holding a sample integrated circuit), Distinguished Lecturer Dr. Etienne Sicard, and Chapter Secretary Larry Ernst.

two exciting events in Denver over the summer. On July 18, Dr. David Hockanson (IEEE EMC-S Distinguished Lecturer) presented "CSI: Compliance System Investigation" in which he provided a systematic methodology along with the tools needed to quickly solve radiated emissions issues that may arise in testing. On July 21, RMCEMC partnered with the Antenna Measurement Techniques Association (AMTA) to have a Denver 2006 Colloquium on "Practical Measurement Techniques and Facilities for RF Testing." Speakers included industry experts Mike Francis and Chris Holloway of NIST, John Norgard of the University of Colorado at Colorado Springs, Mat Aschenberg of HID Corporation, Randy Musselman of the US Air Force Academy, Vince Rodriguez of ETS-Lindgren, and Don Bodnar of MI Technologies. The Colloquium ran all day and included a great lunch at the Radisson Greystone Castle in Denver. Then RMCEMC kicked off their fall schedule with two excellent meetings in September. On September 11, Mr.

William Kimmel (Kimmel Gerke Associates) spoke to the Chapter on "The Hidden Schematic." On September 21, Dr. Etienne Sicard PhD (IEEE EMC-S Distinguished Lecturer) spoke to the Chapter on "Improvements in IC Design for Electromagnetic Compatibility and Signal Integrity." We look forward to the October 17 meeting when the Denver FCC Branch Chief will bring out their Mobile Digital Direction Finding (MDDF) van for tours and will discuss FCC enforcement issues. Truly, this has been a great year for the RMCEMC Chapter, and we look forward to more events in the future.

SE Michigan

In July, the Southeastern Michigan IEEE EMC chapter was fortunate to be visited by the Tech Team tour organized for the Detroit area by Janet O'Neil of ETS-Lindgren and Mark Steffka of the University of Michigan Dearborn and GM. The free seminar sponsored by Conformity, ETS-Lindgren, Rohde & Schwarz,

the University of Michigan Dearborn, and the local chapter, on "The Latest in Automotive EMC Test Techniques and Test Laboratory Verification/Correlation" featured speakers Vince Rodriguez of ETS-Lindgren, James Young of Rohde & Schwarz, Hans Peter Bauer of Rohde & Schwarz, and Kimball Williams of Denso International America with Mark Steffka of the University of Michigan Dearborn and GM as the moderator. Closing the program was a panel of automotive EMC experts to review verification and correlation requirements for AEMCLAP and answer questions from the audience. Panel participants included the aforementioned experts plus Keith Frazier from Ford, Terry North from DaimlerChrysler, and Larry Banasky from GM. Presentations covered the GTEM Testing Methodology for ICs by Dr. Rodriguez. This presentation covered simulation and test methods in a GTEM and gave ideas on how a GTEM could lower test costs for users. James Young discussed CISPR 25 testing using a time domain (FFT) based

test instrument. Mr. Young showed how time domain testing instruments could greatly speed up testing for peak and average measurements. Dr. Hans Peter Bauer gave a discourse on 600 volt per meter reverb systems using his real world experiences, with test data to explain some of the pitfalls and benefits of the systems. Kimball Williams wound up the presentations with a pre-

sentation on "Verification Testing for the EMC Laboratory" and an announcement of the IEEE Southeastern Michigan EMC Chapter Inter Laboratory Correlation Task Force. Mr. Williams explained how the Inter Laboratory Correlation Task Force would allow labs to meet round robin test requirements for A2LA and AEM-CLRP. The panel of experts question

and answer session was very spirited with even the panel asking some of the questions. Technical answers by Dr. Hans Peter Bauer on the 600-volt per meter tests were quite informative to those struggling to meet this requirement. The free seminar was beneficial to all of the participants and we look forward to it coming again to Detroit next year. EMC



Earl Morse and Keith Frazier of Ford Motor Company, Don Seyerle of GM, and Charlie Lu of the Nissan Technical Center North America (from left) attended the Tech Tour for the SE Michigan Chapter on July 18.



Martha Hallman of ETS-Lindgren joined SE Michigan Chapter Chair Scott Lytle of Yazaki North America, Phil Dew of Delta Technology Solutions, and Jim Muccioli of X2Y Attenuators (from left) for the July Tech Tour.



The room at the University of Michigan's Fairlane Center was near capacity for Kimball Williams of Denso International America's Tech Tour presentation to the SE Michigan Chapter.



Long time colleagues and "automotive EMC movers and shakers" Bill Sperber (retired from GM, left) and Poul Andersen (retired from Daimler-Chrysler) enjoyed some downtime following the Tech Tour in SE Michigan.



Speakers and panel experts in SE Michigan included (front row from left) Terry North of DaimlerChrysler; Larry Banasky of GM, Keith Frazier of Ford, and Dr. Shridhar of the University of Michigan Dearborn, (second row from left) Kimball Williams of Denso International America, Vince Rodriguez of ETS-Lindgren, James Young and Hans Peter Bauer of Rohde & Schwarz, and Scott Lytle of Yazaki North America. Mark Steffka of the University of Michigan Dearborn and GM is shown presiding over all the activity at the top of this photo.

PHOTOS BY JANET ONEIL