June 2016 www.cis-ieee.org

THE REPORTER

Journal of the Central Indiana Section • IEEE

Save the Date!

Saturday, November 5, 2016
2016 EnCON – Annual Engineering Conference
7:00 am – 6:00 pm
Holiday Inn Indianapolis Airport
8555 Stansted Rd.
Indianapolis, IN 46241



Register Today!

For conference Registration & Information, please visit: http://cis-ieee.org/EnCON

Conference Facebook page: https://www.facebook.com/IEEECISEnCON/



Latest Trends in

Emerging Topics

for Practicing Engineers,

Students &

Retired Engineers **IEEE- Central Indiana Section Presents**

2016 EnCON-ENGINEERING CONFERENCE

November 05, 2016

7:00 am - 6:00 pm

Holiday Inn Indianapolis Airport: 8555 Stansted Rd. Indianapolis, IN 46241

Technical Program Networking, Breakfast and Lunch Professional Development Hours: PDH & Continuing Education Units: CEUs

Professional

Development

Program

Registration & Breakfast Buffet Opening Session & Plenary Speaker

Drone

Renewable Energies

Career

Student Poster Contest

Break | Networking

LUNCH

Autonomous Vehicle

Power

Entrepreneurship

Student Poster Award Networking & End

Receive DISCOUNT REGISTER NOW to Secure Your Spot! For Conference Information & Registration Please Visit: http://cis-ieee.org/EnCON

Conference Contact Info:

Bob Evanich: <u>b.evanich@ieee.org</u> Phone # (317) 614-5744

David Koehler: <u>david.koehler@ieee.org</u> Phone # (317) 441-2076

EnCON – Engineering Conference provides participants with a unique learning experience with topics on the cutting-edge of technical innovation today.

This unique conference is not only geared towards practicing engineers, but also students and retired engineers. This is an excellent opportunity for networking, knowledge sharing and professional development.

The material will be presented by some of the industry leaders.

/hether you are just starting a career or have been practicing for many years, the program will give the attendees the skills necessary to find a job or help keep them competitive in today's ever changing business world.

Please join us to enhance your current knowledge and skill set and further your career.



Date:

November 05, 2016

Time:

7:00 AM to 6:00 PM

Location:

Holiday Inn Indianapolis Airport: 8555 Stansted Rd. Indianapolis, IN 46241

Sponsorship Opportunities

Contact: Bob Evanich b.evanich@ieee.org (317) 614-5744

For conference information, please visit:

www.cis-ieee.org/EnCON

SPONSORSHIP OPPORTUNITIES **CENTRAL INDIANA SECTION IEEE EnCON 2016**

Engineering Conference

The Central Indiana Section IEEE is sponsoring a unique one day conference gearded towards practicing engineers, students, and retired engineers. The material will be presented by some of the industry leaders. Two levels of sponsorship opportunities are available for those companies who want to showcase their product.

\$250 Spansorship Level 1 Complimentary Registration. Company Name and Logo on Conference website.

Company Name and Logo on conference materials Exhibitor space:

\$500 Spansorship Level 2 Complimentary Registrations Company Name and Logo on Conference website Company Name and Logo on conference materials Exhibitor space

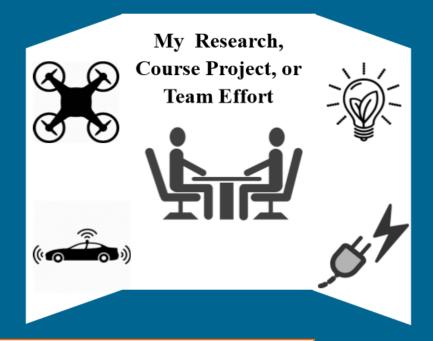
Contact: Bob Evanich b.evanich@ieee.org or (317) 614-5744



IEEE

2016 EnCON Student Poster Contest

Student poster contest entrants need to prepare a 250-word abstract or design proof of a 36" by 48" academic poster by Friday, October 14. Email entries to michael.r.hayashi@ieee.org. No limit to number of entrants per institution for either the undergraduate or graduate track. A panel of judges will decide the winners in each track.



2016 EnCON Details



Date: 5 November 2016 Setup: 7:15 AM to 9:00 AM Awards: 5:00 PM to 6:00 PM Location:

> Holiday Inn Indianapolis Airport 8555 Stansted Rd Indianapolis, IN 46241

Advancing Technology for Humanity

Additional details: http://cis-ieee.org/EnCON/ Have questions? michael.r.hayashi@ieee.org

You should attend to:

- Learn about the latest topics
- Share your work
- Earn discounted conference registration
- Build your professional network

You Still Have Time to Get Tickets! Annual Central Indiana Section Baseball Outing Sunday June 26th





Summer is here and our annual Indians Baseball outing is approaching fast. Bring your family and hang out with your fellow IEEE members while enjoying a catered lunch on the 3rd base executive level terrace and cheer for your Indianapolis Indians as they take on the Buffalo Bisons.

The gates open at noon, the game starts at 1:35pm and goes till it's over (average professional baseball game lasts 2 hours and 50 minutes). Lunch is laid out between noon and 12:30 and is usually left out for a couple of hours. Included drinks (water, soda, & beer) are available from noon until the game ends. Other alcoholic beverages can be purchased up until the end of the 7th inning. Your tickets will be available under your name at Victory Field's will-call window on the day of the game.

Register Here!

Hope to see you at the game!

Power & Energy / Industry Applications / Power Electronics Society News

Diana Vasquez, Chair, PES/IAS/PELS Ben Huckaba, Vice-Chair, PES/IAS/PELS Gary Rhodes - Secretary, PES/IAS/PELS Jerry Hohn - Treasurer, PES/IAS/PELS Mike Darnell - L31 Office, PES/IAS/PELS

The May meeting was on Electrical Utility Cyber-Security. Maurice Martin, Senior Technology Leader at the NREL, spoke about the rapid increase in distributed generation in the United States has elevated the importance of cybersecurity in the electric sector. This is because distributed generation sources are often located in unmanned facilities with limited or no physical security. Hackers can have unfettered physical access to these resources and could potentially launch cyber-attacks by either tampering with the intelligent systems on the distributed generation sources or attaching a peripheral device laden with sophisticated malware to disrupt operations. The traditional cybersecurity controls such as firewalls, access control lists, encryption, authentication and authorization do very little to block such attacks. This is because the hacker becomes an "insider threat" when he/she physically accesses the distributed generation source and launches attacks from a trusted node in the power network. A systemic view of cybersecurity is needed in this situation to identify anomalous behavior and block it before it can disrupt operations. This presentation will offer an empirically validated 9-layer security architecture for power systems developed at NREL that has the potential to mitigate the risk from physically and logically compromised distributed generation sources on the electric grid.

2016 WAG Open House Recap



Event Description

Have you heard about the Women's Affinity Group (WAG), but want to get more details?

Are you new to Cummins and wondering how to get involved?

Were you a member of WAG at another location and want to continue in Columbus?

If this sounds like you, or if you just have a general interest in the Women's Affinity Group, join us at the 2016 WAG Open House.

Members from each of the WAG committees will be available to talk about our current initiatives and answer any questions. It's the perfect atmosphere to hear about our group, network and learn about how to get involved.

Thank you Isabel Lujan for promoting IEEE at the event!

Call for Nominations

It is time to begin taking nominations, including self-nominations, for the Central Indiana Section Officers for 2017. The 5 section-wide voting officer positions are:

Chair
Vice-Chair
Secretary
Treasurer
Student Activities Chair / Student Branch Representative

Typically, the current Vice-Chair moves into the Chair position. However, our current Vice-Chair is leaving the section this month leaving both positions potentially open.

With the exception of the Student Branch Representative, each member of the Section Committee shall be an IEEE member, in good standing, of Graduate Student Member, Member, Senior Member or Fellow grade. For more information on the position responsibilities see the <u>IEEE MGA Operation Manual</u>, Section 9, Chapter 4, Paragraph F, or visit the <u>IEEE Center for Leadership Excellence</u>, look under Volunteer Position Training, and view the training module for the officer position.

Send all nominations or inquires to Phil Walter (phil.walter@ieee.org)

Call for Volunteers

The IEEE Central Indiana Section is always looking for energetic members that have a little time to help their section and community. We currently have the following Executive Committee positions open:

Computer Society Chapter Chair Young Professionals Chair Section Vice Chair Membership Development Chair

If you have an interest in volunteering for any of these positions, would like more details on the positions, or want to help serve your local IEEE Section in any other capacity, please contact Phil Walter, Section Director and Nominations Chair at phil.walter@ieee.org.

Volunteering can also be a good resume builder and as always, thank you for volunteering!!



Purdue IEEE Remotely Operated Vehicle (ROV) Team



PURDUE STUDENTS TO VIE FOR FIRST PLACE IN THE MATE INTERNATIONAL ROV COMPETITION

Purdue IEEE ROV is an eight-year-old team of diverse Purdue students that competes in the Marine Advanced Technology Education (MATE) Center's International Remotely Operated underwater Vehicle (ROV) Competition. The team has designed ROV *Maelstrom*, a top-notch ROV that is expected to produce top results.

The competition challenges students to create a vehicle that can complete underwater missions. ROVs are used throughout the world to conduct scientific studies, assist petroleum extraction, observe marine ecosystems, and retrieve items of interest underwater among other tasks in oceans and lakes. This year's competition is being held at NASA's Neutral Buoyancy Lab in Houston, Texas from June 23-25.

MATE has created a mission profile based off of real-life ROV needs. The mission, From the Gulf of Mexico to Jupiter's Moon Europa, consists of both simulated underwater activities in the Gulf of Mexico and under the ice of Jupiter's moon, Europa. This mission will test ROV Maelstrom and the team's ability to determine the qualitative attributes of the environment and objects of interest, survey underwater terrain, retrieve mission-critical items, conduct servicing of an underwater communications hub, secure a wellhead, and collect samples to be analyzed.

Proven Robotics, the chosen company name of the team for the competition, has designed a specialized claw, a sonar positioning system, an ergonomic pilot-interface system, an open-loop hydraulics system, and more. Through careful planning and painstaking design meetings, the team has created an exceptional ROV that will execute each task safely and speedily. The team designed, manufactured, and constructed the vehicle themselves with minimal use of external resources, an impressive feat considering how few of the competing teams go to this length. The modeling of the frame with CAD tools and subsequent water jetting, the software composition, and the design and population of printed circuit boards (PCBs) were all accomplished by the students. Team veterans have passed on their experiences to the newer members throughout the year, fostering growth and a smoother process towards competition day. ROV Maelstrom is a product of the team's hard work and dedication.

None of this could have been possible without the support of our sponsors. The Purdue IEEE ROV Team would like to give special thanks to the Purdue Office of the Provost, the Purdue Engineering Student Council (PESC), and the Indiana Space Grant Consortium (INSGC) for their support that makes Purdue IEEE ROV an international competitor.

For more information about the Purdue IEEE ROV team visit www.purdueieee.org/committees/rov/ or contact the COO Sanay Shah at shah196@purdue.edu.

For more information about the MATE ROV competition, visit www.marinetech.org/rov-competition/ or contact Jill Zande at jzande@marinetech.org

Guest Lecturer and Author of Latest EMC Design Book Joins D.L.S. Teaching Team for October Seminar

Michel Mardigan, principal author of *Controlling Radiated Emissions by Design*, will be joining Donald L. Sweeney and staff in teaching the October 4-6, 2016 *EMC By Your Design* seminar in Northbrook, Illinois. The instructors have more than 100 years of combined EMC experience.

Michel, an IEEE Senior Member, has worked as an EMC Specialist for IBM and was the French delegate to the CISPR Working Group, which became CISPR 22, the root document for FCC 15-J and European EN55022. Michel has taught EMC seminars in the U.S. and worldwide to thousands of engineers and currently is a private consultant in France. He has written numerous books and papers on EMC. A major project he was involved with was the EMC for the English Channel Tunnel.

EMC By Your Design is a practical applications seminar and workshop consisting of lectures, discussions, a hands-on-workshop, a large notebook of slides, take-home proprietary EMC design software, and individual design evaluations of your product. You will also receive an autographed textbook, *Controlling Radiated Emissions by Design* by Michel, with contributions by the D.L.S. teaching team.

For more information, visit http://www.dlsemc.com/emcdesignseminar or call 847-537-6400



EMC By Your Design An EMC Practical Applications Seminar and Workshop Tues. Oct 4 – Thurs. Oct 6, 2016 Northbrook, IL

(Register by Sep. 13, 2016 to receive \$300 discount)

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A "Boot Camp" Experience in Sustainable / Alternative Energies at Rose-Hulman Institute of Technology hosted by: Rose-Hulman PRISM



hosted by





PRISM has been given the opportunity to work with STEM Teach, a grant from the STEM Teacher Recruitment Fund established by the Indiana General Assembly. The funding is coordinated through the Independent Colleges of Indiana and administered by the Center for Excellence in Leadership of Learning.

From July 10th – July 15th, Rose-Hulman PRISM will offer the *Sustainable Alternative Energies Bootcamp* on the RHIT campus. This is a residential program for up to 14 Indiana High School Science (Earth/Space Science, Physics, Chemistry, Biology), Agriculture and pre-Engineering teachers interested in learning content knowledge, pedagogy, and practical applications of sustainable alternative energies. Topics covered intensively during the boot camp include: current state of energy and production (including the U.S. power grid / distribution systems and development of a "Smarter Grid"), solar technologies, wind energy, coal gasification and integrated combined cycle power plants and lighting and energy conservation.

Participants will be immersed in classroom content specific instruction provided by Rose-Hulman Mechanical Engineering faculty during the first part of each day. Following the classroom instruction, participants will do lab activities that they will be able to incorporate in their own classrooms. Each afternoon of the boot camp, participants will be taken on field excursions to power production facilities in West Central Indiana. These site visits include: Duke Energy Cayuga Power Station, NIPSCO Combined Cycle Power Plant, IND Solar Farm, One Planet Solar and Wind, POET Biodiesel and Duke Energy Edwardsport Coal Gasification /

Farm, One Planet Solar and Combined Cycle Power Plant.

Additionally, each participant will receive a Chromebook upon completion of the workshop. Each participant will be asked to build an online resource of digital materials on the PRISM Moodle LMS. Moodle instruction and training will be provided by the PRISM staff during the boot camp. Interactive digital online resources will be available to course participants on the PRISM website.

The PRISM Team consists of Pat Carlson, Bob Jackson, Ashlee Scherwinski, and Ryan Smith. For additional information, please contact Ashlee Scherwinski at scherwin@rose-hulman.edu.

ACEC

acecindiana.org

2016 Meeting Calendar					
Date	Host	Subject	Location		
Monthly	CIS	Executive Committee Meetings	Internet/Phone Bridge		
Weekly	CIS EnCON	EnCON Committee Meetings	Internet/Phone Bridge		
June 16	CIS-IEEE	Networking Dinner	Ball State University, Muncie, IN. BC Building		
June 26	CIS	Annual Baseball Outing	Victory Field		
Nov 5	CIS	Engineering Conference	Holiday Inn, Indianapolis Airport		
Check the <u>Section web page</u> for details and current information.					

ADVERTISER EVENT

October 4-6, 2016	DLS: dlsemc.com	See Advertisement on Page 10	Northbrook, IL
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Central Indiana Engineering Web Links

American Council of Engineering Companies, Indiana

American Society of Civil Engineers	inasce.org
American Society of Mechanical Engineers	sections.asme.org/central_indiana
American Society for Metals - Indianapolis	asm-indy.org
Central Indiana Engineering Consultants' Network	indy-engineer.dnsalias.com
Central Indiana Linux Users Group	cinlug.org
Indiana Health Industry Forum	ihif.org
International Council on Systems Engineering	incose-coa.org
Indiana Society of Professional Engineers	indspe.org
American Society of Heating, Refrigeration, and Air Conditioning Engineers	indyashrae.org
National Society of Black Engineers - Indianapolis Alumni Extension	nsbe-ip.org
Project Management Institute - Central Indiana Chapter	pmicic.org
Society of Automotive Engineers, Indianapolis	saeindiana.org
Scientech Club in Indianapolis	scientechclub.org
Society of Hispanic Professional Engineers	shpe-indiana.org
Indianapolis Chapter of Society for Information Management (SIM)	SimNet.org
Society of Women Engineers - Central Indiana Section	swe-ci.com
A diverse collection of technology-based Indiana industries.	Techpoint.org
	American Society of Mechanical Engineers American Society for Metals - Indianapolis Central Indiana Engineering Consultants' Network Central Indiana Linux Users Group Indiana Health Industry Forum International Council on Systems Engineering Indiana Society of Professional Engineers American Society of Heating, Refrigeration, and Air Conditioning Engineers National Society of Black Engineers - Indianapolis Alumni Extension Project Management Institute - Central Indiana Chapter Society of Automotive Engineers, Indianapolis Scientech Club in Indianapolis Society of Hispanic Professional Engineers Indianapolis Chapter of Society for Information Management (SIM) Society of Women Engineers - Central Indiana Section

Distribution: The Reporter is made available electronically to the approximately 1800 IEEE members within the Central Indiana Section including student members and faculty of Purdue, Rose-Hulman Institute of Technology, IUPUI, Ball State and Indiana State

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Engineering in Medicine and Biology Society

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Helen McNally mcnallyh@purdue.edu

Communications Society (765) 591 - 6433 John Greene <u>jgreene@nltc.net</u>

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Women in Engineering (812) 565-3777 Isabel Lujan isabel.lujan@ieee.org

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Editorial Policies

Each issue of The Reporter typically references three months - the month in which it is published and the following two months. The Reporter is typically published in March, June, September, and December.

Material to be included should be submitted mid-month prior to the month it is to be published. For example, material intended for the September issue should be submitted to the Editor by August 15. The Editor will send a reminder to all IEEE Central Indiana Section entities by the 25th of the month to submit their updates.

Copy should be submitted electronically. Photographs are desirable. Advertisements are welcome. Contact the editor, Henry Shi for layout sizes and rates at shi206@purdue.edu.

How Do You Communicate??

Follow Section Social Media

Want to know what is happening in Central Indiana Section? Don't know where to look? Already inundated with eNotices? Need to ask a question? Want to find an expert? Got a meeting idea?

Here are some of many communication channels available in Central Indiana Section



- Conference Facebook Page: 2016 IEEE-CIS EnCon Conference & Workshop https://www.facebook.com/IEEECISEnCON/
- Section Facebook Page: IEEE Central Indiana Section https://www.facebook.com/IEEE-Central-Indiana-Section-1426165320970908/?fref=ts
- WIE Facebook Page: IEEE CIS Women in Engineering https://www.facebook.com/IEEE-CIS-Women-in-Engineering-223901364430386/?fref=ts
- Student Branch members are encouraged to join "IEEE Region 4 SAC": https://www.facebook.com/groups/r4sac/



 IEEE's own Social network provides participants with professional and technical networking opportunities in and around Indianapolis. https://ieee-collabratec.ieee.org/app/community/54/activities

CIS Home Pages

 Start with the main site. (<u>www.cis-ieee.org</u>) Check out the calendar of events, or link to the many IEEE groups in Central Indiana Section, including all of the Student Branches.

Conference Page

- Check Out Conference details: Program Overview, Workshop Info, Speakers, Student Poster Contest and Registration Info: (http://cis-ieee.org/EnCON)
- Not getting E-Notices? E-Notices are not only a resource for keeping in touch with the
 activities throughout CIS, but you will also receive information on topics of interest
 throughout IEEE

eNotices

- Login to mylEEE from the IEEE Home Page (www.ieee.org) and sign-up!
- Check out the calendar of events, at the main site. (www.cis-ieee.org)
