



# Wavelengths

**Volume 56 – Issue 5 May 2016**

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*Wavelengths Newsletter is produced by IEEE volunteers for SEM Members.  
Archive: <http://sites.ieee.org/sem/>*

## SEM Calendar

### Section/Chapter Meetings, Webinars:

- SEM – 5/5 Executive Committee Meeting WebEx [\(more\)](#)
- CH3 and SSIT – 5/19 UAV Integration into National Air Space in Farmington Hills [\(more\)](#)
- CH\_ 5/20 – IEC 61850 Overview and Applications in Detroit [\(more\)](#)
- CH 14 5/21 - Robotic hand capable of learning sign language for 5/21 at LTU [\(more\)](#)
- Ch7 – 5/24 University of Michigan Battery Lab Tour in Ann Arbor [\(more\)](#)
- CH8 – 6/16 Automotive EMC Consulting in Ann Arbor [\(more\)](#)

### Conferences and Seminars:

- ESD – 5/3 Energy Conference and Exhibition 2016 in Novi [\(more\)](#)
- CST Software Modeling North American Automotive Workshop in Dearborn– May 4th [\(more\)](#)
- CH 8 – 5/5 EMC Fest Lecture and Networking in Livonia [\(more\)](#)
- June 27-30 ITEC (Transportation Electrification Conference) in Dearborn [\(more\)](#)

### Career and Member Development:

- IEEE Technical Communities to try at no cost for limited time [\(more\)](#)
- 7/13 Consultants Affinity Group Summer Networking Event in Royal Oak

### Positions Available:

- SEM list is available at link [\(more\)](#)
- 5/9 ESD Engineering and Technology Job Fair in Novi [\(more\)](#)

**Chair's Message****e-Wavelengths:**

As you can tell from our last edition and this one, we are moving to a new format. Our integration team has been very active and the feed back so far has been very positive. As always, your suggestions are welcome.

**SEM Web Site:**

Did you notice our web site, [www.ieee-sem.org](http://www.ieee-sem.org), has also changed it's format. That actually happened two months ago with little fan-fare. The development of the new SEM Website is intended to make your visitor's experience more friendly and require less effort to find what you are looking for. Yep, your suggestions are also welcome regarding this change.

**Volunteering:**

The Nominations and Appointments committee is actively pursuing candidates for open volunteer positions within our organization. There are Chapter and Affinity group positions available that will fit your technical interests and Section positions that will grow your soft skills and leadership abilities. Look for open positions in the Current Officers listing under the "About SEM" tab at the SEM web site. Contact Kimball Williams with your interests and questions at [k.williams@ieee.org](mailto:k.williams@ieee.org)

**Spring Conference:**

Congratulations to the Organizing Committee for a very good Spring Conference.

**Fall Conference:**

Plans are already underway for the Section Fall Conference. The organizing Committee can use your volunteer assistance. Please contact our chair, Nevrus Kaja at [nkaja@umich.edu](mailto:nkaja@umich.edu).

**WIE Conference:**

Plans are underway for a Women in Engineering Conference (WIE) this Fall. SEM Section will participate with the IEEE International WIE Affinity Group in organizing this event. Please watch for announcements as the plans firm up for this very timely and important summit.

**Financial Audit:**

IEEE Internal Audit Department has randomly chosen to audit our 2015 financial records. This is a normal internal procedure done by many organizations and companies. Our records and NetSuite entries have been very well documented by our treasurer last year, Harry Hill. Harry and I have submitted digital copies of our records for the auditors to examine.

I look forward to hearing from you and seeing you at our events. As always, your ideas and suggestions are encouraged and welcome.

**Robert Neff**

**IEEE SEM Section Chair**

[RLNeff1@gmail.com](mailto:RLNeff1@gmail.com)

**On-Line Newsletter!**

From the SEM calendar on page one you see that the Wavelengths newsletter is changed, from the March issue the transition to e-Wavelengths is starting. April and May are transition and the format is starting to emulate what will be an online document. We have progress in the discussion with Paul Wesling from San Francisco IEEE Section on this and draft webpage started to be populated, will be active in mid May.

One of constant struggles being waged in this digital age is the need to keep everyone in large, diverse organizations informed of time sensitive and/or critical events. This shows up in our monthly newsletter when we learn of events of interest to our members only a few days before the event or after the monthly publication date has passed and the current issue already released into your hands.

Following the lead of the successful "e-grid" on-line publication used by the IEEE San Francisco Bay Area Council, we are currently nearing the final planning stages of converting our monthly 'published' PDF newsletter into a 'Live' on-line version that will present as 'up to the minute' information on local activities as possible.

However, we don't want to lose the monthly 'summary' publication. The plan is to 'capture' those elements that record what happened during the last 30 day period and 'lock' it in a PDF format that can continue to be our 'monthly newsletter' and social record of what has happened, while still giving everyone the most current new information possible.

If you are interested in being part of this evolution of SEM please see page 17 for our e-Wavelengths contacts and reply to us to participate. Your contributions are and response to format, suggestions are welcome.

## IEEE Acquires GlobalSpec



Dear Robert Neff,

It is my privilege to share some very exciting news. IEEE has acquired GlobalSpec from IHS. Please click [here](#) to read our press release.

The synergy resulting from this combination of two leading engineering brands diversifies and broadens IEEE's offering to industry, thereby addressing some of the identified needs of that sector of the engineering community.

Your valued engagement with IEEE will not change. Member operations and engagement continue as normal, but with great synergies and significantly expanded offerings now available for our global engineering community going forward.

Please join me in enthusiastically welcoming IEEE GlobalSpec to the IEEE family.

Sincerely,

Barry L. Shoop  
IEEE President & CEO

If you have questions about this mailing, or need assistance, please direct your inquiries to the [IEEE Contact Center](#). Replies to this message do not reach IEEE.

If you would like to be removed from this email distribution, please [Unsubscribe from List](#). If you have unsubscribed in error, please [Subscribe to List](#).

IEEE • 445 Hoes Lane, Piscataway, NJ 08854 USA

The site delivers a unique information experience, comprised of:

- News & Analysis – authoritative content, including industry/market news and perspectives, analysis, insights and critical information, driven by a seasoned editorial staff
- Products & Suppliers – more than 122 million parts from suppliers across numerous industrial sectors, searchable by specification
- Standards Directory – access to metadata and abstracts for 1.6 million standards documents
- Reference Library – a gateway to more than 95 million engineering documents, including technical articles, reports, publications, patents, and e-books
- Engineering Community – an established online community in the engineering/industrial space, offering forums, blogs and related resources

"IEEE GlobalSpec delivers an unparalleled depth and quality of highly relevant content critical to the worldwide technical community. Professionals can utilize IEEE GlobalSpec to research, compare and price components, download reference material, research industry standards and patent information, review product datasheets, and interact with the global engineering community," said IEEE Executive Director E. James Prendergast. "IEEE GlobalSpec is destined to drive new research efficiencies and productivity opportunities for academic and corporate users by harnessing powerful insights and expert analysis, from specifications to expert marketplace analysis."

#### IEEE GlobalSpec At-A-Glance

- |  |  |                                |
|--|--|--------------------------------|
| • More than 8 million registered users | • 220 million indexed technical webpages | • 82,000 product announcements |
| • 95 million technical documents       | • 1,100+ annual newsletter editions      | • 63,000 digitized catalogs    |
| • 200+ million datasheets              | • 200,000+ suppliers                     | • 835 specification guides     |

IEEE Technical no cost



Dear Robert Neff,

I would like to make you aware of the opportunity to join one or more IEEE Technical Communities **at no charge.**

Because of the rate at which new technical fields evolve, it is important to create nimble communities focused on fast-growing topic areas. These communities facilitate knowledge-sharing, collaboration, and the development of programs which challenge established technologies through novel research and applications. Some communities are still in the incubation phase, recruiting thought leaders and volunteers for communications, meetings or conferences, and developing plans for programs of interest. Other communities are more established, with information/news portals, community communications, and other ways in which those interested in the technology area can connect and work for change.

Currently, there are sixteen technical communities in which you can participate at no charge. On behalf of IEEE, I would like to invite you to learn more about these communities **NOW** by following the icons/titles below. Each will bring you to the IEEE Membership and Subscriptions Catalog, which will provide more information as well as the ability to join these communities for free.

You can sign up for any of these communities, regardless of your IEEE and Society affiliation.


Come with us and be a part of a community that will take you to the next level of technology!

Regards

José M. F. Moura  
Vice President - IEEE Technical Activities

**ESD Energy Conference**

Reaching Over 60,000 Engineers



Representing Over 3,000 Companies

- About ESD
- Affiliates
- Awards
- Committees
- Events & Education
- Job Services
- Membership
- Publications
- Members Only

HOSTED BY:



**Energy Conference & Exhibition 2016**

*Hosted by DTE Energy and The Engineering Society of Detroit*

**Conference Theme: Energy Efficiency**



**May 3, 2016**  
Suburban Collection Showplace

In its 19th year, this conference, the only one of its kind in Michigan, is designed to educate small-to-large commercial and industrial businesses on energy technology, products, and services that will assist them in successful energy management.

DIAMOND SPONSORS:



This year's conference will include:

- A luncheon featuring a panel presentation focusing on Michigan-made advanced lighting and controls
- Educational tracks – technology, industrial, commercial and financial – offering informative 30-minute presentations
- Dozens of exhibitors offering energy-related products and services
- Major awards recognizing energy efficiency initiatives
- A ride-and-drive featuring a fleet of new vehicles, as well as classic cars



**Cost to Attend:**  
\$85 Member  
\$100 Non-Member

SILVER SPONSORS:

**To Register:**  
To register online, call 248-353-0735, ext. 222, to register by phone.



**Interested in Exhibiting or Sponsoring?**

Click on the link to the left to download exhibitor and sponsorship information, or contact Leslie Smith, CMP, at [lsmith@esd.org](mailto:lsmith@esd.org) or 248-353-0735, ext. 152.



**UAV's in National Air Space**




## UAV Integration into the National Air Space

*Co-sponsored by Kimball Williams*

IEEE SEM Chapter 3 invites interested members and non-members to attend the FREE reception / network & meeting of the Joint Aerospace Electronics and Communications Societies Chapter followed by a presentation by our Chair, Phil Hall on the current state of drone integration into the aerospace..

After the general meeting, planning for the development of a SEM Chapter for the Society on the Social Implacations of Technology (SSIT) will take place, with any interest parties invited to take part.

### When

Date: 19-May-2016  
Time: 05:30PM to 09:00PM (3.50 hours)  
All times are: US/Michigan  
 [Add Meeting to Calendar](#)

### Where

SiriusXM Building: Suite B-3  
27200 Haggerty Rd Room Number: Large Meeting Room  
Farmington Hills, Michigan  
United States 48331

### Who

[Email meeting contact...](#)

### More

**No Admission Charge.**

### Registration

[Click Here to Register](#)

### Speaker

#### Phil

Topic: **UAV Integration into the National Air Space**

Email: [philip@faerberhall.com](mailto:philip@faerberhall.com)

Address: Ann Arbor, Michigan, United States

### Agenda

5:30-6:30pm Ch3 Excom Meeting  
6:30-7:00pm Ch3 General Meeting (all welcome / Refreshments / Networking)  
7:00-8:00pm Ch3 Technical Session on "UAV Integration into the National Air Space" (Philip Hall), including Q&A  
8:00-8:30pm SSIT planning discussion (allows those not interested to leave)


## UM Battery Lab Tour

### University of Michigan Battery Lab Tour

Join us for a tour of the University of Michigan Battery Lab Tour.

Dedicated in Fall 2013 and newly open for business, the Battery Fabrication and Characterization User Facility is a space developed in cooperation with the Michigan Economic Development Corporation and Ford Motor Company. This lab enables industry and university researcher collaboration on developing cheaper and longer lasting energy-storage devices in the heart of the U.S. auto industry. The new facility — for prototyping, testing and analyzing batteries and the materials that go into them — promises to be a key enabler for Southeast Michigan's battery supply chain. It will bring together materials scientists and engineers, as well as suppliers and manufacturers, to ease a bottleneck in battery development near the nation's automotive capital. The new lab will be available for any firm to use. It will also allow students to use state-of-the-art equipment while working closely with experts. The Energy Institute envisions the new facility as a safe zone for non-competitive collaboration.

#### When

Date: 24-May-2016  
Time: 05:30PM to 06:30PM (1.00 hours)  
All times are: US/Eastern  
 [Add Meeting to Calendar](#)

#### Where

2301 Bonisteel Blvd  
Ann Arbor, Michigan  
United States 48109

#### Who

[Email meeting contact...](#)

#### More

**No Admission Charge.**

## Agenda

**5:15 P.M.:** We'll meet at Battery Lab. Parking is free after 5 PM, but can be tricky. Parking maps are available on UofM's website.

**5:30 P.M.:** Tour starts

Once the tour ends, people that are interested can meet at Jolly Pumpkin in Ann Arbor for dinner/networking.

[https://meetings.vtools.ieee.org/meeting\\_registration/register/38354](https://meetings.vtools.ieee.org/meeting_registration/register/38354)

Seminar: EMC Test Setup

**NORTH AMERICAN  
AUTOMOTIVE WORKSHOP 2016**

KEYNOTE TALKS

**MAGNA ELECTRONICS**

"Automotive EMC Test Setup Grounding  
Dissimilarities"

Andrew R. Macko  
*Electromagnetic Compatibility Technical Specialist,  
Chief Engineering Group*

**GM**

"Using Electromagnetic Simulation for  
Developing Automotive EMC Design Guidelines"

Scott Piper  
*EMC Engineer*

**TEXAS INSTRUMENTS INCORPORATED**

"Power Switch Technology in EMC"

John Rice  
*Power Systems Engineer, Senior Member Technical Staff*

**FORD MOTOR COMPANY**

"Automotive Radar Application"

John F. Locke  
*Technical Specialist, RF & Antenna Subsystems*

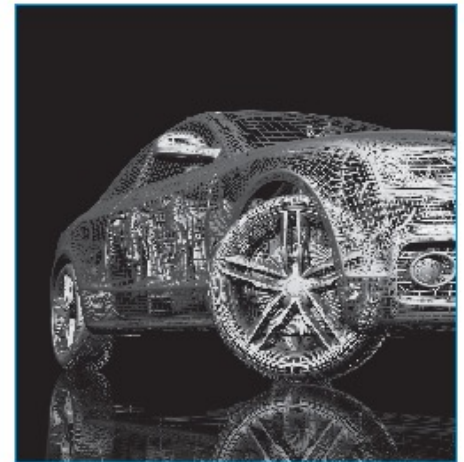


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CST ANNOUNCES  
NORTH AMERICAN  
AUTOMOTIVE  
WORKSHOP 2016



4th May, 2016  
Dearborn, Michigan  
United States



## Robotic Hand Learning

### Robotic hand capable of learning sign language

**Description:** This talk demonstrates the progress of a robotic hand capable of learning sign language. The device was originally created as an undergraduate senior design project at University of Michigan-Dearborn. Subsystems included are motion control algorithms, 3-dimensional design, custom PCB, and Android control via Bluetooth.

**Aaron:** Aaron Romain is currently a design engineer at Acromag, Inc. He recently graduated with distinction from University of Michigan-Dearborn with Bachelor of Science in Engineering degrees in both Computer Engineering and Electrical Engineering. He has previously earned a Bachelor of Arts degree in Economics, also from University of Michigan-Dearborn.

**Aalisa:** Aalisa Sharma was an Electrical Engineer Intern at DTE Energy. She recently graduated from University of Michigan-Dearborn with a Bachelor of Science degree in Electrical Engineering. She moved to the United States of America with her family 6 years ago to pursue a better education.

**Jeffrey:** Jeffrey Taylor is currently completing an internship at DTE Energy. He recently graduated from the University of Michigan-Dearborn with Bachelor of Science in Engineering degrees in both Electrical Engineering and Computer Engineering. He is currently seeking a full-time position before entering the dual MBA/MSM program at Walsh college.

**Debora:** Debora Ago is currently a Controls Intern at Ford Motor Company. She will be graduating in December of 2016 with a Bachelor of Science in Electrical Engineering. She is president of Eta Kappa Nu and a IEEE member. She has previously worked as an EMC Test Intern at TUV SUD.

**Location:** Lawrence Technological University

**Address and directions to LTU:** <http://www.ltu.edu/sitemap/directions.asp>

**Room:** M218

**Building:** Management Bld. No. 2 building on this map at: <http://www.ltu.edu/map/LTU-Campus-Map.pdf>

**Parking:** Use parking lot C <http://www.ltu.edu/map/LTU-Campus-Map.pdf>

#### When

**Date:** 21-May-2016

**Time:** 10:00AM to 11:30AM (1.50 hours)

All times are: America/Detroit

[Add Meeting to Calendar](#)

#### Where

21000 W 10 Mile Rd  
Southfield, Michigan  
United States 48075

**Building:** Management Bld. No. 2  
**Room Number:** M218

[Click here for Map](#)

#### Who

[Email meeting contact...](#)

#### More

**No Admission Charge.**

#### Registration

[Click Here to Register](#)

#### Agenda

10:30 AM - Brief Introduction

10:35 AM - Technical Talk

11:35 AM - Closing Remarks

Free refreshments

## IEC 61850 Overview

## IEC 61850 Overview and Applications

## Abstract:

This seminar is a short introduction to IEC 61850, with a focus on general understanding of the basic concepts, and some overview of simple applications. Registration is required and limited. Please register early to ensure your space.



2 PDHs will be provided by the IEEE Southeastern Michigan Section.

## When

Date: 20-May-2016  
 Time: 12:00PM to 03:00PM (3.00 hours)  
 All times are: US/Eastern  
[Add Meeting to Calendar](#)

## Where

One Energy Plaza  
 Detroit , Michigan  
 United States  
 Building: DTE Energy

## Who

[Email meeting contact...](#)

## More

**No Admission Charge.**

## Registration

[Click Here to Register](#)

## Speaker

## Rich Hunt

## Biography:

Rich Hunt is a Market Development Leader with GE Digital Energy, focusing on IEC 61850 solutions and strategies for protection and control systems. Rich has over 25 years of experience in the electric power industry with both utilities and solution providers. Rich earned the BSEE and MSEE from Virginia Tech, is a Senior Member of IEEE, a member of the Main Committee of the IEEE Power System Relaying Committee, the U.S. representative to the CIGRE B5 Technical Committee, a member of IEC TC57 WG10, and is a registered Professional Engineer.



## Agenda

## Agenda:

1. **The 2 basic concepts contained in 61850**
2. **An overview of how 61850 implements the 2 basic concepts**
3. **Communications methods used in 61850**
4. **Data vs. services**
5. **61850 configuration**
6. **Application examples**

**EMC Fest 2016**

The Southeastern Michigan EMC Chapter  
Proudly Presents:  
**EMCFest '2016**

**“The Bruce-Lee Show”**

A Tutorial and Exhibition  
With Honored Guest Speakers

**Bruce Archambeault  
&  
Lee Hill**

**Thursday, May 5, 2016  
At**

**Embassy Suites** 19525 Victor Parkway,  
Livonia, MI 48152 Ph.734-462-6000

IEEE Electromagnetic Compatibility (EMC) Society.  
EMCFest'2016 Home Page:

<http://www.emcfest.org>

**Register On-Line!**

Bruce Archambeault and Lee Hill are both well known to the EMC community as experts in the areas of EMC modeling and EMC Field problem resolution. Both also lecture and teach EMC classes in the industrial and academic environment.

**Program Outline -- Thursday May 5, 2016**

6:00	Vendor Table Setup (till 8:30)
7:30	REGISTRATION & EXHIBITS CONTINENTAL BREAKFAST
8:30	Bruce: The Ground Myth: The term "ground" is probably the most misused and misunderstood term in EMC engineering, and in fact, in all of circuit design.
10:00	Break & Exhibits
10:30	Lee - Mastering the 4 Noise Paths for Fast, Efficient EMC Troubleshooting
12:00	LUNCH
1:00	Bruce: Decoupling PCB's for EMC and Functionality in the Real-World
2:30	Break 7 Exhibits
3:00	Lee – EMC Troubleshooting tools and techniques for emissions and immunity
4:30	Ice Cream Reception
5:00	Close of EMCFest



**Bruce Archambeault**, is an IEEE Fellow, an IBM Distinguished Engineer Emeritus and an Adjunct Professor at Missouri University of Science and Technology. He has taught numerous seminars on EMC and Signal Integrity including Oxford University. He is the author of “PCB Design for Real-World EMI Control” and lead author of “EMI/EMC Computational Modeling Handbook” and published numerous papers.

EMCFest'2016 Home Page:

<http://www.emcfest.org>

**Register On-Line!**



**Lee Hill, MSEE MS&T**, is Founding Partner, SILENT Solutions LLC since 1992. Lee and business partner, Randal Vaughn, provide EMC troubleshooting services, design reviews, and EMC courses worldwide. Lee teaches EMC at University of Oxford and also a graduate EMC course at Worcester Polytechnic Institute (WPI) in Worcester, MA

**FEE SCHEDULE**

IEEE Members, Registered before April 24	<b>\$50</b>
Non IEEE Members, Registered before 24	<b>\$75</b>
Full –time Students with copy of valid Student I.D.	<b>\$25</b>
Unemployed / Retired IEEE Member	<b>\$25</b>
CEU Certificate Only	<b>\$25</b>
All Registrations after April 24 <sup>th</sup>	<b>\$100</b>

**H-1B Visa Petition:**

From: **Russell Harrison** <[r.t.harrison@ieee.org](mailto:r.t.harrison@ieee.org)>  
Date: Sun, Jan 24, 2016 at 2:37 PM  
Subject: IEEE-USA Petition Needs Support  
To: Russell Harrison <[r.t.harrison@ieee.org](mailto:r.t.harrison@ieee.org)>

**IEEE Leaders:**

Many of you have seen the article in Insight about IEEE-USA's new attack on the H-1B visa program.  
(<http://insight.ieeeusa.org/insight/content/policy/255071>)

In brief, we believe that the use of H-1B visa to replace American workers represents intentional discrimination against Americans because of their citizenship - which is illegal under the law.

As part of this effort, we have created an online petition asking the U.S. Attorney General to launch an investigation into H-1B outsourcing. We already have 200 signatures on the petition, but we need more.

The petition can be found here: [https://www.change.org/p/attorney-general-of-the-united-states-stop-h-1b-discrimination-against-americans?recruiter=460476742&utm\\_source=share\\_petition&utm\\_medium=copylink](https://www.change.org/p/attorney-general-of-the-united-states-stop-h-1b-discrimination-against-americans?recruiter=460476742&utm_source=share_petition&utm_medium=copylink)

Please take a moment to add your name to the petition. In politics, numbers matter. The more names on the petition, the more likely it will generate a response. We believe that the law is on our side, but the U.S. Department of Justice is a busy place. It will take many voices to get their attention.

After you have signed, please send this e-mail to anyone else you think might be willing to help.

Thank you for your help. This should only take you a minute or two to do, but could have a profound impact on the H-1B visa program.

Russ

--

Russell Harrison  
Director, Government Relations

IEEE-USA  
2001 L St, NW: Suite 700  
Washington, DC 20036  
([202](tel:2025308326)) 530-8326



ITEC Conference**ITEC2016**

COMPONENTS, SYSTEMS, AND POWER ELECTRONICS-  
FROM TECHNOLOGY TO BUSINESS AND PUBLIC POLICY  
**JUNE 27 TO 29, 2016**

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keyword...

SEARCH

**Home**

**ITEC 2016 Preliminary Program Now Available! Click [Here To View](#).**

**Early Registration Deadline Is Coming Up On April 8th!**

Please Click [Here](#) To Register And Receive The Discounted Price.

**Important Dates:**

**Deadline for submission of camera-ready manuscript has been extended to: April 15, 2016**

Deadline for early registration: [April 8, 2016](#)

[Sign up for email updates and more information!](#)

**Conference Location:****[Royal Dearborn Hotel & Convention Centre](#)**

600 Town Center Drive,  
Dearborn, Michigan, USA 48126-2793

Please note that the reservation code for Edward Village Michigan Hotel & Convention Center has changed to the new booking code: **619**

ITEC is aimed at helping the industry in the transition from conventional vehicles to advanced electrified vehicles. The conference is focused on components, systems, standards, and grid interface technologies, related to efficient power conversion for all types of electrified transportation, including electric vehicles, hybrid electric vehicles, and plug-in hybrid electric vehicles (EVs, HEVs, and PHEVs) as well as heavy-duty, rail, and off-road vehicles and airplanes and ships.

## Automotive EMC Consulting

Southeastern Michigan IEEE EMC Chapter technical meeting.

**\*\*\* Note the New Meeting Location: TBD \*\***

**Pizza Sponsors: Needed - contact [scott@emcsociety.org](mailto:scott@emcsociety.org)**

Parking Information: [http://sites.ieee.org/sem/files/2016/02/UofM\\_Ann\\_Arbor\\_Parking.pdf](http://sites.ieee.org/sem/files/2016/02/UofM_Ann_Arbor_Parking.pdf)

Event Flyer: [http://www.ieee-sem.org/2016%20Conferences/IEEE\\_TridentSpeakerSeries\\_KateRemley\\_Announce.pdf](http://www.ieee-sem.org/2016%20Conferences/IEEE_TridentSpeakerSeries_KateRemley_Announce.pdf)



## When

Date: 16-June-2016  
Time: 05:30PM to 07:30PM (2.00 hours)  
All times are: US/Michigan  
[Add Meeting to Calendar](#)

## Where

19000 Hubbard Building: University of Michigan - Dearborn  
Dearborn, Michigan Room Number: TBA  
United States 48126

## Who

[Email meeting contact...](#)

## More

**No Admission Charge.**

## Registration

[Click Here to Register](#)

## Speaker

**Arnie Nielsen** of Arnie Nielsen Consulting LLC

Topic: **Automotive EMC Consulting - An Improv Approach, How Hard Can It Be?**

## Abstract

This presentation will address three topics. The first will be inexpensive test equipment and procedures used for solving issues where keeping costs low is essential. This is especially important for solving issues that may take a lot of time to resolve since most EMC labs are fully booked and expensive. The second topic is how specific issues were solved and lessons learned during my consulting. Examples will include Tire Pressure Monitoring Audit System, Electronic Throttle Control, Chevy Volt battery pack electronics, DVD headrest system, Sequential LED taillights, LED fog lights, shielding evaluation for sensitive RF receivers and Independent Toyota unintended acceleration investigation (Edmonds contest). The third topic will be some documents to be aware of such as SAE J1211 (Robustness Validation), SAE J1938 (Product Development Process and Checklist), SAE J2628 (Conducted Immunity Characterization) and ISO 26262 (Functional Safety).

## Biography:

Arnie Nielsen graduated from Wayne State with a BSEE. Arnie has over 45 years' experience in the automotive electronics industry. After serving in the Navy submarine service, he worked as an instrumentation engineer in the crash test facilities at Chrysler then Ford. He then spent 10 years in powertrain hardware/software design at Ford. From 1985 to 2005 he worked in EMC, reliability and product assurance as a technical specialist with Ford-Visteon and is an INARTE certified Master EMC design engineer. After retiring in 2005 he has been consulting with over 35 companies

Email: [arnienielsen@gmail.com](mailto:arnienielsen@gmail.com)

Address: Northville, Michigan, United States



## Agenda

5:30 Pizza, Salad and Beverages

6:00 Presentation

Chapter website: <http://www.emcsociety.org>

## ESD Events

IEEE Southeastern Michigan Section maintains a supporting membership as an Affiliate with the Engineering Society of Detroit (ESD), and supports many of its activities.

We try to publish ESD events that we feel our members may want to attend. Below is a listing of some of the ESD events planned for 2016:

### The Engineering Society of Detroit's (ESD) Professional Engineer Licensing Review Courses

Since 1941, The Engineering Society of Detroit has successfully prepared thousands of candidates for the State licensing exam in a variety of disciplines ranging from civil and environmental to mechanical and electrical engineering. You'll learn in a small classroom-like setting from instructors who have first-hand knowledge of the course material. Let ESD's 70-plus years of experience help prepare you to pass the exam on your first try.

#### FE (Part I) Review Course February 3 – April 9, 2015

The Fundamentals of Engineering (FE) Part I Review Course provides 84 hours of instruction in engineering fundamentals for candidates planning to take Part I of the Professional Engineers Exam.

The classes are held Tuesdays and Thursdays from 6-9 p.m. and on Saturdays (morning or afternoon depending on discipline) at ESD headquarters in Southfield. The Saturday sessions start on February 14, 2015.

#### PE (Part II) Review Course February 14 – March 28, 2015

The Principles & Practice of Engineering (PE) Part II Review Courses consists of 28 hours of

instruction, on seven half-day Saturday sessions, focusing on problem solving techniques needed for the Professional Engineers (Part II) exam.

All classes are held on Saturdays at ESD headquarters in Southfield. The civil engineering course meets 8:30 a.m. – 12:30 p.m. Mechanical, environmental and electrical courses are 1 – 5 p.m. The state exam will be held on April 17, 2016.

#### For more information or to register:

Visit [www.esd.org](http://www.esd.org) or contact Fran Mahoney at 248-353-0735, ext. 116, or [fmahoney@esd.org](mailto:fmahoney@esd.org).

## Engineering SMARt Michigan Program

ESD's Engineering SMARt Michigan program is a rigorous, hands-on science, math, architecture and technology (SMARt) project in which high school students design energy-efficient homes.

Through a series of learning modules, students will be introduced to the basics of energy, alternative energies, and the energy grid, in an atmosphere of fun activities and team building. They will apply these concepts to create real-life solutions by working in teams to design a house. The culmination of the program is a presentation of their team-designed house at a competition between all participating schools where they will vie for scholarships and other prizes.

#### What role do mentors play?

Volunteer mentors are a critical element to the success of the program and are needed to help teach and coach in the classroom. There are two groups of mentors - Energy Module and Presentation Module.

#### What is the time commitment for a mentor?

The 15 week program gets underway in late January and finishes up in late May at the competition. Energy Module mentors are asked to teach a minimum of one class period per week for two weeks. Presentation Module mentors are assigned to a school and asked to teach a minimum of one class period per week for eight weeks. Efforts will be made to schedule multiple Presentation Module mentors at each school in order to ensure at least one mentor is in the classroom each week. Mentors can volunteer for one or more schools.

#### Interested in mentoring?

For more information on mentoring or to volunteer, contact Jasmine Sisson, PE, at [sisson@pbworld.com](mailto:sisson@pbworld.com).

## Other Coming 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.

### SEM Web Calendar:

<http://sites.ieee.org/sem/>

Select "SEM Calendar" button in the top row of the website.

### SEM Web Meetings:

<http://sites.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

However, since our IEEE members tend to have eclectic interests, we want to give everyone a heads up for some of the non-IEEE events that may be of interest.

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.

Send the particulars to [lunnmalcolm@me.com](mailto:lunnmalcolm@me.com)

An announcement may be placed in the newsletter.

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### Links:

#### Michigan Institute for Plasma Science and Engineering:

Seminars for the 2015-2016 academic year:  
<http://mipse.umich.edu/about/seminars.htm>.

Below are links to local SEM Clubs engaged in technical hobbies as well as links to sites that may be useful for locating clubs in the area.

### Amateur Radio Clubs in Southeastern Michigan

(This is a fairly comprehensive listing of all the 'Ham' clubs in SEM.)

<http://www.wa2hom.org/ham-radio-clubs-in-se-michigan/>

### Model RC Aircraft

<http://www.skymasters.org/>

### Model Rocketry

<http://team1.org/>

### Astronomy

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

### Experimental Aircraft Association

<http://www.eaa.org/en/eea/eea-chapters/find-an-eea-chapter>

### Robots

<http://therobotgarage.com/about-us.aspx>

### Science Fiction Conventions

<http://www.conclavesf.net/>

### Mad Science

<http://www.madscience.org/>

### ESD PE Review Class

[www.esd.org](http://www.esd.org)

### Makers Faire:

<http://www.thehenryford.org/events/makerFaire.aspx>



**Executive Committee**

The SEM Executive Committee is the primary coordination unit for Southeastern Michigan (SEM) IEEE operations. The basic organization chart below shows the 2016 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://sites.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 David Mindham, the section secretary at: [dmindham@ieee.org](mailto:dmindham@ieee.org) 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

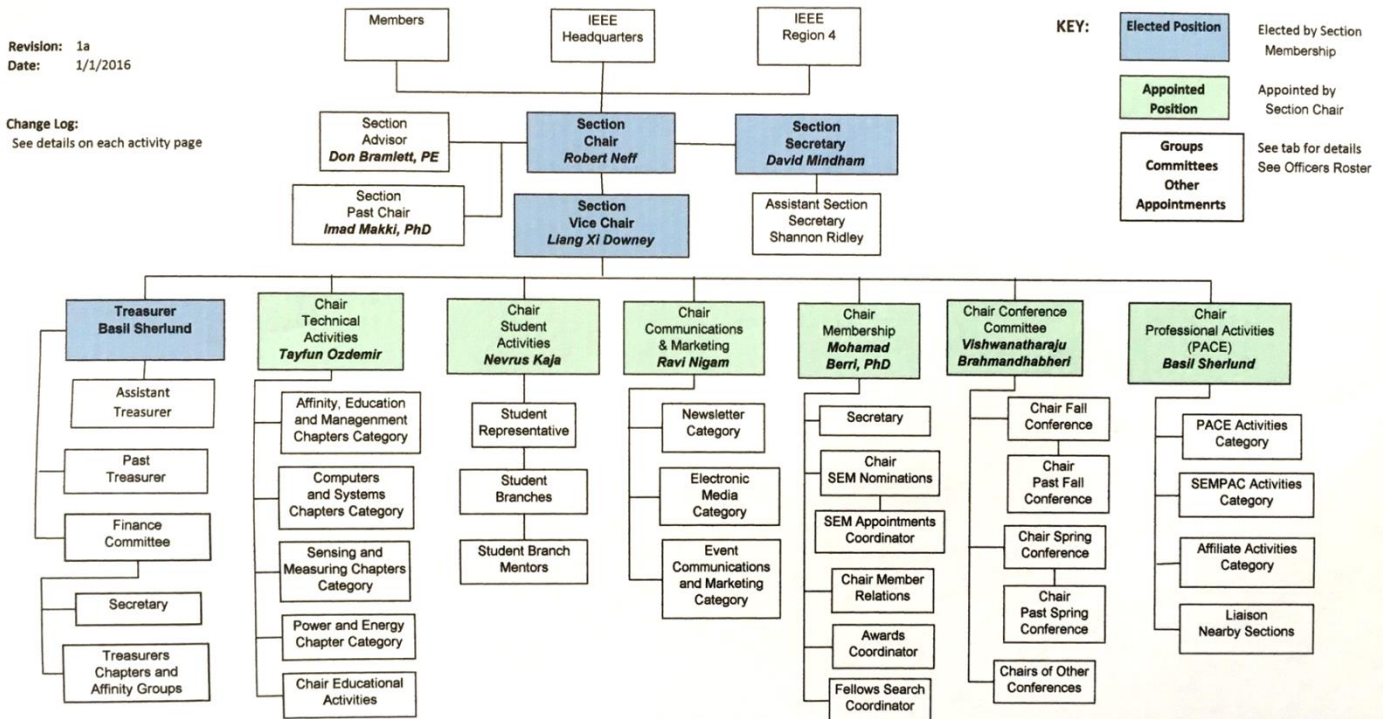
other chapters. In order to communicate the meeting dates of all the chapters, affinity groups etc., to our members to facilitate their attendance, leaders of the groups are requested to send meeting information to our webmasters for posting on section's calendar.

More detailed information on meetings may be found by using the IEEE meetings site. This may be found through the IEEE SEM Website: <http://sites.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.

**David Mindham - SEM Secretary**

**Current Organization - IEEE Southeastern Michigan Section (SEM)**



Download the complete SEM Organization Chart, in PDF format, from the SEM Website at:

[www.ieee-sem.com](http://www.ieee-sem.com)

Then, click on "About SEM" Tab, then, click on "Current Officers"

**SEM Mission & Goals****Section Focus:**

The IEEE SEM Section Officers have reaffirmed the Mission and Goals of the section with the guidance of the Region 4 leadership. The Mission and Goals conform with those of IEEE worldwide.

You have probably seen the Mission and Goals before. However, it is important to keep these clearly in mind and remind ourselves often that this is what we are about and what we are trying to accomplish.

**Section Mission**

Inspire – Enable – Empower and Engage Members of IEEE at the local level.

For the purpose of:

- Fulfilling the mission of IEEE (...**foster technological innovation and excellence for the benefit of humanity.**),
- Enhancing the members' growth and development throughout their life cycle, and
- Providing a professional home,

**Section Goals**

- Increase member engagement,
- Improve relationships with and among members,
- Increase operational efficiency and effectiveness, within the section and its interfaces,
- Enhance collaboration – serve as the local face of IEEE to the community,
- Increase membership, and
- Ensure the collection of appropriate information necessary to assist the IEEE to become a data driven organization.

It is now the task of the section leadership to guide and coach all section officers and elements to focus their activities on achieving those goals.

**SEM Monthly Meetings****Scheduled Meetings:**

The regular meetings of the SEM Leadership (Executive Committee) are scheduled well in advance to allow everyone to place them in their personal planning calendars, and then defend those dates against encroachment. (*Not always possible.*)

Two types of Monthly meetings are normally scheduled:

**Monthly Teleconference / WebEx** as well as:

**Quarterly Face-to-Face (F2F).** See schedule below.

**Note: All IEEE meetings are 'Open' for all members to attend.**

The only caveat is that you please register using the specific meeting form on the vTools site at:

<https://meetings.vtools.ieee.org/main>

Registering will ensure there is sufficient space, refreshments and support for attendees.

**Teleconference Schedule**

(held from 12-1 p.m.):

Thursday	May	5th
Wednesday	June	1st
Wednesday	August	3rd
Thursday	September	1st
Thursday	November	3rd
Wednesday	December	7th

**F2F Meeting Schedule:**

Thursday	July	7th
Wednesday	October	5th
Wednesday	January(2017)	4th

More information for F2F meetings will be emailed in a timely manner before the meeting dates.

Contact **David Mindham** the SEM Section Secretary at:

[dmindham@ieee.org](mailto:dmindham@ieee.org)

for more information.

Also consider checking for additional information as the meeting dates approach at the SEM website

(<http://sites.ieee.org/sem/>). The links to the SEM Facebook or LinkedIn pages on the SEM website may also be checked for updates.

All the normally scheduled meetings of each of the other section chapters, affinity groups etc. are listed each month in the vTools area of our SEM website at:

[http://ewh.ieee.org/r4/se\\_michigan/calendar1.php](http://ewh.ieee.org/r4/se_michigan/calendar1.php)

The information is for:

**Standing Committee Meetings**  
**Affinity Group Meetings**  
**Technical Chapter Meetings**  
**University Student Branch Meetings**

**Calendar Schedule:**

Meetings are also announced on the SEM Calendar web page

<http://sites.ieee.org/sem/>

(Select the "SEM Calendar" button in the top row.)

**Note:** Often meetings of the Executive Committees of Chapters and Affinity Groups (and standing committees, of course) are listed only in the SEM Calendar page, since it is felt that most members would not wish to sit through administrative meetings.

However, if this type of meeting is just your 'cup of tea', then contact the officers of the unit that is conducting the meeting, and ask to be 'linked' into their teleconference, SKYPE, Google Hangout, or WebEx meeting. They will be happy to have you as a participant.

Many volunteers become interested in section activities when they get a chance to attend a monthly meeting and 'peek under the hood' to find out how the machinery of the section actually runs. It can be a rewarding experience.

**David Mindham**  
 SEM Section Secretary.  
[dmindham@ieee.org](mailto:dmindham@ieee.org)

**Editors Corner**

Previous editions of Wavelengths, the monthly newsletter of IEEE-SEM, may be found on the IEEE-SEM website at: <http://sites.ieee.org/sem/>. Click on the "Wavelengths" button in the top row of selections. Comments and suggestions may be sent to the Technical editor at [lunnmalcolm@me.com](mailto:lunnmalcolm@me.com). The full e-Wavelengths team is shown below in chart. We also recommend a cc to the chair of the Communications and Marketing Committee, Ravi Nigam at: [rniagam154934mi@comcast.net](mailto:rniagam154934mi@comcast.net).

We rely on our officers and members to provide the 'copy' that is presented to our readers. The **Wavelengths Annual Publication Plans for Articles and Personal Profiles** are 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.

**Editors:**

We are always looking for members interested in helping to edit the newsletter. The process is

always more fun with more members to share the duties, and help keep the newsletter alive and lively by providing alternative points of view.

**Review:**

Each month Jim Woodyard reviews the current issue, adding more "formal" English and correcting typos Jim likes to work in the background but, a special thank you is deserved for his continuous efforts and dedication to the quality of the publication. Thank you Jim!

**Join the Team:**

If you feel you might like to join the team, or would like to train with us, Contact: [lunnmalcolm@me.com](mailto:lunnmalcolm@me.com).

**Annual Publication Plan for general Articles**

Month	AG's	Ch's	Ch's	SB's	Specal Notice	Reporting Events	Monthly Focus	Awards
Jan		1		OU	Future Cities Judges	Election Results	Resolutions	
Feb	Cons	2		MSU	Science Fair Judges	Officer's Welcome	Surviving Winter	Future Cities
Mar		3	13	EMU	Spring Conf. Flyer	Spring Conference	Spring Conference	Science Fair
Apr		4		U/M-D	National Engrs Wk.	Future Cities	Chapter Focus	GOLD Award
May	Life	5	14		Outstanding Eng Awd	Science Fair	Elections - Prep	New Fellows
Jun		6			IEEE-USA Apmts.	ESD Banquett	Leadership Skills	SEM Awards
Jul		7	15		Nominations Call	MD-Webcasts	Students Issues	Region 4
Aug	WIE	8			MGA - Apmts.	Tech-Webinars	Womens Issues	
Sep		9	16	LTU	Region 4 Apmts.	Engineers Day	Professional Skills	
Oct		10		U/M-AA	Fall Conf. Flyer		Fall Conference	
Nov	YP	11	17	WSU	ELECTIONS!		Humanatarian	
Dec		12		U/D-M	IEEE-Com Apmts.	Fall Conference	Happy Holidays	

**Annual Publication Plan for Personal Profiles**

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

e-Wavelength Productions	
<i>Editor in Chirf</i>	Nevrus Kaja
<i>Mkting &amp; Publicity Manager</i>	Michael Miller
<i>Technical Editor</i>	Malcolm Lunn
<i>ListServ Operations</i>	Christopher Johnson
<i>Advitivity Updates</i>	Kimball Williams
<i>Publications Review</i>	James Woodyard



## Web & Social Sites

### SEM Website

<http://sites.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 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”.

### SEM On Line Community

<http://sem.oc.ieee.org>

## Section Officers

### Section Chair

Robert Neff

### Section Secretary

David Mindham

### Section Vice-Chair

Liang Xi Downey

### Section Treasurer

Basil Sherlund

## Standing Committees:

### Section Adviser

Don Bramlett

### Chair Communications & Marketing

Ravi Nigam

### Chair Conferences

Raju Brahmandhabheri

### Chair Educational Activities

Chaomin Luo

### Chair Finance

Nevrus Kaja

### Chair Membership

Mohamad Berri

### Chair Nominations

Kimball Williams

### Chair Professional Activities

Basil Sherlund

### Chair Student Activities

Nevrus Kaja

### Student Representative

Maoxu Liu

### Chair Technical Activities

Tayfun Ozdemir

### Past Section Chair

Imad Makki





IEEE Southeastern Michigan

Visit Us on the Web at:  
<http://sites.ieee.org/sem>

### Leadership Meetings

All IEEE members are welcome to join us at any regularly scheduled meeting:

#### Advertising Rates

SEM Website & Newsletter

Advertising Rates / Month:

Our readers specify & purchase a wide range of electronic components, equipment and services.

Our sponsors come from industry, education, and nonprofit organizations.

Full page \$500,

Half page \$250

Quarter page \$125,

Eighth page \$65.

#### SEM Executive Committee Monthly Teleconferences:

1<sup>st</sup> Wednesday or Thursday of Each Month @ Noon

Check the Section Web Calendar at:

<http://sites.ieee.org/sem/>

(Select the "SEM Calendar" button in the top row.)

#### SEM Executive Committee Face-to-Face Meetings:

1/Qtr. Usually held at Engineering Society of Detroit, Southfield, MI

Registration at:

<https://meetings.vtools.ieee.org/main>

#### SEM Standing Committee Meetings:

SEM Affinity Group Meetings:

SEM Technical Chapter Meetings:

SEM University Student Branch Meetings:

Meeting schedules are announced on SEM Web Calendar

<http://sites.ieee.org/sem/>

(Select the "SEM Calendar" button in the top row.)

Registration for all at:

<https://meetings.vtools.ieee.org/main>