Wavelengths

Volume 61 – Issue 8

Contents

Upcoming Events

We have a number of events coming up this month. Be sure to check out the Section Website: **https://r4.ieee.org/sem**
As well as vtools:

IEEE Region 4 - SE Michigan Section Upcoming

Listed below are some of the events, FYI.

Event	Date	Time
Rolling Sphere Method of Lightning Protection for Substations - IEEE Std. 998 and NFPA 780	03 Aug 2021	04:00 PM
SEM Section ExCom Monthly Meeting (Teleconference) for August 2021	05 Aug 2021	06:30 PM
Battery Safety Detection Thermal Management	06 Aug 2021	04:00 PM
2021 IEEE 64th International Midwest Symposium on Circuits and Systems : Michigan State University	09 Aug 2021	12:00 AM
Ch8: AdCom Teleconference	12 Aug 2021	11:00 AM
Virtual Meeting: Intro to Scale Autonomous Racing & DIY AV (Autonomous Vehicle) Communities	12 Aug 2021	07:00 PM
SEM Chapter 1 EXCOM Meeting	17 Aug 2021	07:00 PM
Theory and Practice of Filtering with Ferrites	19 Aug 2021	05:30 PM
The great semiconductor chip shortage of 2021	17 Aug 2021	06:00 PM
IEEE MOVE Community Outreach Program	27 Aug 2021	04:00 PM

Note: All times are EST/EDT unless otherwise marked. Accurate at the time of going to press. If any events are missed do kindly bring them to the attention of wavelengths@ieee-sem.org. Thank you!

Chair Person's Column

Welcome to the August edition of the Wavelengths. This month we are featuring several individuals that have recently been promoted to Senior Members within our Section. Senior Member is a titled that must be applied for by an individual once that have achieved 10 years of experience, with credit for advanced degrees, and can demonstrate significant contributions to our industry. I encourage every member who meets those qualifications, to apply. The application requires 3 existing Senior Members to provide a reference. Feel free to reach out if you need assistance in finding references.

In July we held our first Section ExCom in-person in over a year. 15 individuals gathered at the Engineering Society of Detroit headquarters. It was great to catch up with colleagues and to work on volunteer activities for the Section. We are always looking for additional volunteers and now is a great time to step forward if you have been sitting on the fence.

There are several great virtual events scheduled within our Section in the upcoming months. This includes the virtual Midwest Symposium on Circuits and Systems that was originally scheduled to take place in Lansing, but is now fully online. Several Southeastern Michigan Section volunteers have be diligently working to ensure a great event. We also have several great yearly events coming up. This includes the Embedded Systems Workshop and EMCFest, both are slated for this fall.

Thanks to the amazing team of volunteers that we have in this organization. I look forward to seeing everyone soon!

David Mindham
dmindham -At- ieee.org

SusTech 2022 CFP

IEEE SusTech2022

https://ieee-sustech.org

Call For Papers

April 21st-23rd, 2022

The **9th Annual IEEE Technologies for Sustainability Conference** (SusTech 2022) is designed to explore technical development that meets the needs of the present without compromising the future generations. The conference brings together scientists, engineers, technologists and scholars from disparate disciplines to conduct a dialogue on environmental issues and collaborate on ideas to develop and utilize innovative tools and intelligent systems to address them. Attendees will explore emerging relevant technologies, latest tools, and proactive solutions to take their sustainability programs to the next level.

- **SusTech 2022** is a virtual and on-demand event and will feature technical papers & presentations, posters and workshops.
- Prominent experts will be giving keynotes, plenary presentations and invited talks.
- Best Posters and Papers in the conference will be eligible for an award.
- Full papers will be considered for publication in the IEEE SusTech 2022 Proceedings.

Conference content that meets IEEE quality review standards and format will be submitted for inclusion into IEEE Xplore as well as other Abstracting & Indexing (A&I) databases.

Papers are solicited for presentations from industry, government, and academia (including students) covering relevant research, technologies, methodologies, tools, case studies and public policy.

Conference Fields of Interest (see web site for full details)

Technologies that drive sustainable infrastructure design and implementation

Energy Efficiency	**Sustainable Electronics**	**Smart Grid**
Renewable/Alternative Energy	**Water Resource Management**	**Internet of Things (IoT)**
Intelligent Transportation Systems	**Societal Implications/Quality of Life**	**Public Policy**

The Conference will also consider submissions representing: Smart Grid, e-Waste, Ocean Waste & Pollution, Ecological Sustainability & Conservation, Agriculture & Food Technology, Sustainable Management.

Instructions to Authors: Submit in **PDF** form, a full submission of the paper for oral presentation via the SusTech website. For information for authors, please visit the conference website at **https://ieee-sustech.org**. Select the Authors *tab* and follow the instructions.

There will be a separate Student Poster Competition.

Important Dates	November 1st, 2021	Submission Deadline for Paper
	December 15th, 2021	Notification of Acceptance
	January 31st, 2022	**FINAL manuscript submission deadline**

For more information or questions, please contact: sustech@ieee.org

SusTech 2022 Leadership

General Chair: David E. Gonzalez | davidgonzalez@ieee.org
Vice Chair: Sharan Kalwani | sharan.kalwani@ieee.org
Technical Program Chair: Rakesh Mahto | ramahto@fullerton.edu
Past Chair: Gora Datta | gora.datta@ieee.org
Emeritus Chair and Co-Founder: Ed Pekins | e.perkins@ieee.org

IEEE Region 6 | IEEE | IEEE-USA | IEEE SSIT | IEEE Environmental Engineering Technical Community

Embedded Systems 2021

19th Annual Embedded Systems Workshop

October 23 & 30, 2021, 8:30 a.m. to 12:30 p.m. (Saturdays)
Virtual/Online Live Sessions, EST/EDT Time Zone

IEEE Computer Society & IEEE Education Society (South East Michigan Chapters) is offering a TWO half-day set of workshops on Embedded Systems on Saturday, October 23rd and 30th, 2021. This workshop is open to all industry professionals, both experienced and newly minted engineers, as well as students. This is the 19th year that the event is being held. The theme for this year is: "Role of Embedded Systems in Battery Electric Vehicles (BEV)".

The aim is to disseminate knowledge, directly benefitting the IEEE members, at the same time **improve the technology skills pool, indirectly boosting the economy.** Speakers and experts from the embedded systems industry will be making presentations, and will also be available for discussions and networking throughout the day. In addition to the technical presentations, there will be industry interaction and potential recruitment sessions. Use this opportunity for virtual networking with engineers, industry experts and embedded enthusiasts.

Please confirm your participation by registering on the IEEE events web site
Deadline is 17th October 11 pm
https://bit.ly/embed2021

Venue: Virtual using Video Conferencing

Sponsors in the past: Beningo Embedded Group, Infineon, TeKnowledge, Intrepid CS and many others...

Attendees: There is a small one-time cost of $5 to attend, this will help cover door prizes, video recording, storage, presentations, a dedicated website and other logistics. Several random raffles representing the embedded systems industry will also take place. All are welcome. Do post this flyer in your workplaces, share/inform your peers & colleagues about this event. It is a great way to learn not only what is going on, but also network (virtually) with other professionals as well.

Brought to you by the IEEE SE Michigan Computer & Education Society chapters. Do seriously consider joining the IEEE, boost your technical skills, broaden your awareness of compute-based engineering in the region, support numerous similar initiatives & learn other benefits this brings.

Open to all, Pre-registration is necessary prior to attending! **The deadline to register is 17th October 11 PM**

For Technical questions, contact the Program Committee **at:** esw2021@ieee-sem.org

A CEU/PDH Certificate will be made available for participants who Pre-register and attend both days!

ESW 2021 Organizing Committee: Subra Ganesan (Chair), Sharan Kalwani (Vice Chair), Ramesh S, Carla Gerst, Nilesh Dudhaia, Praveena Jakkula, Sreenivas Eeshwaroju and Ben Sweet

Technical Activities Report

2021 IEEE SE Michigan Section Geo-unit Status (Till July 30th)

Ch's & AG's	Ave Tech Mtg. Attend	Ave Tech Mtg Guest	#L31 -Technical	#L31 -Admin	#L31 Professional	#L31 -Other	Geo-Unit Name	# Unreported	Total Mtgs
Cnslt	20	1	1	5	1	0	Consultants Network	0	7
LIFE	0	0	0	0	0	0	Life Members	0	0
WIE	0	0	0	2	2	0	Women In Engineering	5	4
YP	0	0	0	0	0	0	Young Professionals	0	0
1	0	0	0	0	0	0	Circuits & Systems, Signal Proc., Info Th.	4	0
2	40	9	3	1	0	0	Vehicular Technology	0	4
3	103	37	3	0	0	0	Aerospace & Elec. Sys., Communications	2	3
4	29	9	2	0	0	0	Trident (Ant, Elect Dev., uWave, Photo)	0	2
5	29	2	36	5	5	2	Computers	0	48
6	0	0	0	0	0	0	Geoscience & Remote Sensing	0	0
7	40	5	6	1	0	0	Power Engineering, Industrial App.	0	7
8	90	37	12	6	0	0	Electromagnetic Compatibility (EMC)	1	18
9	48	14	2	1	0	0	Power Electronics, Industrial Electronics	0	3
10	4	0	2	1	0	0	Engineering Management	0	3
11	0	0	0	0	0	0	Eng. in Medicine & Biology	0	0
12	0	0	0	3	0	0	Control Systems	0	3
13	37	2	14	1	2	0	Education	1	17
14	0	0	0	0	0	0	Robotics & Automation	0	0
15	69	43	4	0	0	0	Nuclear Plasma Science Society	1	4
16	0	0	0	0	0	0	Computational Intelligence / Sys.Man.Cyber.	0	0
17	21	17	3	0	0	0	Nano Technology Council	0	3
SEM	26	2	2	6	3	1	SEM (Section)	8	12
Tot	555	177	90	32	13	3	NOTE: Highlight Green = Active	22	138
		32%					NOTE: Highlight clear = Concern		

The monthly Section Health report now includes columns representing the numbers of unreported meetings see, (#Unreported) as well as total meetings see (Total Mtgs) for each GA. GA leaders are requested to review the report and clarify any unreported meeting activity by either submitting the appropriate L31 status report or by contacting the undersigned for assistance.

We have only a few GAs who seem to be inactive as of the end of July. I trust that this is the quiet before the great storm of activity being planned for the Fall. Remember that our technical chapters and societies can conduct joint technical meetings where both groups can receive recognition by IEEE and our Section. Please endeavor to engage your group membership by: (1) Meeting F2F or virtually to discuss IEEE presentations or other technical content germane to your group; (2) Invite members or outside speakers to present relevant technical achievements and or issues; and (3) Collaborate with other GAs on relevant joint technical topics of interest via webinar. These are just a few suggestions to maintain healthy technical interchanges within our Section.

Your Technical Activities Committee (TACom) stands ready to assist as needed. Stay well and stay safe.
Jeff Mosley, Chairman, Technical Activities Committee, R4 IEEE SEM
jvmosley@ieee.com

Member News

Congratulating Newly Elevated Senior Members!

Congratulations to Marcelo Xavier, for his recent elevation to Senior Member!

Dr. Marcelo Araujo Xavier is a Research Engineer at Ford Motor Company, where he leads and supports teams developing models, systems and controls for high-voltage battery systems. He earned his B.Sc. in Electrical Engineering from the Federal University of Rio Grande do Norte in 2008, and his MBA with emphasis in Project Management from Fundacao Getulio Vargas in 2010, both in Brazil before moving to the US in 2011. In 2013 and 2016 he earned his M.Sc. in Electrical Engineering and his Ph.D. in Engineering, respectively, from the University of Colorado, Colorado Springs. Dr. Araujo Xavier is also a certified Project Management Professional (PMP) from the Project Management Institute (PMI). His main interests are control systems, high-voltage battery systems, cyber-physical systems and project management.

Congratulations to Yongsoon Yoon, for his recent elevation to Senior Member!

Dr. Yoon received the B.S. and M.S. degrees in Mechanical and Aerospace Engineering from Seoul National University, Seoul, South Korea in 2006 and 2008, respectively, and Ph.D. degree in Mechanical Engineering from the University of Minnesota, Minneapolis, MN, USA, in 2015. Currently, Dr. Yoon is an Assistant Professor of the Mechanical Engineering Department at the Oakland University, Rochester, Michigan. Prior to joining the OU, he had research and development experience in the automotive industry more than 8 years. His research interests include controls and diagnostics with broad applications to automotive powertrain, fluid power systems, and autonomous vehicles. Dr. Yoon has authored/coauthored more than 25 referred technical papers and have 7 international and U.S. patents (published and pending) and released 8 technical reports in his area.

Congratulations to Prakash M. Peranandam, for his recent elevation to Senior Member!

Dr. Prakash M. Peranandam is a Sr. researcher at GM R&D. His research interests are in requirements analysis & engineering, virtualization, verification & validation (V&V) of Embedded software, AV/ADAS systems and V&V of the Blockchain Smart Contracts. He has co-authored more than 30 research publications, technical reports and generated over 45 IPs (patents & trade secrets). He obtained his PhD in 2006 from the University of Tuebingen, Germany. He is one among the top 100 select group of emerging engineering leaders across USA, chosen by the NAE (National Academy of Engineering) for the 2021 Frontiers of Engineering (FOE) event.

Congratulations to Claude Dinsmoor, for his recent elevation to Senior Member!

Claude Dinsmoor is Vice President of Research and Development for FANUC America. He is responsible for global paint robot development for the FANUC group and global robot software development in the US used in FANUC robots. This includes developments in the areas of robot motion, programming software, operating systems, safe software systems, machine vision, machine learning, IIOT, industrial networking, and robot simulation products. Prior to his current role, he was General Manager of the General Industries and Automotive Segment for FANUC. In this role his group managed product planning, pre- and post-sale product support, and new application development for robots sold in the general industry and automotive sectors by FANUC America.

He is a member of the US R15.06 robot standards committee, and helps represent the US in ISO 10218 robot safety standards activities (TC299 WG3) and sits on the RIA Standards Activity Committee. Claude has worked in industrial robotics product development for almost 40 years, first with GE, and for the last 37 years with the FANUC group. He has an engineering degree in Electrical and Computer Engineering from Oakland University and graduate work at University of Virginia and Oakland University. He has been an IEEE member since 1979 and is past president of the Oakland University IEEE student chapter.

Congratulations to Patrick Wong, for his recent elevation to Senior Member!

I was a part of IEEE Southern MN section from 1996 to 1999. IBM (former employer) and Mayo Clinic were the main sponsors there. They had very good monthly seminars. Now that I'm in MI since 2014, our SE MI section also has very good monthly meetings, seminars, and events. I gain well rounded knowledge from IEEE community. It does not necessarily have direct impact on my job of the day, but indirectly enhances my way of thinking and judgement. This kind of supportive community is what attracts me to IEEE.

After graduating with electrical engineering (electronics, control systems, microprocessors, electric machines, etc.), I worked in embedded software development and testing, because life is not a straight line (translation: I couldn't get hardware jobs). My first engineering job was doing databases, computer graphics, for Civil Engineers. I was also a personal tutor for high school and first year university students in physics, chemistry, and math. Last decade, I worked in RF (commercial/military broadband radio manufacturing) and aircraft wiring. Recent years, I work in power electronics, inverter control software for electric vehicles, specializing in functional safety (ISO-26262) and Autosar. (Inverters send DC power to drive motors).

Congratulations to Tejas Desai, for his recent elevation to Senior Member!

Tejas started his professional career as an RF Design Engineer at Optimax Inc. in Hatfield, PA in 1987 and focused primarily on designing RF electronic components. In 1992, he shifted his focus to electronic product design for the automotive industry and helped develop various products. Among them are the receivers along with the standards for the Remote Keyless Entry systems that he developed at Ford Motor Company and advanced bi-directional remote-control systems for TRW.

In 1997, he joined Siemens Automotive and was responsible for building up the business and the local capability to develop wireless products. He led the development and introduction of the first keyless vehicle program in North America. In 2002, he was appointed to lead Wireless Product Development in North America including global responsibility for Immobilizer and Reader products.

Following the acquisition of Siemens VDO by Continental, Tejas was appointed to lead Asia activities of Interior Electronics Solutions (responsible for system development, innovation & strategy, and development of affordable car technologies of/in the Interior division) for the emerging markets.

Tejas returned to the United States in 2012 to lead Interior Electronics Solutions for North America where the focus shifted from affordable car technologies to the growth of connected car and autonomous vehicle technologies and their enablers. Since 2017, Tejas has led the electrical & electronics development activities at American Axle & Manufacturing growing the portfolio from actuators to networked/secure systems to a portfolio of electrification solutions.

Over the different roles in his career, Tejas has been awarded over 40 patents with multiple patents and trade secrets pending.

Congratulations to Bharat Khasatiya, for his recent elevation to Senior Member!

Bharat is an engineering professional with over 10**+** years of experience in the field of Design and Development, FEA and Testing of Automotive, Off-road Vehicles and Industrial products. He is currently spearheading as Design Engineer onsite at Toyota Technical Center through Altair Product Design Inc.

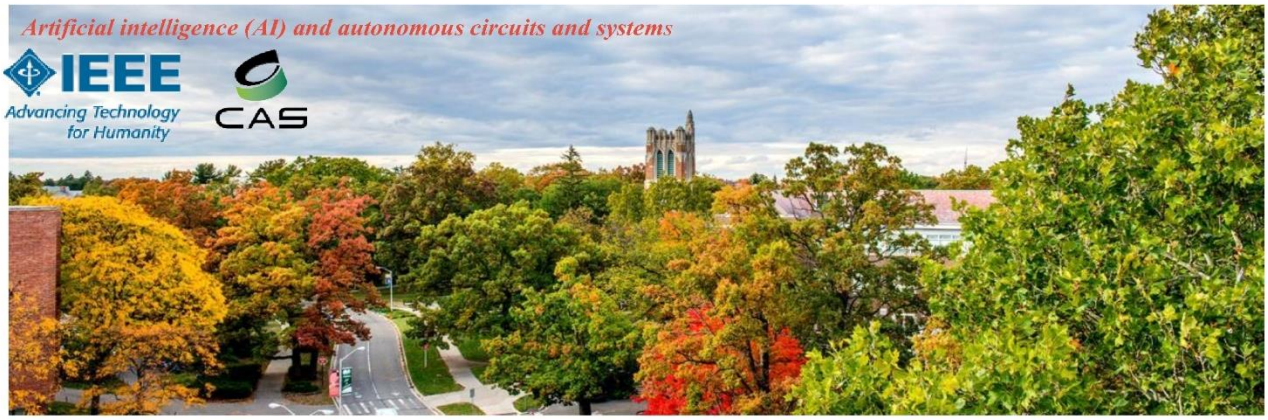
Bharat is adept at managing design engineering operations involving design & development, product design and its critical characteristic, co-ordination with internal departments, process developments, interfacing with vendors and customers.

Recently Bharat won the **VE of the Year Award** (***Toyota North America R&D***) in 2018 & 2019. Toyota North America R & D gives this award to the few best performing employees each year who helps the company reach its profit target and provide extra budget for research and development.

Bharat got his Master's in Automotive Engineering from Lawrence Technological University, Southfield, Michigan, USA in May 2010.

Curated and Formatted for Wavelengths by
Sharan Kalwani,
Chair, IEEE SE Michigan Membership Development

Circuits Symposium 2021



2021 IEEE 64th International Midwest Symposium on Circuits and Systems

~~Lansing, Michigan, USA~~ | **Aug. 9-11, 2021**

Now Fully Virtual & On-line!

Greetings from the IEEE MWSCAS 2021,

We invite you to join and register, possibly independent from the Symposium, in the 2 special pre-Symposium events:

Saturday, Aug. 7, 2021: NVIDIA WORKSHOP on Deep Learning

Sunday, Aug. 8, 2021: TUTORIALS (5 distinguished tutorials)

- **NVIDIA WORKSHOP on Deep Learning**

See Details: Instructor-led Nvidia-workshop: Fundamentals of Deep Learning

Circuits Symposium contd.

A pre-Symposium Special NVIDIA workshop will be offered at the Symposium on Saturday, August 7, 2021. It is hands-on, Nvidia-certified, instructor-led, from **9AM- 5PM**. Associated GPU-computing resources will be reserved for registrants in this workshop. The workshop resources and contents are provided free by Nvidia, while the Symposium is providing the Zoom link and the CONFlux delivery platform for the workshop.

➢ TUTORIALS (*5 distinguished tutorials*)

All tutorials will be held on Sunday, August 8, 2021 a day prior to the formal start of the symposium on (August 9-11, 2021). There is a **flat fee of $75** for all five tutorials. You may register for as many as the time-durations and scheduling allows. See each tutorial time-duration below.

All participants in a tutorial will be offered a Continuing Education Units (CEUs) for the titled tutorial as part of their professional development upon request.

Presentation Platform, Channel 1:

TUT-1A (**9 AM- 11 AM**): Ultra-Low-Power and highly-scalable IC: towards energy-autonomous and low-cost systems for distributed sensing
Instructor/Author: Dr. Orazio Aiello, ***National University of Singapore, Singapore.*** TUT-1B (**12 PM- 2 PM**): Large Scale Integration of Analog, Mixed Signal and Power circuits for automotive applications
Instructor/Author: Dr. Sri Navaneeth Easwaran, *Texas Instruments (TI),* **AND Prof. Robert Weigel,** *University of Erlangen-Nuremberg, Germany.*

TUT-1C (**3 PM - 5PM**): Compact RF CMOS Radios for Emerging 5G/6G Wireless
Instructor/Author: Prof. Mohammed Ismail, *Wayne State University, U.S.A.*

Presentation Platform, Channel 2:

TUT-2A (**9 AM- 11 AM**): Recurrent Neural Networks (RNNs) intricacies: from simple to gated architectures
Instructor/Author: Prof. Fathi M. Salem, *Michigan State University, U.S.A.*

TUT-2B (**1 PM - 5 PM**): Introduction to Synthetic Aperture Radar
Instructor/Author: Dr. Armin Doerry, *Sandia National Laboratories, U.S.A.*

Tutorial attendees will be asked at the end of each tutorial to rate the following attributes: (a) Effectiveness, (b) Clarity, and (c) Organization. The tutorial with the highest ratings will be invited to write a corresponding overview tutorial to be included as part of the proceedings on ***IEEExplore****.*

Special Registration Fees:

There is a ***flat fee of $75*** *as an add-on to the Symposium registrations for the hands-on full day Workshop.*
There is a ***flat fee of $75*** *as an add-on to the Symposium registrations for all the 5 tutorials.*

There are also other registration options:

Circuits Symposium contd.

*-A weekend-only event for the Workshop_plus_Tutorials of **$250/person** (No Symposium registration is required).*
*- All-in-One package registration (Symposium_plus_Tutorials&Workshop) for **$450/person**.*
*(**for students**, the All-in-One rate is **$175/person**).*

*This year's symposium theme is **artificial intelligence (AI) and autonomous circuits and systems**.*
Please visit the website mwscas2021.org for current information. The following are the confirmed Symposium Keynote Speakers.

Keynote Speaker (Day 1)

Sepp Hochreiter

Modern Hopfield Networks

Monday, August 9, 2021 at 8:30 A.M.

Keynote Speaker (Day 2)

Stephen Boyd

Convex Optimization

Tuesday, August 10, 2021, at 12:00 PM

Keynote Speaker (Day 3)

Khurram Waheed

Chalking the Path to Limitless Wireless Connectivity

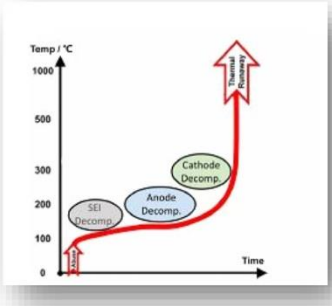
Wednesday, August 11, 2021, at 8:30 A.M.

Circuits Symposium contd.

The IEEE International Midwest Symposium on Circuits and Systems (MWSCAS) is the oldest, and now the flagship, Circuits and Systems symposium. The 64th meeting of the MWSCAS is being hosted by Michigan State University, in East Lansing, Michigan, USA, and technically co-hosted with Wayne State University in Detroit, Michigan, from Aug 8-11, 2021. The MWSCAS 2021 has pivoted to fully virtual symposium to add a sense of certainty. Live presentations will be streamed and managed by the convenient CONFlux virtual platform. It will include oral sessions, student paper contest, 3 keynote addresses, regular and special sessions, as well as the Nvidia workshop and tutorials presented by world experts in wide range of circuits and systems topics.

EV Battery Modeling

IEEE SE Michigan Section
Presents
"EV Battery Safety, Detection and Thermal Management"



IEEE Southeastern Michigan
Electrical and Electronic Engineers Creating Our Future

As many auto makers announce new electric vehicles, battery safety is one of the main concerns. Although EV fires are much less common than vehicles powered by gasoline fuels, Li-ion batteries contain 2X as much energy in combustible materials/mile of range that could be released during a failure. We will discuss what causes Li-Ion failures (including over-temperature, internal & external short circuits). We will dive into techniques for modeling the coupled electro-chemical and thermal behavior during normal & abnormal conditions. Finally, some the challenges of detecting thermal runaway in large packs and opportunities for using gas sensing to help provide diagnostics and an early warning for failing cells.

Speaker Bio:

Dr. Jason Siegel is an Associate Research Scientist in the ME Department at the University of Michigan, Ann Arbor. His research focuses on modeling and control of energy systems for automotive applications including batteries, hydrogen fuel cells, and hybrid engines. Dr. Siegel has managed 3 ARPA-E projects including a 2014 Advanced Management and Protection of Energy Devices (AMPED) project in collaboration with FORD & GE. The team was awarded the 2016 IEEE Control Systems Technology Award for their work. He served as the chair of the IEEE Technical Committee on Automotive Controls from 2017-2020.

At Glance

- **When:**
  Date: August 6th, 2021
  Time: 4:00 – 6:00 PM (EST/EDT)
- **Where:**
  Online via Webex (to be shared only after you have a confirmed registration)
- **Audience: OPEN to ALL***

Sponsored by IEEE SE Michigan Control Systems, Computer Society, & Education Society Chapters

***Pre-Registration Required!**

https://events.vtools.ieee.org/m/277534

IEEE Control Systems Society
IEEE Education Society
IEEE COMPUTER SOCIETY
IEEE Advancing Technology for Humanity

Section Advisor Profile

Personal Profile of the IEEE-SEM Section Advisor

Don C Bramlett, LSMIEEE, FESD, FMSPE, PE(retired)

Don Bramlett, the appointed Section Advisor, retired from Detroit Edison (DTE Energy) in 2017, after a 44-year career in the natural gas and electric generation energy industries. He has a BSEE and MBA from the University of Detroit and was a licensed PE in the state pf Michigan. He is a Fellow of ESD and MSPE.

He is suited for the Section Advisor role due to his active involvement as an IEEE member for over 50 years in such roles as all of the Section Executive Committee Offices, various Region 4 Offices, IEEE Board of Directors (BOD) member in 2009 and 2010, IEEE-USA BOD member and Treasurer, and IEEE-MGA BOD member and Treasurer.

He is presently on the Section Education Committee, and as such coordinates the Section judging and awards for the Michigan Regional Future City Competition, and the Science and Engineering Fair of Metropolitan Detroit (SEFMD). He is also a member of the BOD of the SEFMD, and a member of the ESD College of Fellows Executive Committee. Lastly, as interim Chapter Chair, working to activate the Southeastern Michigan Chapter of IEEE-HKN (Eta Kappa Nu).

Don can be reached at either of his AT ieee emails (consult the roster at the Section website)

Curated and Formatted for Wavelengths by
Sharan Kalwani,
Chair, IEEE SE Michigan Education Society Chapter
Vice-Chair, IEEE SE Michigan Computer Society Chapter
Editor, Wavelengths, 2018~2019~2020~2021

Robotics Event

Southeastern Michigan Section
Robotics & Automation Society
Presents

Virtual Meeting: Intro to Scale Autonomous Racing & DIY AV (Autonomous Vehicle) Communities

Date: Thursday, Aug 12, 2021 **Time: 7:00 PM to 8:15 PM (EDT)**

Zoom Meeting at: https://ltu.zoom.us/j/95701277545?pwd=RVVaQkJEOGt3Q09MYVVRYzgrZmxJUT09
Meeting ID: 957 0127 7545 Passcode: 743841

First Talk: "Introduction to global & local DIY AV communities" by Alex Polonsky (15 minutes)

Global and local DIY AV communities including Detroit Autonomous Vehicle Group will be introduced.

Alex Polonsky is an electronics/robotics engineer with a passion for mobility and technological innovation. Born in Russia and raised in San Francisco, CA, in 2011 Alex decided to pursue his dream of contributing to change through transportation and moved to Detroit. Since moving he's been able to combine his passion for automobiles and technology through AV's and founded Detroit Autonomous Vehicle Group.

Second Talk: "Zero to hero - building your own autonomous racer" by David Walmroth (35 minutes)

In this presentation, attendees will receive an overview of autonomous racing and a look at various DiY scale autonomous vehicle options. The introduction will be followed by a closer examination of the steps involved in creating an autonomous racer based on NVIDIA's JetRacer GitHub repository. The process of selecting, building, training, and operating your scale autonomous vehicle will be covered, along with a brief demo showing a completed 1:10 scale racer.

David Walmroth is a University of Michigan graduate, experienced international project manager, and winner/team member of various robotics and hacking competitions including Hackfest 17', and the 2018/19 Arm-Hackster Autonomous Robot Challenge. David is also Co-Organizer of the Ann Arbor Autonomous Vehicle Group on Meetup and avid autonomous racer in both physical and virtual events.

To register, go to: https://events.vtools.ieee.org/m/277183

Questions? Contact CJ Chung, IEEE SEM Robotics & Automation Society Chair, cchung@LTU.edu

NIST m-WIDAR

NIST METHOD USES RADIO SIGNALS TO IMAGE HIDDEN AND SPEEDING OBJECTS by Dan Romanchik, KB6NU

*People often ask me what good an amateur radio license is. Well, increasingly our technology is using wireless communications, i.e. radio. Radio waves are also being used in other innovative ways, as seen below in this June 25, 2021 NIST report. Being an amateur radio operator can help one learn the skills necessary to be a part of this kind of research and development....*Dan

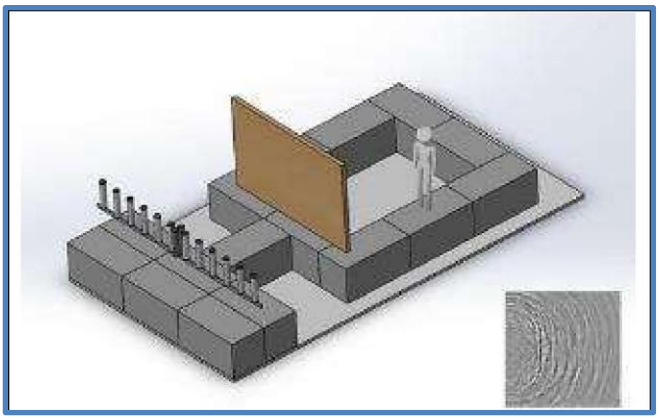


Illustration of the lab setup for **m-Widar**, with transmitters and receiver at left and person behind wallboard at right. Inset at lower right shows the corresponding image produced by the instrument. **Credit: NIST**

Researchers at the National Institute of Standards and Technology (NIST) and Wavsens LLC have developed a method for using radio signals to create real-time images and videos of hidden and moving objects, which could help firefighters find escape routes or victims inside buildings filled with fire and smoke. The technique could also help track hypersonic objects such as missiles and space debris.
The new method, described June 25 in Nature Communications, could provide critical information to help reduce deaths and injuries. Locating and tracking first responders indoors is a prime goal for the public safety community. Hundreds of thousands of pieces of orbiting space junk are considered dangerous to humans and spacecraft.

"Our system allows real-time imaging around corners and through walls and tracking of fast-moving objects such as millimeter-sized space debris flying at 10 kilometers per second, more than 20,000 miles per hour, all from standoff distances," said physicist Fabio da Silva, who led the development of the system while working at NIST.

"Because we use radio signals, they go through almost everything, like concrete, drywall, wood and glass," da Silva added. "It's pretty cool because not only can we look behind walls, but it takes only a few microseconds of data to make an image frame. The sampling happens at the speed of light, as fast as physically possible."

The video to the left shows a demonstration of the m-Widar (micro-Wave image detection, analysis and ranging) system. In it, a person is walking on the left and later crouching and lying down in an anechoic chamber. The transmitters and receiver are in a vertical line on the right side of the chamber. The second video on the right shows the instrument's view of the same scene. About 21 seconds into the video, a wallboard is inserted between the person and the instrument in the anechoic chamber, to show that m-Widar can "see" through walls. *Credit: NIST*

The NIST imaging method is a variation on radar, which sends an electromagnetic pulse, waits for the reflections, and measures the round-trip time to determine distance to a target. Multisite radar usually has one transmitter and several receivers that receive echoes and triangulate them to locate an object.

"We exploited the multisite radar concept but in our case use lots of transmitters and one receiver," da Silva said. "That way, anything that reflects anywhere in space, we are able to locate and image."

Da Silva has applied for a patent, and he recently left NIST to commercialize the system under the name m-Widar (microwave image detection, analysis and ranging) through a startup company, Wavsens LLC (Westminster, Colorado).

The NIST team demonstrated the technique in an anechoic (non-echoing) chamber, making images of a 3D scene involving a person moving behind drywall. The transmitter power was equivalent to 12 cellphones sending signals simultaneously to create images of the target from a distance of about 10 meters (30 feet) through the wallboard.

Da Silva said the current system has a potential range of up to several kilometers. With some improvements the range could be much farther, limited only by transmitter power and receiver sensitivity, he said.

The basic technique is a form of computational imaging known as transient rendering, which has been around as an image reconstruction tool since 2008. The idea is to use a small sample of signal measurements to reconstruct images based on random patterns and correlations. The technique has previously been used in communications coding and network management, machine learning and some advanced forms of imaging.
Da Silva combined signal processing and modeling techniques from other fields to create a new mathematical formula to reconstruct images. Each transmitter emits different pulse patterns simultaneously, in a specific type of random sequence, which interfere in space and time with the pulses from the other transmitters and produce enough information to build an image.

The transmitting antennas operated at frequencies from 200 megahertz to 10 gigahertz, roughly the upper half of the radio spectrum, which includes microwaves. The receiver consisted of two antennas connected to a signal digitizer. The digitized data were transferred to a laptop computer and uploaded to the graphics processing unit to reconstruct the images.

The NIST team used the method to reconstruct a scene with 1.5 billion samples per second, a corresponding image frame rate of 366 kilohertz (frames per second). By comparison, this is about 100 to 1,000 times more frames per second than a cellphone video camera.

With 12 antennas, the NIST system generated 4096-pixel images, with a resolution of about 10 centimeters across a 10-meter scene. This image resolution can be useful when sensitivity or privacy is a concern. However, the resolution could be improved by upgrading the system using existing technology, including more transmitting antennas and faster random signal generators and digitizers. Da Silva explains the imaging process like this: To image a building, the actual volume of interest is much smaller than the volume of the building itself because it's mostly empty space with sparse stuff in it. To locate a person, you would divide the building into a matrix of cubes. Ordinarily, you would transmit radio signals to each cube individually and analyze the reflections, which is very time consuming. By contrast, the NIST method probes all cubes at the same time and uses the return echo from, say, 10 out of 100 cubes to calculate where the person is. All transmissions will return an image, with the signals forming a pattern and the empty cubes dropping out.

In the future, the images could be improved by using quantum entanglement, in which the properties of individual radio signals would become interlinked. Entanglement can improve sensitivity. Radio-frequency quantum illumination schemes could increase reception sensitivity.

The new imaging technique could also be adapted to transmit visible light instead of radio signals — ultra-fast lasers could boost image resolution but would lose the capability to penetrate walls — or sound waves used for sonar and ultrasound imaging applications.

In addition to imaging of emergency conditions and space debris, the new method might also be used to measure the velocity of shock waves, a key metric for evaluating explosives, and to monitor vital signs such as heart rate and respiration, da Silva said.
This work was funded in part by the Public Safety Trust Fund, which provides funding to organizations across NIST leveraging NIST expertise in communications, cybersecurity, manufacturing and sensors for research on critical, lifesaving technologies for first responders.

Paper: F.C.S. da Silva, A.B. Kos, G.E. Antonucci, J.B. Coder, C.W. Nelson and A. Hati. Continuous Capture Microwave Imaging. Nature Communications. Published online June 25, 2021. DOI: 10.1038/s41467-021-24219-0

The post NIST Method Uses Radio Signals to Image Hidden and Speeding Objects appeared first on KB6NU's Ham Radio Blog. Reprinted with permission.

IEEE Day 2021

About IEEE Day
IEEE Day is celebrating the first time in history when engineers worldwide and IEEE members gathered to share their technical ideas in 1884. Worldwide celebrations demonstrate the ways thousands of IEEE members in local communities join together to collaborate on ideas that leverage technology for a better tomorrow.

Theme
Now engraved in its essence, the IEEE Day's theme is: "Leveraging Technology for a Better Tomorrow". While the world benefits from what's new, IEEE focuses on what's next.

Date
IEEE Day is an annual event celebrated on the first Tuesday in October, IEEE Day 2021 will be held on 5 October. Celebrations can be held between 1 October and 17 October. To this end, we are inviting all members interested in helping to celebrate IEEE Day 2021 to add their names to this volunteer link and become an IEEE Day Ambassador. All IEEE members i.e. Senior member, Life member, Fellow, YP, students,… all can celebrate the day. Once can conduct photo, video contests, any local event which shows the value of IEEE. If you would like to see some of the events done last year during the pandemic – check out: https://ieeeday.org/eventslist-2020/.

Call for Ambassadors!
IEEE Day 2021 team is looking for enthusiastic Ambassadors from all of it's organizational units. This Ambassador program will provide an opportunity to volunteer with an international team for global exposure. Main job of an ambassador is to promote IEEE Day 2021 in their respective student branch, chapter, affinity groups and sections.

The CALL FOR AMBASSADORS program is now open for all the active IEEE Members! An Ambassador has to have active IEEE Membership for the year of 2021. So if you think you are interested, do not wait for the deadline. Go ahead and If you have any query, do not hesitate to contact Sharan Kalwani.

IEEE Day 2021 has lots of social media activity. Click on any of the icons below for the latest.

IEEE MOVE Outreach

IEEE SE Michigan Section
Presents
"IEEE MOVE Community Outreach Program"

IEEE Southeastern Michigan
Electrical and Electronic Engineers Creating Our Future

MOVE Community Outreach is an emergency relief program committed to assisting victims of natural disasters with short-term communications and power solutions. These temporary emergency relief provisions help those affected stay connected and make sure they can access the help they need. Services include phone charging, internet & communications support, and lighting to disaster victims.

When not deployed for natural disasters, MOVE volunteers conduct community outreach and facilitate learning opportunities for students and the general public in the areas of Science, Technology, Engineering, and Math (STEM). They have been as far west as Texas, and as far north as New York to get students excited about STEM.

Speaker Bio:
Grayson Randall is an IEEE senior member and IEEE MOVE Operations lead. Grayson is responsible for the IEEE MOVE truck and associated equipment that is deployed to disasters to support emergency communications. Grayson has a background in digital communications, robotics, public safety and emergency response.

At Glance

- **When:**
  Date: August 27th, 2021
  Time: 4:00 – 6:00 PM (EST/EDT)
- **Where:**
  Online via Webex (to be shared only after you have a confirmed registration)
- **Audience: OPEN to ALL***

Sponsored by IEEE SE Michigan Computer Society, & Education Society Chapters

MOVE 5 YEARS COMMUNITY OUTREACH
AN IEEE-USA INITIATIVE

***Pre-Registration Required!**

https://events.vtools.ieee.org/m/278526

IEEE Education Society
IEEE COMPUTER SOCIETY
IEEE Advancing Technology for Humanity

The Great Chip Shortage

IEEE SE Michigan
Presents
"The Great Chip Shortage Story of 2021"

IEEE Southeastern Michigan
Electrical and Electronic Engineers Creating Our Future

The great chip shortage of 2021 is a current topic of discussion, in which the demand for integrated circuits is greater than the supply, impacting several industries and has led to major shortages and queues amongst consumers for video cards, video game consoles, cars and other electrical devices. This talk will give some background information plus a historical perspective as well. Disclaimer: We are not soothsayers, just researchers and purveyors of the facts.

Speaker Bio:

Sharan Kalwani is an industry technology specialist with 25+ years of experience. Sharan has degrees in both Engineering and Computer Science. He has worked in many diverse areas. He is a sought after speaker at many a diverse conference and seminars, such as Supercomputing, HPC Advisory Council, SIAM, Infiniband Trade Association, etc. He has delivered several tutorials, workshops and chaired Birds-of-a-Feather (BoF) sessions. Sharan is a senior member of IEEE-Computer Society, IEEE-Education Society and Vehicle Tech Society, an Emeritus member of Michigan!UNIX/user group (mug.org) the oldest of the *nix user groups based in Michigan (they were first established in late 1985), member of Association for Computing Machinery (ACM) and also leads the SIG-Linux section of SEMCO. He enjoys teaching, holds an Adjunct Faculty position at local educational sites. He has published one book and is now working on his second. He is a recipient of the IEEE MGA Achievement award for his contributions to IEEE activities in 2018.

At Glance

- **When:**
  Date: August 17th, 2021
  Time: 06:00 – 7:30 PM (EST/EDT)
- **Where:**
  Online via Webex (to be shared only after you have a confirmed registration)
- **Audience: OPEN to ALL***

Sponsored by IEEE SE Michigan Computer Society, & Education Society Chapters

***Pre-Registration Required!**

https://events.vtools.ieee.org/m/278527

IEEE Education Society

IEEE COMPUTER SOCIETY

IEEE Advancing Technology for Humanity

ORG UNITS cheat sheet

Section Unit Name or Affinity Group or Chapter Name (Organizational Unit is in parentheses)		
Consultants Network Affinity Group:	(CN40035)	
Life Members:	(LM40035)	
Young Professionals:	(YP40035)	
Women in Engineering:	(WE40035)	
Chapter: 01	(CH04049)	(SP01) Signal Processing Society, (CAS04) Circuits and Systems Society and (IT12) Information Theory Society
Chapter: 02	(CH04051)	(VT06) Vehicular Technology Society
Chapter: 03	(CH04053)	(AES10) Aerospace and Electronic Systems Society and (COM19) Communications Society
Chapter: 04 "Trident"	(CH04050)	(AP03) Antennas and Propagation Society, (ED15) Electron Devices Society, (MTT17) Microwave Theory and Techniques Society,
Chapter: 05	(CH04055)	(C16) Computer Society
Chapter: 06	(CH04056)	(GRS29) Geosciences and Remote Sensing Society
Chapter: 07	(CH04057)	(PE31) Power Engineering Society, (IA34) Industrial Applications Society
Chapter: 08	(CH04088)	(EMC27) Electromagnetic Compatibility Society
Chapter: 09	(CH04087)	(IE13) Industrial Electronics Society, (PEL35) Power Electronics Society
Chapter: 10	(CH04142)	(TEM14) Technology and Engineering Management Society
Chapter: 11	(CH04099)	(EMB18) Engineering in Medicine & Biology
Chapter: 12	(CH04103)	(CS23) Control Systems Society
Chapter: 13	(CH04113)	(E25) Education Society
Chapter: 14	(CH04115)	(RA24) Robotics And Automation Society
Chapter: 15	(CH04144)	(NPS05) Nuclear Plasma Sciences Society
Chapter: 16	(CH04125)	(CIS11) Computational Intelligence Society, (SMC28) Systems, Man and Cybernetics Society
Chapter: 17	(CH04128)	(NANO42) Nanotechnology Council

Section Unit Name or Affinity Group or Chapter Name (Organizational Unit is in parentheses)	
University Of Detroit-Mercy:	(STB00531)
Michigan State University:	(STB01111)
University Of Michigan-Ann Arbor:	(STB01121)
Wayne State University:	(STB02251)
Lawrence Technological University:	(STB03921)
Oakland University:	(STB06741)
Eastern Michigan University:	(STB11091)
University of Michigan-Dearborn:	(STB94911)

Curated & Maintained By

Sharan Kalwani,
Chair, IEEE SE Michigan Education Society Chapter
Vice-Chair, IEEE SE Michigan Computer Society Chapter
Editor, Wavelengths,
2018~2019~2020~2021

Activities & Events

We try to publish IEEE events in several places to ensure that everyone who may want to attend has all the available relevant information. **NOTE: The IEEE SE Michigan section website has changed to its new home, kindly make a note of it! The new home is located at http://r4.ieee.org/sem/ .** The old links will continue to work for some time, but will be changing permanently in the near future.

SEM Wavelengths:
https://r4.ieee.org/sem/about-sem/sem-history/wavelengths-magazine-archive/
This is our 'Active' event listing site where everyone should look first to see what events are scheduled for our Section in the near future.

SEM Web Calendar:
http://r4.ieee.org/sem/
Select "SEM Calendar" button in the top row of the website.

SEM Web Meetings:
http://r4.ieee.org/sem/
Select "SEM Meeting List" button in the left-hand column.

vTools Meetings:
http://sites.ieee.org/vtools/
Select "Schedule a Meeting" button in the left-hand column of buttons.

Other Happenings

Here are some of the non-IEEE functions that may be of interest to you or someone you know. Let us know if you have a special interest in a field that encourages technical study and learning, and wish to share opportunities for participation with members of the section. NOTE: You may need to copy the URL and paste it into your browser address bar.
Send details to: wavelengths@ieee-sem.org

Michigan Institute for Plasma Science and Engineering: Seminars for the 2018-2021 academic year:
http://mipse.umich.edu/seminars.php

Model RC Aircraft
http://www.skymasters.org

Model Rocketry
https://www.nar.org/find-a-local-club/nar-club-locator/

Astronomy
http://www.go-astronomy.com/astro-clubs-state.php?State=MI

Experimental Aircraft Association
https://www.eaa.org/en/eaa/eaa-chapters/find-an-eaa-chapter

Robots
https://www.robofest.net/index.php/about/contact-us

Science Fiction Conventions
https://2021.penguicon.org/

http://www.confusionsf.org/

Mad Science
http://www.madscience.org/

ESD PE Review Class
https://www.esd.org/programs/pe/

Maker Faire:
https://swm.makerfaire.com/

Executive Committee

The SEM Executive Committee is the primary coordination unit for Southeastern Michigan (SEM) IEEE operations. The basic organization chart below shows the 2019/2020/2021 arrangement of communications links designed to provide inter-unit coordination and collaboration.

The SEM Executive Committee meets in a teleconference each month on either the first Wednesday or first Thursday at noon. The specific meeting days, times, phone or WebEx numbers and log in codes are published on the IEEE SEM Website calendar: **http://r4.ieee.org/sem/** Click on the "Calendar" button in the top banner on the first page of the web site.

If you wish to attend, or just monitor the discussions, please contact **Bhupinder Mavi**, the section secretary at: **bmavi@outlook.com,** and request to be placed on the distribution list for a monthly copy of the agenda and minutes. More meeting details are available on the next page of this newsletter.

Other Meetings:
About half of our members maintain memberships in one or more of the IEEE technical societies, which automatically makes them members of the local chapter which is affiliated with that society. As a result, they should receive notices of the local chapter meetings each month.

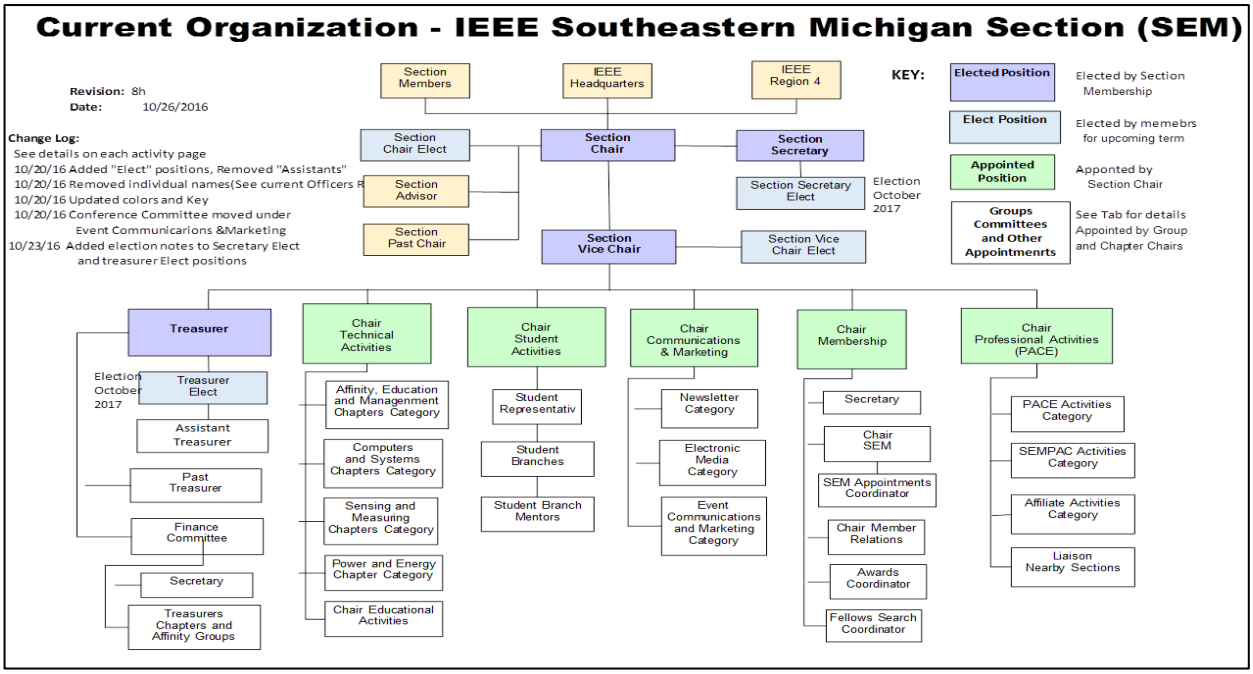
However, members of the section may have multiple technical interests and would like to have meeting information of other chapters. In order to communicate the meeting dates of all the chapters, affinity groups etc., to our members to facilitate their attendance, leaders of the groups are requested to send meeting information to our webmasters for posting on section's calendar.

More detailed information on meetings may be found through the IEEE SEM Website: **http://r4.ieee.org/sem/** and clicking on the **SEM meetings list** button near the bottom of the left-hand banner.

Automatic e-mail notification of web updates may be received using the "**Email Notifications**" button at the top of the **SEM Tools/Links** side banner.

Bhupinder Mavi - SEM Secretary 2021

Download the complete SEM Organization Chart, in PDF format, from our Website at: http://r4.ieee.org/sem/
Click on "About SEM" Tab and "Current Officers" ***(NOTE: this is now password protected)***



ExCom Meeting Schedule

NOTE: All SEM members are invited to attend ALL ExCom (executive committee) meetings:

Below is the 2021 schedule for the Section ExCom meetings with links to add the events to your calendar. It is important that at least one person from each Chapter/Affinity Group attends each scheduled ExCom meeting. Information on each Face-to-Face (in-person) Meeting will be sent out once the venue is confirmed.

Please mark your calendars for the 2021 meetings. Or, link your personal calendar to the SEM Web calendar.

Section Administrative Committee (ExCom) Meeting Schedule for 2021:

Note: All IEEE Members are welcome at any IEEE meeting, at any time but please register so we can be sure to accommodate you. This month's meeting is highlighted in **Bold**.

2021 Meeting Schedule:

ExCom Meeting	*Date & Time*
SEM Section ExCom Monthly Meeting (Teleconference) for August 2021	**8/5/2021 18:30**
SEM Section ExCom Monthly Meeting (Teleconference) for September 2021	9/1/2021 18:30
SEM Section ExCom Monthly Meeting (Face-Face) for October 2021	10/7/2021 18:30
SEM Section ExCom Monthly Meeting (Teleconference) for November 2021	11/4/2021 18:30
SEM Section ExCom Monthly Meeting (Teleconference) for December 2021	12/1/2021 18:30

Bhupinder Mavi
SEM Secretary 2021
bmavi@outlook.com

Letters to the Editor

As promised, we have now started a "Letters to the Editor" column. Letters, bouquets, brickbats, suggestions, advice, feedback, opinions may be sent to:

letters@ieee-sem.org

To the Editors of Wavelengths:

Please note that elections for our Section leadership is rapidly approaching with nominations for officers in our Section Executive Committee, as well as in our 'Geo-units' (Chapters and Affinity Groups). Student Branches and HKN Chapters arrange their own elections based on what their leadership considers best.

The first step in the election process is to gather nominations for each office. Everyone in the Section will receive a link to a survey system that will gather the names submitted for each office in all the positions.

Why a survey?
With 4 Affinity Groups, 17 Technical Chapters and the Executive Committee for the Section and the Chair, Secretary, Vice-Chair and Treasurer positions to fill that amounts to (4 + 17) X 4 + 2 = 74 offices! (Note: the '+2' accounts for the Excom (Executive Committee) where we elect half the new officers each year and give them a year of 'training' before they fully 'take office' for 2 years).

With that many offices to fill, and potentially about 2,500 Section members who may either self-nominate, or nominate someone they know, it was decided to use the survey system to help sort through all those nominations.

Some have objected to the survey system in the past. Before we begin using it in 2021, the Nomination & Appointment Committee would like to hear from anyone with a proposal for a 'better' system.

Officers for the Nomination & Appointment Committee may be found on the SEM Webpage at: https://r4.ieee.org/sem/ under the TAB: About SEM as the "Organization Roster". Or directly download the complete PDF from: https://r4.ieee.org/sem/wp-content/uploads/sites/6/2021/04/Organization_Roster_4.6.2021.pdf

Do a quick search for 'Nomination' and our list of officers will show up along with their email addresses. (Change the -AT- to @ and you are good to go.)

Regards,

kw Kimball Williams DE N8FNC
NCE / ARRL #0001247589, FISTS #17391, LICW #160, MIQRP #M-1951, NAQCC # 10610, QRP-ARCI #16639, SKCC #22177,
k.williams AT ieee.org IEEE SEM Section Information Management Coordinator and Curmudgeon at Large
Ph: 313-355-4396 (Note: This phone is only enabled for US and Canadian calls.)
"A friend is not a fellow who is taken in by sham
A friend is one who knows our faults and doesn't give a damn"
--Unknown.

Previous editions in this series may be found on the IEEE SEM website at: http://r4.ieee.org/sem/. Click on the "Wavelengths" button in the top row of selections.

Comments and suggestions may be sent to the editorial team at wavelengths@ieee-sem.org
OR
sharan.kalwani@ieee.org
d.romanchik@ieee.org
nilesh.dudhaia@ieee.org
k.williams@ieee.org
cgjohnson@ieee.org
lunnmalcolm@me.com
akio@emcsociety.org

We rely on our officers and members to provide the 'copy' that we finally present to readers of the newsletter.

IEEE SOUTHEASTERN MICHIGAN – WAVELENGTHS

The **Wavelengths Focus Plan and Personal Profiles** plan shown in the matrix below is presented to ensure coverage of section activities and events.

We try to complete the newsletter layout a week before the first of the month to allow time for review and corrections. If you have an article or notice, please submit it two weeks before the first of the month or earlier if possible.

The plan below relies on the contributions of our members and officers, so please do not be shy. If you have something that should be shared with the rest of the section, we want to give you that opportunity.

We always encourage all chapters and student branches to share news of activities (both past and future) in their arenas. Please feel free to share any and all information so your peers, colleagues can hear about all the good work you do.

Quote*:*
"If a tree falls in a forest and no one heard it, how do you know it actually fell??"

So publicize your work, one never knows when it can pay off!

Editors:

We are always looking for members interested in helping to edit the newsletter. The process is always more fun with more people to share the duties. Having more participants and contributors also helps us keep the newsletter interesting.

Join the Team:

If you feel you might like to join the team, or would like to train with us, please contact one of us at:
wavelengths@ieee-sem.org

Sharan Kalwani,
Chair, IEEE SE Michigan Education Society Chapter
Vice-Chair, IEEE SE Michigan Computer Society Chapter
Editor, Wavelengths,
2018~2019~2020~2021

Wavelengths Annual Publication Plan for Articles

Month	AG's	Ch's	Ch's	SB's	Special Notice	Reporting Events	Monthly Focus	Awards
Jan		*1*		*OU*	*New Year Officers*	*Officer's Welcome*	*The Year Ahead*	
Feb	*Cons*	*2*		*MSU*	*Science Fair Judges*	*National Engrs Wk.*	*Surviving Winter*	
Mar		*3*	*13*	*EMU*	*Elections - Prep*			
Apr		*4*		*U/M-D*		*ESD Gold Awards*	*Chapter Focus*	
May	*Life*	*5*	*14*			*Science Fair*		
Jun		*6*					*Leadership Skills*	
Jul		*7*	*15*				*Students Issues*	
Aug	*WIE*	*8*			*Nominations Call*		*Womens Issues*	
Sep		*9*	*16*	*LTU*	*Ballots*	*Engineers Day?*	*Professional Skills*	
Oct		*10*		*U/M-AA*	*Elections!*	*IEEE Day*		
Nov	*YP*	*11*	*17*	*WSU*	*Election Results*	*New Fellows*		
Dec		*12*		*U/D-M*	*IEEE-Com Apmts.*		*Happy Holidays*	*R4 Nom*

Wavelengths Annual Publication Plan for Personal Profiles

Month	Profiles	Profiles	Committees
Jan	Chair	New Officers	ExCom
Feb	Treasurer		Communications
Mar	Secretary		Conference
Apr	Stud-Rep		Education
May	V-Chair		Executive
Jun	Sect-Adviser		Finance
Jul	Sr Officers		Membership
Aug			Nominations
Sep			PACE
Oct			Student Activiies
Nov			Technical Activiies
Dec	Editor-WL		

IEEE Southeastern Michigan
Electrical and Electronic Engineers Creating Our Future

Web & Social Sites

SEM Website
http://r4.ieee.org/sem/

Each of the sites below may be accessed through the SEM Website:

Section Website Event Calendar
(Select the "SEM Calendar" button - top row)

SEM Facebook Page
(Select the "" button under the top row)

SEM LinkedIn Page
(Select the "" button under the top row)

SEM Twitter Account (new)
(Select the "" button under the top row)
Or try https://www.twitter.com/ieeesemich

SEM Officers:
For a complete listing of all - Section - Standing Committee - Affinity Group - Chapter and Student Branch Officers, see the SEM Officers Roster on the SEM web page under the "About SEM" button and select "Current Officers."

Section Officers

Section Chair
David Mindham

Section Vice-Chair
Sharan Kalwani

Section Secretary
Bhupinder Mavi

Section Treasurer
Colleen Chmielewski

Standing Committees:

Section Adviser
Don Bramlett

Wavelengths Editor
Sharan Kalwani

Chair Educational Activities
Christopher Guirlanda

Chair Finance
Sharan Kalwani

Chair Membership Development
Sharan Kalwani

Chair Nominations & Appointments
Kimball Williams

Chair Professional Activities (PACE)
Sharan Kalwani

Chair Student Activities
Mel Chi

Student Communications Coordinator
Michael Anthony

Student Representative

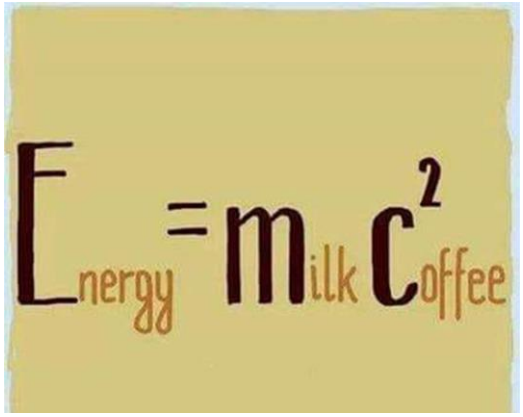
Chair Technical Activities
Jeffery Mosley

IEEE Southeastern Michigan

Electrical and Electronic Engineers Creating Our Future

IEEE Southeastern Michigan

Visit Us on the Web at:
http://r4.ieee.org/sem



Advertising Rates

SEM Website & Newsletter

Leadership Meetings

SEM Executive Committee Monthly Teleconferences:

- 1st Wednesday or Thursday of Each Month @ Noon
- Check the Section Web Calendar at:
  http://r4.ieee.org/sem/sem-calendar/
  (Select the "SEM Calendar" button in the top row.)

SEM Executive Committee Face-to-Face Meetings:

- Once every Qtr. Find the location, and Registration at:
  http://bit.ly/sem-ieee

SEM Standing Committee Meetings:
SEM Affinity Group Meetings:
SEM Technical Society/Chapter Meetings:
SEM University Student Branch Meetings:

- Meeting schedules are announced on SEM Calendar
  http://r4.ieee.org/sem/
  (Select the "SEM Calendar" button in the top row.)

- Registration for all at:
  http://bit.ly/sem-upcoming