Chapter Chatter

Gabe Alcala, Associate Editor

Welcome to Chapter Chatter! This is my first issue as the new Associate Editor of this column and I would like to first thank the immediate past Associate Editor, Dennis Lewis, for five years of contributions to Chapter Chatter and for his continued growth in the EMC Society as our VP of Conference Services. For those who may not know me, I am an IEEE EMC Chapter Chair (San Diego) myself, and passionate about organizing EMC events and giving back to the profession. I am excited that I get to help share the stories of events organized by the 80 plus Chapters of the EMC Society, spread all over the globe.

In addition, I hope you all can attend the upcoming IEEE EMC+SIPI Symposium (July 27-31, 2020) in Reno, Nevada!

Chicago

On December 11, 2019, the Chicago Chapter celebrated another decade of service with its annual Holiday Party, a family-style feast at a favorite restaurant, Maggiano's Little Italy in Schaumburg. Treasurer Ray Klouda ran the "What Do You Know?" Holiday Quiz while Chapter Chair Jack Black handed out the prizes. Ida Krozel and Joanne Meyerhoff, spouses of officers Frank and Jerry, organized the venue arrangements and table favors. Members and guests really enjoyed the opportunity to socialize over the appetizers, meal and desserts.

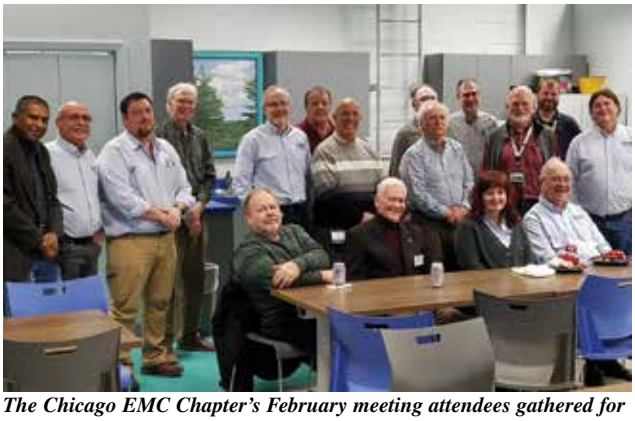
On February 19, we opened 2020 with "Basic Parameters of the Normalized Site Attenuation (NSA) Method for Open Area Test Sites (OATS) and Semi Anechoic Chambers (SAC)". Presenter Lou Feudi of Raymond EMC has over 37 years of experience in the compliance testing industry. He has authored articles for Compliance Engineering and In Compliance. Lou discussed CISPR 16-1-4 in the 30 MHz to 1 GHz range and qualifications for OATS versus SAC or FAR as well as NSA. Raymond EMC also sponsored the refreshments and dinner while Elite Electronic Engineering in Downers Grove provided the meeting space.

Our annual St. Patrick's Day meeting at Elite on March 24 will feature the topic "5G Cellular: Technology and Applications that will Change our Engineering Lives" by

The Chicago EMC Chapter held their annual holiday party to celebrate another great year of Chapter activities.

Chicago EMC Chapter Chair Jack Black (left) and Ray Klouda confer on the Holiday Party Quiz results.

The winner of the Chicago EMC Chapter's Holiday Party Quiz was Joanne Barfuss!



The Chicago EMC Chapter's February meeting attendees gathered for a group photo at Elite Electronic Engineering.

Craig Fanning (left) presents a speaker's plaque to Lou Feudi following his presentation at the February Chicago EMC Chapter meeting.

Farid Jamialahmadi from Würth Electronics presented "Ferrites Fundamentals" during the Kitchener-Waterloo EMC/MAG Joint Chapter technical event.

speakers Anu Mutluru of Nokia and Kenn Miller of Hub88.

Frank Krozel reports the 23rd Annual Mini-Symposium on May 12 will have three exceptional speakers. Bogdan Adamczyk, Professor and Director of Grand Valley State University EMC Center, will present with Scott Mee and Jim Teune, co-founders of E3 Compliance. There will be over 20 exhibitors of EMC products and services. For more information, see http://www.emc-chicago.org/sectfiles/events.htm

Kitchener-Waterloo

On October 24, 2019, the Kitchener-Waterloo Section EMC/MAG Joint Chapter co-hosted a one-day technical event "Tips and Tricks for Product Design and Compliance" with Würth Electronics Canada at the Christie Digital Systems Canada office. The event covered topics from ferrites fundamentals, wireless radio approval, and design for compliance to SI/EMI simulation addressed in the IEEE EMC Society Distinguished Lecture Power Integrity talk. Farid Jamialahmadi from Würth Electronics presented "Ferrites Fundamentals" which included a review of ferrite materials, ferrite bead loss, and common mode filters. Majid Ostad Rahimi from SimuTech gave the audience an overview of EMC simulation and some demos of EMC simulation cases. IEEE EMC Society Distinguished Lecturer, Ihsan Erdin, presented the last session on "Fundamentals and Recent Advances in Power Integrity". During the session, Ihsan provided an overview of power integrity challenges, which was the long lead-time of capacitors. That was why proper capacitor value selection and capacitor location placement are so critical. He then explained his study on the capacitor location selection and the effect on the PDN impedance plots. There were some interactive questions and answers at the end of the session.

The full day event was well attended by more than 40 professionals from industry. A BIG thank you to Würth Canada who sponsored this technical event and Christie Digital Systems Canada for hosting the event at their facility!

Melbourne

The Melbourne, Florida EMC Chapter kicked off the New Year at Element Test Lab with a presentation on "Antenna Design Efficiencies." John Mertel from SteppIR introduced novel technological advances that have made it possible to address the issues, primarily within the 30 MHz-100 MHz range, in MIL-STD-461G. The SY3-EMC system from

Majid Ostad Rahimi from SimuTech presented an EMC simulation overview during the Kitchener-Waterloo technical event on October 24, 2019.

IEEE EMC Society Distinguished Lecturer, Ihsan Erdin, presented "Fundamentals and Recent Advances in Power Integrity" during the Kitchener-Waterloo technical event.

John Mertel from SteppIR and attendees of the January EMC Chapter meeting at Element Test Lab in Melbourne, Florida.

SteppIR incorporates a mechanically tuned, optimized Yagi antenna with a groundbreaking auto-tuning algorithm. With the SY3-EMC antenna system, it is now possible to achieve the 200 V/m requirements of MIL-STD-461G, legitimately 1 meter away from the EUT and from the fundamental frequency. The professionals from SteppIR demonstrated the capability of their SY3-EMC system using one of Element's brand new anechoic chambers! The Chapter is also planning to host another meeting in March, with a presentation by Professor Marcos Rubinstein, a Distinguished Lecturer, presenting on the topic of "The Lightning Phenomenon". We want to welcome Melbourne's newly elected Chapter Chair, Mary Cwikls.

Phoenix

The Phoenix Chapter of the IEEE EMC Society opened the 2020 calendar year with a meeting on January 14 at Compliance Testing, in Mesa, AZ. Thirty-six people attended the meeting. The evening started at 5:30 pm with a social gathering and dinner, followed by opening announcements and Chapter business directed by Glen Gassaway, Chapter Chair. This was followed by the usual around-the-room introductions, including the companies that are hiring and individuals looking for work. The introductions were followed by a presentation titled "EMC Simulation of Cables, Aerospace and Automotive Applications" presented by Tim McDonald and a second presentation titled "Utilization of Simulation and Modeling for Risk and Cost Reduction across Programs for Lightning" by Justin McKennon. Both men are from Electro Magnetic Applications, Inc. (EMA), located in Lakewood, CO. Tim is the president of EMA and holds a MS in electrical engineering. Justin is a principal scientist at EMA. As interfacing signals entering and exiting boxes become faster and more sensitive, the need for the EMC engineer to protect them becomes more prevalent and the protection options harder to implement. The need for accurate modeling of cable threats as a design mitigator for both cost and approach is becoming even more necessary. As such, this presentation was very appropriate and well received. Tim provided a good introduction into high-end computer modeling and simulation of time domain threats, how it is approached, and how it can save costly time and redesign issues by providing accuracy early in the design. Justin gave a good overview of all the complexities and issues that arise in setting up a simulation model. The big take away is that a good protection approach is still a hybrid process requiring both modeling and testing to provide the desired result. After the presentation, Glen Gassaway thanked Tim McDonald and Justin McKennon for their interesting presentations! The meeting adjourned at 8:35 pm. We are grateful to Compliance Labs in Mesa, AZ for hosting and providing their facilities for this event.

On February 19, 2020, the Phoenix EMC Chapter hosted Professor Marcos Rubinstein at Compliance Testing Labs in Mesa,

PHOENIX PHOTOS BY SHWEZIN WINKO

A full house was present at the January 2020 Phoenix EMC Chapter meeting at Compliance Labs in Mesa, Arizona.

Phoenix Chapter Chair Glen Gassaway thanks speakers Tim McDonald (center) and Justin McKennon (far left) of EMA for their fine presentations.

The Phoenix Chapter had another full house at the February meeting with EMC Society Distinguished Lecturer Marcos Rubinstein.

Glen Gassaway (right) presents an "Arizona Highways" calendar to Professor Marcos Rubinstein as a thank you for his excellent presentation at the February Phoenix EMC Chapter meeting.

AZ. Professor Rubinstein gave a lecture on "The Lightning Phenomenon". In attendance were 32 engineers and technologists in the electrical, RF, EMC, and power supply engineering disciplines. The audience consisted of retirees, consultants and actively working professionals. A social hour started at 5:30 pm where Professor Rubinstein was very friendly and greeted those who were able to come early. The meeting itself began a little before 7:00 pm, with Glen Gassaway (our Chapter Chair) discussing Chapter business. Glen talked about our upcoming officer's election, the upcoming 2020 IEEE EMC Symposium in Reno, and the upcoming 2024 Symposium in Phoenix. We then began the usual around-the-room introductions, including the companies that are hiring and individuals looking for work. There are several companies looking for EMI professionals in the Phoenix area.

Professor Rubinstein discussed what lightning is, how the parameters of lightning are measured and how lightning is detected for study. He discussed four types of lighting and how they are generated as well as how they propagate. To measure lighting, scientists use both homemade E-field and H-field antennas attached to oscilloscopes and other measuring devices. Multiple arrays of the antennas are used in an area to triangulate the exact location of the transient. To increase the odds of getting consistent measurement opportunities, the scientists setup studies at radio towers, wind turbines and man-made towers; however, they also artificially trigger lightning transients through rockets and lasers.

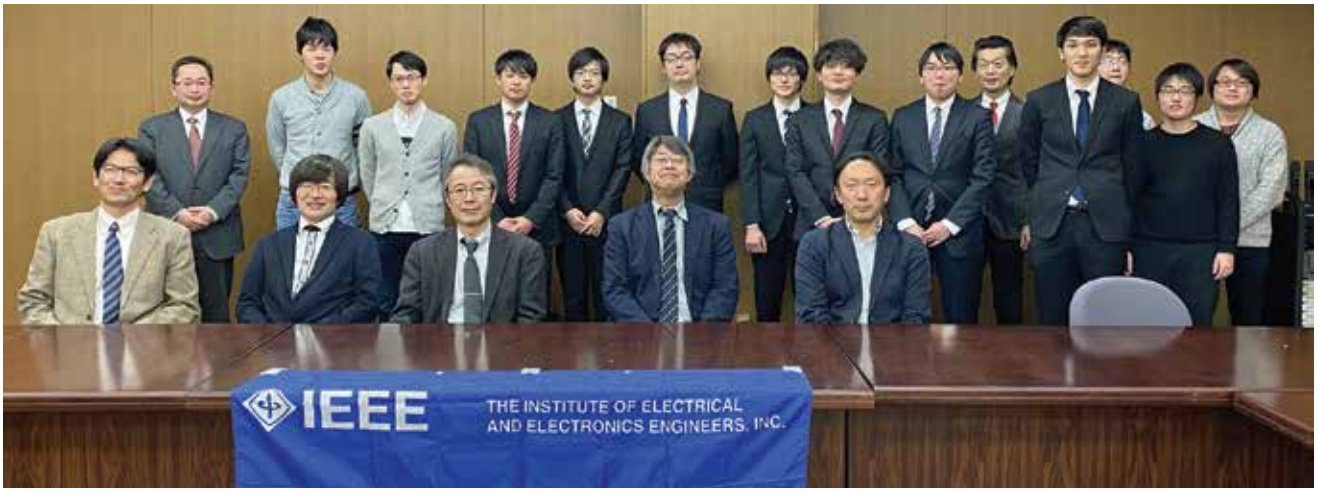
The lecture was well received and generated numerous questions that Professor Rubinstein gladly answered. He was able to capture and maintain the attention of the audience through a well put together presentation and great sense of humor. The meeting ended at 8:30 pm. We are grateful to Compliance Labs in Mesa, AZ for hosting and providing their facilities for this event. Please note all Phoenix photos accompanying this summary were taken by Shwezin Winko.

San Diego

The San Diego EMC Chapter held its first event of 2020 on January 14 at Advanced Test Equipment Corp; it was a joint meeting with the local Product Safety Engineering Society Chapter. The speaker was Mr. Gabe Alcala of Advanced Test Equipment Corp. and his discussion was titled "Introduction to RF Safety Testing (w/ 5G NR Update)". It was a full house with about 55 attendees. The Chapter is hoping to have regular meetings thought the year with the hope of also bringing in a few EMC Society Distinguished Lecturers.

Sendai

Students of the IEEE EMC Society Sendai Chapter attended a Sendai Seminar on EMC on Thursday, February 20, 2020. The seminar was organized with the Research Institute of Electrical Communication, Tohoku University and was held at the Cyber Science Center of Tohoku University in Sendai, Japan. Prof. Ishigami, IEEE EMC



Students in the EMC Sendai Chapter attended a seminar on Tuesday, February 20, 2020 at the Cyber Science Center of Tohoku University in Sendai, Japan.

Society Sendai Chapter Chair, opened the event and provided a welcome. Ten students from different Universities/Institutes (Tohoku University, Tohoku Gakuin University, Akita Prefectural University, and Nara Institute of Science and Technology) in the Tohoku area presented their studies, such as security of information leakage, ESD, antenna, signal analysis, PCB, etc. Twenty-five participants attended this meeting. It was a very good opportunity to get to know each other and exchange experiences.

Southeastern Michigan

Louis Feudi from Raymond EMC braved the Michigan winter to present, "Basic Parameters of the Normalized Site Attenuation (NSA) Method for Open Area Test Sites (OATS) and Semi Anechoic Chambers (SAC) in CISPR 16-1-4 for EMC Testing" to the Southeastern Michigan EMC Chapter on January 16, 2020. We met at the area's largest maker space, I3 Detroit. Louis explained some of the new standards for site attenuation. This presentation gave us an understanding of the requirements for qualification of either an Open Area Test Site or Semi Anechoic chamber, for measurement of radiated disturbances in the frequency range of 30 MHz to 1 GHz. This is referred to as Normalized Site Attenuation or NSA testing, as described in CISPR 16-1-4. Louis explained how the open area test site (OATS) compares to SAC and FAR chambers. If you are interested in more details, check out Louis's article in In Compliance magazine!

Turkey

The Turkey AP/MTT/EMC/ED Chapter ended 2019 with four activities. The experts in their respective fields on magnetic resonance imaging, nano-plasmonic applications in biomedicine, star tracker systems, and deep learning as follows gave technical seminars:

6 December 2019
Speaker: Asst. Prof. Emine Ülkü Sarıtaş, Bilkent University
Topic: "Magnetic Particle Imaging for Radiation-Free Functional Imaging"

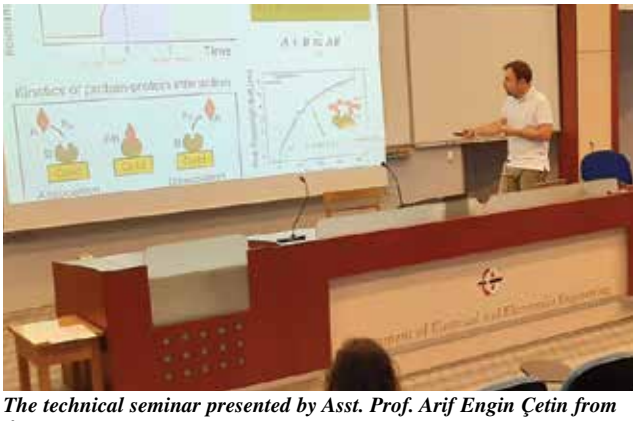
13 December 2019
Speaker: Asst. Prof. Arif Engin Çetin,İzmir Biomedicine and Genome Center
Topic: "The Use of Optics and Nano-Plasmonics for Point-of-Care Analysis in Resource-Poor Settings"

20 December 2019
Speaker: Dr. Engin Tola, Aurvis R&D
Topic: "The Design and Development of a Self-Calibrating Star Tracker System"

27 December 2019
Speaker: Asst. Prof. Cem Tekin, Bilkent University
Topic: "Exploration and Exploitation in Complex Domains: Learning with Multiple Objectives and Contexts"

The year 2019 was a productive year for the Chapter that organized 19 technical seminars, two professional seminars, as well as four talks by Distinguished Lecturers of the AP Society and MTT Society. The Chapter was also a technical sponsor of a local workshop "BEYOND 2019: Computational Science and Engineering Conference" organized at the Middle East Technical University, Ankara, Turkey. More information (photographs, YouTube links, etc.) on the past events, as well as the program for the upcoming activities, can be found on the Chapter website: http://aeme.ieee.metu.edu.tr **EMC**

The technical seminar presented by Asst. Prof. Emine Ülkü Sarıtaş from Bilkent University.



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