



ION Saint Louis



WINTER 2008

Welcome Remarks from the 2008 Saint Louis Section Chair, Dr. H. S. Mallikarjuna



2008 Section Chair, Dr. H. S. Mallikarjuna

My name is Hulyar Mallikarjuna (call me Mallik for short) and I am the Chair for IEEE Saint Louis Section for the calendar year 2008. I am an Associate Professor in Electrical and Computer Engineering Department at Parks College, Saint Louis University. I have been a member of IEEE for over 20 years and enjoyed the benefits it has offered me. I hope you have had the similar experience. I have been active on and off in the Saint Louis section activities over the last 20 years.

I would like to thank Dr. Jim Bornholdt, the section Chair for the year 2007, for his contributions. I plan to continue the tradition of the past Chairs of the section in making the section active in serving the interest of stakeholders. This year we have the following officers serving IEEE members and activities along with me:

Tyria Riley triley@ieee.org - Vice-Chair

Keith Corzine Keith@Corzine.net - Treasurer

Bob Becnel bob@becnel.com - Secretary

IEEE St. Louis section will continue to finance and help the society chapters to

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Closing Thoughts from the 2007 Saint Louis Section Chair, Dr. Jim Bornholdt

The most important aspects of any organization are the people who volunteer to help keep the organization progressing. IEEE is no exception. Our Saint Louis Section of IEEE had a successful year in 2007 thanks to many individuals who contributed their time and efforts. Special thanks to H.S. Mallik, Tyria Riley, Scott Smith, Keith Corzine, and Bob Becnel who served on the Executive Committee. Bob Menzel did an outstanding job as Social

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Closing Thoughts from the 2007 Saint Louis Section Chair, Dr. Jim Bornholdt

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The *ION Saint Louis* is the official publication of the Saint Louis Section of IEEE. It is published approximately once per quarter by the Officers of the Section and distributed electronically via the Section Listserv and posted to the Section website.

Any member may submit IEEE-related information to appear in the publication to Bob Becnel at bob@becnel.com.

Chair organizing the Summer and Christmas socials. Bob Lyons also worked to build up social activities with the section. We received much support from several Section veterans such as Jim Leonard, Ken Owens, Steve Watkins, and Roobik Gharabagi. St Louis University Parks College provided us with conference rooms for our Section planning meetings and classroom/lab space for our student competitions. We had great participation from Student Branches, most notably University of Missouri – Rolla (*Missouri University of Science and Technology*), Southern Illinois University - Carbondale and Saint Louis University. Jessica du Maine re-invigorated the computer society chapter. Gregory Triplett and HC Wu started an Applied Physics society chapter which will augment or replace the Combined Group chapter.

As Section Chair I had the great privilege to work with many outstanding professionals and students within our St. Louis Section and look forward to a great 2008.

Thanks,

Dr. Jim Bornholdt,

2007 Section Chair

Welcome, 2008 Section Executive Committee

January 1 ushered in a new Executive Committee for the Section. This group of people are responsible for the administrative, programmatic and governance of the Section. Each plays a pivotal role and will have committed to serving four consecutive years after their respective completion of serving as Chair. These individuals serve a 1 year term in the positions listed below.

Chair – Dr. H. S. Mallikarjuna

Vice Chair – Tyria Riley

Treasurer – Dr. Keith Corzine

Secretary – Bob Becnel



A couple of UMR students work diligently at constructing a circuit during the 2007 Black Box Competition. See story on page 4.

Annual Christmas Social and Awards Banquet

In December, the Section convened its annual tradition of awarding outstanding achievements at its Annual Christmas Social and Awards Banquet. The event was held at the Lake St. Louis Country Club.

Section Chair, Jim Bornholdt, welcomed over 40 members, spouses, friends and children to enjoy a delicious catered meal and be captivated by his remarks as Outgoing Chair. Dr. Bornholdt then presented the 2007 Saint Louis Section Awards (see listing on this page).

The highlight of the evening, of course, was a visit by Santa Claus. Santa came to visit all those children that have been good and proceeded to hand out gifts.



2007 Saint Louis Section Awards

- 2007 Outstanding Young Engineer: Salvatore Gianino
- 2007 Outstanding Educator: Kyle Mitchell
- 2007 Outstanding Student Branch Award: University of Missouri Rolla
- 2007 Outstanding Company: Ameren UE
- 2007 Outstanding Student Member: Michael Welling
- 2007 Outstanding Brand Counselor: Jagannathan Sarangapani (UMR)
- 2007 Special Member Award: Jessica du Maine

IEEE Socials

As a means to foster further social networking opportunities within IEEE, Mr. Bob Lyons has agreed to take on the defacto role of Social Chair. Mr. Lyons has planned events that may include a Cardinal game, an evening at a Comedy Club and other mixers.

The first Social that is planned is for Monday March 24th at 5:30pm

Helen Fitzgeralds Bar & Grill

3650 South Lindbergh

Sunset Hills, MO 63127



Please send RSVP to Mr. Lyons at ieeesocials@yahoo.com by March 21st.

IEEE St. Louis Section Black Box Competition 2007

The "Black Box Competition" is an annual event sponsored by the IEEE Saint Louis Section. Undergraduate students from six member universities (University of Missouri-Columbia, University of Missouri-Rolla, Southern Illinois University-Edwardsville, Southern Illinois University-Carbondale, Saint Louis University, and Washington University) are invited to participate in this competition. The competition requires students in groups of two to methodically identify and record various passive circuit components, active circuit components, and possibly the functionality of the circuit within the allotted time. The top three teams receive cash prizes and their names are engraved on a special plaque. The first place team will have the honor to display the traveling plaque at their respective institution for a year. The winning institution will also be in charge of hosting the next year's competition.



First Place Winners – Ben Corrado (right) and Meredith Drennan (left) of Saint Louis University.

The annual IEEE St. Louis Section Black Box competition took place at the Department of Electrical and Computer Engineering of the Saint Louis University on the Nov. 10, 2007. The judges for this competition were faculty members from participating universities as well as IEEE members from local industries. All participants were invited to stay for the award ceremony followed by a Pizza party. Congratulations to all participating teams and universities. The top four teams and their respective university are listed to the right.

(Article contribution by Dr. Roobik Gharabagi and photos by Dr. Kyle Mitchell of SLU)



2007 IEEE Saint Louis Section Black Box Contestants, Faculty Sponsors and Judges.

First Place

Ben Corrado
Meredith Drennan
Saint Louis University

Second Place

Brian Sack
Steve Walden
Saint Louis University

Third Place

Cory Hatina
Matt Robb
Saint Louis University

Fourth Place

Greg Werkheiser
Colin Gibson
University of Missouri - Rolla

2008 SPRING MISSOURI CONFERENCE (MOCON) WORKSHOP

WEDNESDAY, 5 March 2008

1. Electrical OverCurrent Protection by Mr. Paul Friemel, PE (Bussmann)
2. High Frequency Circuit Design by Dr. Jim Hahn (UMSL Campus)
3. Grounding and Shielding Day 1 by Dr. Tom Van Doren (LSL)
4. Routing & Data Mgt in Secure Sensor Networks by Dr. Sanjay Madria (LSL)

THURSDAY, 6 March 2008

5. Grounding and Shielding Day 2 by Dr. Tom Van Doren (LSL)
6. Arc Flash Analysis (1/2 Day) by Mr Edwin Scherry, PE (LSL)
7. Wireless Ad Hoc and Sensor Networks: Protocols, Performance and Control (1/2 Day) by Dr. Jagannathan (Jag) Sarangapani (LSL)
8. Signal Integrity by Dr. Jim Hahn (UMSL Campus)

FRIDAY, 7 March 2008

9. Advanced Electrical OverCurrent Protection by Mr. Paul Friemel, PE (Bussmann)
10. Intro to TCP/IP Networking and Appl (1/2 Day) by Mr. Ken Owens (Savvis Com)
11. Advanced Network Implementations (1/2 Day) by Mr. Ken Owens (Savvis Com)
12. Digital Signal Processing by Dr. Jim Hahn (UMSL Campus)

SEE WEBSITE FOR MAPS and LOCATION <http://www.moconstl.com>.

MOCON Registration

Advanced registration for the 2008 Spring Missouri Conference (MoCon) Workshop is now open. The advanced registration Web site is in preparation and will be open soon. Advanced registration fees are \$500.00 for a full day tutorial and \$250 for a ½ day tutorial. Advanced registration will close on 25 February 2008. After that, the fees will be \$550 for a full day tutorial (except for Advanced Electrical Overcurrent Protection, which will remain at \$500.00) and the fees for a ½ day tutorial will be \$275.00. You may use this form to register or you may register online at the MoCon Workshop web site: www.moconstl.com. Classes start at 8:30 am and end at 5:30 pm. Lunch is provided 12:30-1:30 pm. Lunch is also provided for those taking two ½ day tutorials on the same day. IEEE Members receive a 20% discount. PDHs and CEUs will be awarded.

Name _____ Tutorial # _____ Amt Enclosed \$ _____

Address _____ City/State/Zip _____

Email address _____ Tel No. _____ IEEE Member # _____

Remit check (no credit cards, POs OK) To Jerry Herman, MoCon Workshop Treasurer, 2112 McGregor Circle, O'Fallon, MO 63368, payable to "2008 Spring MoCon"

More information, call MR. BOB MENZEL 314-545-6712.

Welcome Remarks from the 2008 Saint Louis Section Chair, Dr. H. S. Mallikarjuna

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grow, stay current and stay active. We have several IEEE Society Chapters in the St. Louis Section:

- ❖ Aerospace & Electronics Systems
- ❖ Applied Physics
- ❖ Communications
- ❖ Computer
- ❖ Engineering in Medicine and Biology (EMB)
- ❖ GOLD
- ❖ Industrial Applications Society & Computational Intelligence Society
- ❖ Power Engineering
- ❖ Education Society

IEEE St. Louis section will continue to help students by financing part of their activities such as The Robotics and Black Box Competition, as well as promote growth in student membership. We have six universities in the Saint Louis Section with IEEE Student Branches that are very active. There are over 500 IEEE Student Members in the section:

- ❖ Missouri University of Science and Technology *Congratulations, UMR, on your great new name!*
- ❖ University of Missouri at Columbia
- ❖ Washington University
- ❖ Saint Louis University-Parks College
- ❖ Southern Illinois University at Carbondale
- ❖ Southern Illinois University at Edwardsville

The section plans to help the local IEEE volunteers in bringing national and international conference to Saint Louis. Please attend various chapter meetings of your interest and other events sponsored by the section. We plan to have the dates and events on the section website which can be found by following link: <http://ewh.ieee.org/r5/stlouis/>. Please help us keep the website current and useful to members with your suggestions via email to Mr. Bob Becnel: bob@becnel.com.

If you have ideas/suggestions for improving the section, send them to me. I look forward to serving the members of the section.

Dr. H. S. Mallik

mallikhs@slu.edu

Computer Society has Returned

After a brief hiatus, the Computer Society is active once again. Jessica du Maine stepped forward late last fall to reorganize one IEEE's largest societies here in the Section. "du Maine's desire to see an active Chapter for Computing professionals is exciting for our organization and important," exclaimed Section Chair, Dr. Mallik.

The St. Louis IEEE Computer Society is looking forward to a few events this coming year. At the March Section meeting, they are sponsoring a presentation on Radio Frequency Identification (RFID) by Dr. Mark Lynch. Future events will be a presentation on Teradata by Mr. Dinesh Hiripitiyage and a presentation on Electronic Recycling, or eCycling, at St. Louis Community College – Florissant Valley. We also hope to participate in and assist with the 2008 IEEE Real-Time & Embedded Technology and Applications Symposium (RTAS) (#13870) which will be held 22-24 April 2008 here in St. Louis. If interested in contributing or attending a meeting, contact Jessica at jdumaine@stlcc.edu.

Jessica du Maine *Biography*

For six years now, Jessica du Maine has been finally working her passion. She seems to have been preparing for this most of her life. After earning a BSEE from the University of Missouri-Rolla (1985), she then cut her engineering baby teeth at Emerson Electric's E&S Division, designing radar control systems and microprocessor based systems. She left this government and defense contractor to complete her MSEE (Biomedical Instrumentation emphasis) at Washington University in St. Louis (1992). She then assisted in NSAID and Obesity research at Washington University Medical School by operating and maintaining GC/Mass Specs. When her funding ran out, she was fortunate to procure a position as the only engineer in a small start-up consulting engineering firm. She then passed the FE then the PE Exams. (To this day, the renewal for her PE license is the fastest bill she pays!) She also received a BICSI RCDD Certification. She started teaching as an adjunct for one semester while consulting full-time then in January of 2002, she began teaching full-time at St. Louis Community College. She is now the Program Coordinator for Electrical Engineering and Technology and an Assistant Professor at SLCC and as, what we like to call a "Road Scholar", teaches throughout the District.

In her spare time she enjoys traveling, tennis and geocaching.

Website Updates

The Section Secretary is partaking in updating the website for the Section as a primary mission for 2008. The first order of business is to document the current officers of each Chapter, Student Branch and Subsection with an e-mail address and phone for each. Secondly, a list of planned events for each of these entities will also be featured on the website for the 2008 calendar year. The website is <http://ewh.ieee.org/r5/stlouis>.

Please send respective updates and 2008 events to the attention of Bob Becnel, bob@becnel.com.

IEEE CIS/IAS/IEEE Seminar

"Model Predictive Control in Power Electronics"

Dr. Sébastien Mariethoz

Automatic Control Laboratory of ETH Zürich

Location: G31, Emerson Electric Co. Hall, Missouri University of Science and Technology,
Rolla

Date: Tuesday, March 4, 2008

Time: 3.30 pm to 4.30 pm. (Refreshments will be provided)

In the context of control, hybrid systems combine continuous and discrete dynamics. Model Predictive Control (MPC) is a technique where the control objective is expressed as a constrained optimization problem. The cost function is evaluated over a receding horizon and based on the evolution of the system that is evaluated through a discrete model. Model Predictive Control is very well suited to solve hybrid control problems that include constraints. Power converters are typical hybrid systems. Their behavior is continuous between the switches' commutation and displays discrete abrupt changes following each commutation. Application of MPC in power electronics started recently, as in most cases the optimization process requires intensive computations that are/were not compatible with the very short sampling time of power electronic systems. Explicit model predictive control has been one of the main enabling factors for the technique expansion to power electronics. It is applicable for a large number of problems and requires a very limited computational power. The optimization problem is solved off-line, the on-line task only amounts to obtain the control input through a look-up table. The talk will present some aspects of Model Predictive Control through some selected power electronics applications.

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2008 Chapter Contacts

Aerospace and Electronic Systems Society (AESS)	robert.k.menzel@boeing.com
Applied Physics <i>Planned</i>	triplettg@missouri.edu
Communications Society (COMSC)	ken.owens@ieee.org
Computer Society (CS)	jdumaine@stlcc.edu
Engineering in Medicine and Biology (EMBS)	dmoran@biomed.wustl.edu
Industry Applications Society (IAS)	gkumar@ieee.org
Power Engineering Society (PES)	alazarski@ameren.com
Computational Intelligence Society (CIS)	gkumar@ieee.org
Education Society Chapter	fran@engr.siu.edu
Rolla Subsection	sahra.sedigh@ieee.org

2008 Affinity Group Contacts

Graduates of the Last Decade (GOLD)	anil@siu.edu
Women In Engineering (WIE)	jacki.stroble@gmail.com

2008 Student Branch Contacts

Missouri University of Science and Technology (UMR)	sarangap@mst.edu
University of Missouri - Columbia	KellerJ@missouri.edu
Washington University	jao@wustl.edu
Saint Louis University - Parks College	gharabr@slu.edu
Southern Illinois University - Carbondale	fran@engr.siu.edu
Southern Illinois University – Edwardsville	gengel@siue.edu

Winter 2008 Upcoming Events

Section Planning Meeting	January 24
Section Planning Meeting	February 28
Engineers' Week Luncheon	February 28
IEEE CIS/IAS/IEEE Seminar	March 4
MOCON Day 1	March 5
MOCON Day 2	March 6
MOCON Day 3	March 7
Section Planning Meeting & Computer Society Presentation	March 27

JANUARY 2008

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