

02 Message from the Chairman



IEEE CTS Chairman

Fawzi Behmann

January was a busy month as the section, chapters, affinity groups, and student branches got together in an annual meeting sharing the achievement and the success of 2018 and planning for 2019. More quality and intriguing topics are planned for monthly meetings, the opportunity for technical tours, special focused events on technology and applications, student conference and supporting other IEEE events in the area.

04 IEEE Member Development

HAVE YOU RENEWED YOUR IEEE MEMBERSHIP FOR 2019?

It is easy to forget and easy to put off. If you haven't renewed your IEEE membership, or don't know if you have, go to www.ieee.org/renew NOW and find out or simply call 800 678-4333.

Renew NOW to avoid loss of any of your IEEE benefits.

If you have already renewed, thank you for being part of the Central Texas Section and the IEEE, the world's largest technical professional association. We have a lot planned for you in the CTS for 2019.

Visit www.ieee.org/membership to view all YOUR benefits of IEEE membership.

05 IEEE Texas Technical Tour - 2019

Planning ahead, an IEEE Texas Technical Tour is being organized by the San Antonio Life Member Affinity Group (LMAG) of the Central Texas Section and Region 5.

06 IEEE CTS EVENTS

Come and see our section events.



Message from CTS Chairman

Chairman, IEEE Central Texas Section

Fawzi Behmann

f.behmann@ieee.org

A. 2019 Special Events

The current plan is to initiate and organize three events focusing on technology and applications. The events are aimed at presenting and discussing technical trends (e.g., IoT, 5G, virtualization, AI/ML/DL, cybersecurity) and use cases aimed at building smart solutions for our communities and cities.

If you like to be a part of these initiatives, then please send an email:

Subject: 2019 Special Events

To: f.behmann@ieee.org

B. February 2019 Meetings, and Tech Tours Exciting Plans for 2019

Please consult the remaining part of this newsletter and consult the calendar of events at the section website <http://sites.ieee.org/ctx/>

Among the topics of interest:

- IEEE PI2 Austin, Tour of Therman in San Marcos, Feb. 5, 6-8:30 pm
- IEEE LIFE Member Austin, topic "TAX Update and Market Intelligence for Investors," Feb. 19, 6-9pm
- IEEE Computer Chapter, San Antonio, topic "Emerging Non-Volatile Memory for Neuromorphic Computing," Feb. 19, 7-8:30pm
- LIFE Member, San Antonio, topic "Research for Nuclear Powered Ramjet Missile," 11:30am – 1:00pm
- IEEE ComSoc/SP & Computer/EMBS Austin, topic "AIOT (Artificial Intelligence of Things), Feb. 21, 6-8pm
- IEEE CAS/SSC Austin, topic "Design of Synthesizable Digital PLL," Feb. 25
- IEEE PI2 Austin, topic "ANTICIPATING POWER LINE PROBLEMS," Feb 26

C. BDYHAX 2019- Human Augmentation, Bodyhacking, and Biohacking Conference, February 23-24

Location: LZR, 612 West 4th Street, Austin, TX 78701

BDYHAX is back in Austin for our fourth year of making human augmentation accessible. Meet and collaborate with other bio hackers, tech enthusiasts, and experimenters throughout the conference and dance at The Wormhole, our Saturday night celebration of cyberpunk and science fiction.

Enjoy 2 days of talks and workshops from national and international speakers on wearable and implantable tech, brain computer interfaces, prosthetics, gene therapy, bioethics, cyborg art, and the newest research in human body oriented technology. Don't miss The Hub, featuring expo booths, product demos, and other great stuff.

The conference includes talks from Open Bionics UK Samantha Payne, group flow and consciousness hacker Mikey Siegel, as well as other talks on living with critical implanted medical technology and implanted computers.

For details, visit

<https://www.eventbrite.com/e/bdyhax-2019-human-augmentation-bodyhacking-and-biohacking-conference-tickets-48895632152>

D. February 2019 Meetings, and Tech Tours Exciting Plans for 2019

2019 Green Technologies Conference

April 3-6, 2019

DoubleTree by Hilton Lafayette

1521 W Pinhook Rd
Lafayette, LA, 70503-3158

BOOK YOUR DISCOUNTED ROOM

Hotel Discount rate expires March 20



The IEEE Green Technologies Conference (IEEE GreenTech) was conceived to address one of the most pressing challenges of our time – How do we provide the reliable energy demanded by an environmentally sensitive world using energy resources in a sustainable and environmentally responsible manner.

Green and clean energy sources added to energy mix do provide challenges to the energy grid operators requiring active management of the available energy sources to provide a resilient power grid. The 11th Annual IEEE Green Technology Conference hopes is to draw insights and encourage collaboration from the many disciplines and the industrial collaborators required to address these challenges. The conference will be held at DoubleTree by Hilton that offers complimentary self-parking and is close by the Lafayette Airport using complimentary bus service.

Registration is now open <https://ieeegreentech.org/registration/>

For any inquiries, please contact d.pierce@ieee.org, General Chair

E. 2019 IEEE Women in Engineering International Leadership Conference (WIE ILC), May 23-24, Austin

We are pleased to announce that WIE ILC conference will be held this year in downtown Austin.

Date: May 23-24, 2019

Location: JW Marriott, Austin, Texas, United States

With a focus on mid-to-senior, technology professionals, IEEE WIE ILC brings together female and male STEM leaders from around the world interested in advancing women leaders. IEEE WIE ILC provides an incredible opportunity for your organization to develop your technical staff, recruit professionals and support women in engineering and technology.

Exhibiting organizations have the ability to showcase their leading-edge technology. Prominent industry leader presentations will inspire IEEE WIE ILC attendees, who will have the opportunity to create communities that fuel innovation, facilitate knowledge sharing and provide support. Sign up today for one of the many opportunities or contact us to discuss a package customized to your company's needs!

[Partnership Prospectus Link](#)

Conference Registration is now open: [Attendees & General Registration Homepage Link](#)

e-mail: partners@ieee-wie-ilc.org

General inquiry: contact@ieee-wie-ilc.org

F. We'd like to hear from you

If you have an idea, suggestion, question or you like to volunteer, then please send an email to Fawzi Behmann, Chair, at f.behmann@ieee.org.

Thank You,

Fawzi Behmann



Member Development

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IEEE Professional Development Webinars

The IEEE Young Professional Program regularly invites IEEE members to attend quarterly Professional Development Webinars.

These webinars cover many of the important targeted to the young professional member. Past topics include Project Management, Engineering for Change, and Scientific writing, to name a few. Past Webinars have been recorded and are ready for viewing at any time through your MyIEEE account.

Go to [Young Professional Webinars](#) for a list of past webinars and for a schedule of what's to come.

IEEE Member Discounts – Have you see what's available now?

IEEE members can access more savings in more places for home and office including group discounts on insurance, travel, home/office and technology needs. While you focus on your career, we'll take care of saving you money. See vendor details for terms, conditions and availability.

Visit the Member Discounts page at www.ieee.org/discounts to discover this added perk of IEEE Membership.

Joe Redfield
CTS Membership Development Chair
J.Redfield@ieee.org
210-744-2968

IEEE Texas Technical Tour - 2019

Planning ahead, an IEEE Texas Technical Tour is being organized by the San Antonio Life Member Affinity Group (LMAG) of the Central Texas Section and Region 5.

Registration: <http://sites.ieee.org/ieee-tx-technical-tour/>

vTools: <https://events.vtools.ieee.org/m/178799>

Questions: s.atkinson@ieee.org

Texas is the home to a number of centers of technical excellence of national importance, as well as several key IEEE historical awards including Milestones celebrating technological breakthroughs or turning points. These will form the basis for a number of technology-oriented visits throughout Texas organized by the San Antonio Life Member Affinity Group (LMAG) of the Central Texas Section, Region 5 of IEEE.



The Tour, limited to 50 guests, is scheduled for mid Oct 2019 and will consist of a 10-day bus tour to significant technical sites planned in Houston, San Antonio, Austin, Waco and Dallas. Cultural and historical sites will also be included along with many social events with local IEEE members. Most meals, plus all transportation, entrance fees and gratuities are included in one price per person.

Cities:

- HOUSTON, TX
- SAN ANTONIO, TX
- AUSTIN, TX
- WACO, TX
- DALLAS, TX

We have vTools registration is now officially open.

Please check vTools registration Link <https://events.vtools.ieee.org/m/178799>

Questions should be referred to me at s.atkinson@ieee.org.

IEEE CTS FEBRUARY 2019 EVENTS

5 IEEE PI2 Austin, Tour of Thermon

Time: 6:00 pm - 8:30 pm -- **MORE INFO AND REGISTRATION:** <https://events.vtools.ieee.org/m/187455>

Agenda:

6:00 – Arrival and barbeque dinner by Thermon
 6:30: Welcome / Introductions / Overview of Thermon
 7:15: Tour

RSVP's are greatly appreciated so that we have an accurate headcount and can notify you about updates to the tour. Enter the facility's main entrance (has a corporate logo near street and flag poles), we'll start in the second building on your right (the marketing building).

Thermon is graciously providing a free barbeque dinner to all attendees, don't be late!

Special notes:

- You may be asked to wear safety glasses or other personal protective equipment on the tour.
- Smoking is NOT permitted.
- Pictures will NOT be permitted during the tour.

Thermon (<https://www.thermon.com>) is one of the largest providers of highly engineered industrial process heating solutions for process industries. For over 60 years, we have served a diverse base of thousands of customers around the world in attractive and growing markets, including oil & gas, chemical processing and power generation. We are a global leader and one of the few thermal solutions providers with a global footprint. We offer a full suite of products (heating units, heating cables, tubing bundles and control systems) and services (design optimization, engineering, installation and maintenance services) required to deliver comprehensive solutions to complex projects. We serve our customers through a global network of sales and service professionals and distributors in more than 30 countries and through our ten manufacturing facilities on three continents. These global capabilities and long-standing relationships with some of the largest multinational oil & gas, chemical processing, power and engineering, procurement and construction ("EPC") companies in the world have enabled us to diversify our revenue streams and opportunistically access high growth markets worldwide.

Location:

100 Thermon Drive
 San Marcos, Texas
 United States 78666
 Building: Marketing Building

14 IEEE PI2 Austin, February 2019, ChapComm, Officers Meeting

Time: 12:01 pm - 1:31 pm -- **MORE INFO AND REGISTRATION:** <https://events.vtools.ieee.org/m/187328>

Agenda:

Per agenda that will be distributed to officers prior to meeting.

Location:

Room: Private Dining Room
 1101 South Mopac Expressway
 IHOP Restaurant
 Austin, Texas
 78746
 Room Number: Private Dining Room

19

IEEE LIFE MEMBER AUSTIN - 19 FEB 2019 MEETING- TAX UPDATE AND MARKET INTELLIGENCE FOR INVESTORS

Time: 6.00 pm - 9:00 pm -- **MORE INFO AND REGISTRATION:** <https://events.vtools.ieee.org/m/187626>

Topic: Tax Update and Market Intelligence for Investors

Agenda:

6:00 PM - 6:30 PM - BBQ Dinner on your own and networking

6:30 PM - 7:00 PM - Business

7:00 PM - 8:00 PM - Presentation

Speakers:

- Dirk Whitney Van De Graaf of Merrill Lynch
- Grant Kinchen of Merrill Lynch

Location:

2121 West Parmer Lane @ Lamplight Village St.

Austin, Texas

United States 78727

Building: Pok-e-Jo's BBQ Rest.

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IEEE Computer Chapter: Emerging Non-volatile Memory for Neuromorphic Computing

Time: 7:00 pm - 8:30 pm -- **MORE INFO AND REGISTRATION:** <https://events.vtools.ieee.org/m/188880>

Neuromorphic (bio- or brain-inspired) computing is an emerging computing paradigm that takes inspiration from the way the brain computes. While computing systems based on the classical von Neumann architecture have one or more central processing units physically separated from memory, biological information processing features a co-localized memory and logic system where memory is distributed with the processing. Because the neural networks are extremely efficient at certain tasks that require massive amounts of data to be processed (e.g., recognition, classification, and prediction), research on neuromorphic computing is strongly driven by the need to invent a new computing topology that can lead to great improvements in computing efficiency in these machine learning tasks.

Speakers: Ethan Ahn of UTSA

Dr. Ahn is currently an Assistant Professor of Electrical Engineering at The University of Texas at San Antonio. Previously he served as a Senior Panel Process Engineer at Apple, Inc. (Cupertino, CA) and as a post-doctoral researcher at Stanford University. He received his Ph.D. in EE at Stanford University in 2015, under the supervision of Professor H.-S. Philip Wong. He joined Stanford in 2010, after a 3-year research career on the STT-MRAM technology with the Korea Institute of Science and Technology (KIST) in Seoul, Korea. He received the B.S. and M.S. degrees in EE from the Korea Advanced Institute of Science and Technology (KAIST) in Daejeon, Korea, in 2005 and 2007, respectively. He is the author of over 50 peer-reviewed research journal and conference papers and wrote one book chapter of Emerging Nanoelectronic Devices. His primary research interests include energy-efficient nanoscale logic and memory devices, carbon-based and other low-dimensional nanomaterials, computational studies on electronic, thermal, and spin transport in nanoscale devices, microfluidic sensors for robotics and biomedical applications, and novel energy storage and harvesting devices.

Location:

St. Marys University

1 Camino Santa Maria

San Antonio, Texas

United States 78228

Building: University Center

Room Number: Conference Room B

21 IEEE Life Members: Research for Nuclear Powered RamJet Missile

Time: 11.30 am - 1:00 pm -- **MORE INFO AND REGISTRATION:** <https://events.vtools.ieee.org/m/188823>

Topic: "Research for Nuclear Powered RamJet Missile"

Abstract: "slam" or "project Pluto" an advanced weapon system was developed from 1955 to 1964. My presentation this morning will open with a few facts to describe SLAM and PROJECT PLUTO then transition to the role I played in the research and testing of the subsystems that were needed to operate in the hostile environment of the SLAM (Supersonic Low Altitude Missile) vehicle. PROJECT PLUTO was the development of the direct cycle nuclear engine to power SLAM.

Speaker:

John Mitchell

Bio: Served four years in the US Navy (51-54) during the Korean War, Graduated from St. Mary's University with a degree in Physics in 1958, and studied Nuclear Engineering at SMU night school in Dallas (61-64), Joined Chance Vought Aircraft in June 1958. Radiation Effects Project Engineer for development of the Supersonic Low Altitude Missile (SLAM) (1958-1964). Supervisory Physicist USAFSAM (1964-1988). Director of Tri-Service Bioeffects Research Laboratory (USAFSAM) (1975 - 1990), Entered Senior Executive Service (1988). Research Director Radiation Sciences 1988 - 1990). Director Occupational and Environmental Health Directorate, Armstrong Laboratory (1990-1994) with Laboratories in Okinawa, Japan to serve the Pacific Rim, Toxicology Research Laboratory in Dayton, Ohio, and Tri-Service Radiation Research Laboratory at Brooks AFB, Texas. Retired in February 1994 with 34 years of Federal service.

Location:

8633 Crownhill Blvd.
San Antonio, Texas
United States 78209
Building: La Fonda

21 IEEE ComSoc/SP and EMBS/Computer Joint Chapters – Austin, "AIOT (Artificial Intelligence of Things)"

Time: 6.00 pm - 8:00 pm -- **MORE INFO AND REGISTRATION:** <https://events.vtools.ieee.org/m/189745>

Speaker: Kwok Wu, PhD - Head of Embedded Software and Systems, NXP

Dr. Kwok Wu, an award-winning industry veteran and sought-after speaker, has been awarded 2012 Innovator of the Year by ECD – Embedded Computing Design Magazine for his platform approach to Wireless Smart IOT Gateways*.

Kwok is also co-author of "Collaborative Internet of Things" published by John Wiley and Sons.

In 2015 Kwok was recognized by Freescale CEO with the companies' Diamond Chip Award for championing the Internet of Tomorrow Tour to fruition. The award was the highest honor bestowed by Freescale CEO for delivering exceptional contribution. Served as Advisory Board Member and Chief Strategy Officer (CSO) for many start-up companies and professional consultant in the field of embedded processors and systems, semi-conductor and EDA. Treasurer of IEEE-Communication Society.

Abstract:

Kwok will present " AIOT (Artificial Intelligence of Things) - IOT IN MOTION", the digital transformation journey from "ADAS" (Advanced Assisted Automated System) to "Fully Autonomous" vehicles, machines and systems. Highlighting the market needs and benefits, challenges and realistic expectations for solutions with Edge Analytics and Robotics to realize smart, safe and secure autonomous systems.

The "A-IOT" convergence of internet of things (IOT) with Artificial intelligence/Machine Learning (AI/ML) will span multiple markets in transportation 4.0, industry 4.0 (IIOT – Industrial IOT), Agriculture 4.0, Health 4.0, Retail 4.0, Smart City 4.0 etc. Will "A-IOT" live up to the promise to maximize business efficiency and improve Quality of Life?

Location:

9505 Arboretum
Austin, Texas
United States 78729
Building: AT&T Labs
Room Number: #220

25 Design of Synthesizable Digital PLL

Time: 10.00 am - 11:00 am -- **MORE INFO AND REGISTRATION:** <https://events.vtools.ieee.org/m/189416>

Topic: "Design of synthesizable digital PLL"

Abstract: There have been constant efforts to develop methodologies for automated digital design of key analog building blocks to obtain full benefits of robustness, testability, programmability and portability. The PLL, as a fundamental block of integrated circuit systems, has been one of the most actively researched topics in this area. The TDC, which interprets an analog phase to a digital number, plays as the major bottleneck in the synthesized implementation of digital PLL. The problem becomes even worse in the design of a fractional-N PLL for use as a local oscillator (LO) in wireless data communications due to stringent TDC requirements such as better linearity, wider conversion range, finer resolution and conversion gain matching to oscillator period. As a result, though synthesizable LO with automated design holds an impactful value in IC industry, it is still an unmet need and there have been only a few reported works showing feasibility to reach the goal. The first part of this talk reviews basics of digital PLL with noise and jitter analyses. The second part introduces implementation examples of recently reported RTL-synthesizable fractional-N PLLs.

Speaker: Jae-Yoon Sim

Jae-Yoon Sim received the B.S., M.S., and Ph.D. degrees in electrical engineering from Pohang University of Science and Technology (POSTECH), Korea, in 1993, 1995, and 1999, respectively. From 1999 to 2005, he was a Senior Engineer in the Samsung Electronics, Korea. From 2003 to 2005, he was a Postdoctoral Researcher at the University of Southern California, USA. From 2011 to 2012, he was a Visiting Scholar at the University of Michigan, Ann Arbor, MI, USA. In 2005, he joined POSTECH, where he is currently a Professor. His research interests include clock generation, serial and parallel links, data converters, neuromorphic circuits and sensor interface circuits.

Location:

2501 Speedway
Austin, Texas
United States 78712
Building: EER
Room Number: 0.806/808

26 IEEE PI2 AUSTIN, TECH MEETING, "ANTICIPATING POWER LINE PROBLEMS"

Time: 6.30 am - 9:00 am -- **MORE INFO AND REGISTRATION:** <https://events.vtools.ieee.org/m/189502>

Topic: "Anticipating Power Line Problems"

Abstract:

Locating power line problems by the post-fault system changes been standard for power distribution for many years, but it still may take hours to respond and repair the problem and the line fault can cause safety hazards and the potential for wildfires. A new monitoring technology developed at Texas A&M called Distribution Failure Anticipation (DFA) actually detects and reports such changes, allowing co-ops to find and fix these situations before they cause problems.

Speaker: Carl Benner , P. E, Research Associate Professor of Texas A&M University

Carl Benner holds B.S. and M.S. degrees in Electrical Engineering from Texas A&M University in 1986 and 1988. He serves as Research Associate Professor in the Department of Electrical and Computer Engineering at Texas A&M University. His work centers on the application of advanced technologies to the solution of challenging power system problems, with an emphasis on waveform analytics. Mr. Benner is a registered Professional Engineer in the state of Texas. He is a Fellow of IEEE, a member of the IEEE Power and Energy Society, the IEEE Industry Applications Society, and CIGRE.

Location:

2700 West Anderson Lane
Austin, Texas
United States 78757
Building: Cover 3

28 ETHICS PRESENTATION - PES SAN ANTONIO

Time: 6:00 pm - 8:00 pm -- **MORE INFO AND REGISTRATION:** <https://events.vtools.ieee.org/m/182615>

Texas Board of Professional Engineers

Location:

TBD
San Antonio, Texas
United States