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THE SUNCOAST SIGNAL

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

Volume 50 — No. 11 **http://www.ieee.org/fwcs** **November 2007**

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THE SUNCOAST SIGNAL is published monthly by the Florida West Coast Section (FWCS) of the Institute of Electrical and Electronics Engineers, Inc. (IEEE). THE SUNCOAST SIGNAL is sent each month to members of the IEEE on Florida's West Coast. Annual subscription is included in the IEEE membership dues.

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First IEEE-USA Innovation Forum, November

WASHINGTON (1 October 2007) – Because engineers are our country's principal innovators, and innovation generates economic activity and leads to desirable, high-paying jobs, IEEE-USA will host its first IEEE-USA Innovation Forum at the Fairview Park Marriott in Falls Church, Va., on 6-8 November.

The day-and-a-half forum is designed to promote the innovation process, highlight new technologies and trends, and help scientists, engineers and allied professionals improve their innovative skills. Unlike programs offered by and for business school graduates, the IEEE-USA Innovation Forum is grounded in the experience of successful technology innovators.

IEEE-USA Innovation Institute President Ralph W. Wyndrum thinks the forum will benefit individuals and their organizations in today's globally competitive environment.

"Innovation has been the hallmark of American engineering," said Wyndrum, who served as IEEE-USA president in 2006. "We need to retain our role as the world's technology leader and innovation incubator. Our forum will help prepare leaders responsible for the innovation of new products and services by sharing the experiences of successful innovators in a coordinated program of interaction, mentoring and networking."

Current and future leaders from industry, academia and government will have the opportunity to learn from a distinguished faculty that includes: Mike Austin, who has served as president and CEO of numerous U.S. steel companies; Alain Rostain, founder and principal of Creative Advantage, a strategic innovation consulting firm; Mauro Togneri, a former president and senior executive of U.S. companies with R&D, sales and manufacturing operations around the world; and Steve Walker, an entrepreneur and former Defense Department engineer who helped develop the ARPAnet packet switching system that evolved into the Internet.

Howard Lieberman, founder and CEO of the Silicon Valley Innovation Institute, will deliver the keynote address.

Attendees will learn to innovate in a team-setting and work through real case studies. Group discussions and exercises will focus on:

- Leadership and culture's impact on innovation
- Large vs. small organizations as foundations for innovation
- The innovation process and how to leverage your style to promote innovation
- Capitalizing on new technologies and processes

The event begins on 6 November with an opening night reception and dinner.

The forum starts the next day with a full day of teaching and includes breakfast, lunch and breaks. It will conclude with a half-day program that includes breakfast and a morning break. The cost is $795 for IEEE members and $950 for non-members. See http://www.innovation-institute.org/dcforum/ .

The IEEE-USA Innovation Forum is part of the IEEE-USA Innovation Institute (http://www.innovation-institute.org/).

IEEE-USA advances the public good and promotes the careers and public policy interests of more than 215,000 engineers, scientists and allied professionals who are U.S. members of the IEEE. IEEE-USA is part of the IEEE, the world's largest technical professional society with 370,000 members in 160 countries. See http://www.ieeeusa.org .

Contact: Chris McManes, IEEE-USA Senior Public Relations Coordinator
Phone: + 1 202 530-8356, E-Mail: c.mcmanes@ieee.org

[Your editor yielded to this important IEEE USA event. —PS]

About That "Vision" Thing…

I don't know about you, but every time a company that I'm working for starts to talk about creating a "vision", I feel a shudder. I have seen way too many of these things and it sure seems like the end result is always a long paragraph of meaningless phrases that sure looks like it was written by lawyers. Generally it gets put on some wall in a lobby somewhere, sent to the employees on a bookmark or a badge holder, and then gets quickly forgotten.

Well, as much as I really hate to admit it, I think that your Florida West Coast Section needs its own vision. I don't really care what the actual vision is – in fact, I think that it will change over time as the Section grows and changes itself. In last month's Signal, I discussed why we go to the effort to have a local section here on the West Coast of Florida. In the end, I tried to capture our reason for doing this in one simple phrase: "To Share The Power Of Engineering Knowledge". If we can agree that that works for the day-to-day motivation of what your Section does, then where are we trying to get to?

Amazingly enough, I think that you may already know the answer. If the purpose of our Section is to share engineering knowledge, then we probably want to measure how well we are doing this. I know from talking with the members that are out there doing this sharing on the part of the Section that it is not easy work. Getting teachers, students, and engineering professionals to answer our calls, participate in our sessions, and to volunteer their own time and talents can be very hard to do. And yet our members continue on. They don't let rejections, low attendance, and encounters with members and others who just don't care get them down. I am constantly amazed and heartened by just how much our Section's driving forces are willing to contribute to accomplish our Section's goal.

Having given it some though, it has dawned on me that I'll know that the Section has succeeded in sharing the power of engineering knowledge when it becomes easy to do so. When the effort required to share becomes much less than the desire to learn. In essence, when the pull for engineering knowledge becomes greater than the push required to deliver it. That's it. No fancy lawyer talk, no long paragraph of jumbled words. I can't really give you any solid numbers that can be measured in order to determine when we have arrived at this point, but I can assure you that we will all be able to tell when we've gotten there. I have no idea how long it will take us as a Section to get to this point, but now we know where we are going. Email me your thoughts at jim.anderson@ieee.org

—Jim Anderson, Section Chair

IEEE

Plain Talk about the New Technologies

Registration Now Open!

For Power & Energy Professionals

The IEEE Power Engineering Society is pleased to offer a series of courses focused on "Plain Talk about the New Technologies" for the Electric Power System of the 21st Century for the Non-Engineering Professional.

The courses are scheduled for: November 6-8, 2007 in Arlington, Virginia:

- Day 1: New Generation Technologies
- Day 2: Transmission and Distribution Technologies
- Day 3: New Systems and Software Technologies for Planning, Operation and Control

Register Today!

Go to http://www.ieee-pes.org/wfgfqwq_loszoodgh.html to view the Plain Talk Technologies Brochure; register online at http://www.ieee-pes.org/yvjvfbb_loszoodgh.html

Programmable Logic Users Group

Programmable Logic Users Group's Annual PL-UG Fest

November Chapter Event—Computer Society, AESS and PL-UG

Date/Time: Thursday, November 15, 2007, 8:30 AM to 4:30 PM

Holiday Inn Select; 3535 Ulmerton Road, Clearwater, FL 33762,

Please RSVP online at: http://time2meet.com/fwcs-meetings/

This an annual event sponsored by the Florida West Coast Computer Society, the Aerospace & Electronic Systems Society (AESS) and the Programmable Logic Users Group (PL-UG). PL-UG Fest is a full day of vendor and user presentations focused on embedded systems design with an emphasis on CPLD and FPGA technology.

This is an open meeting and there is no charge for attendees.

Non-members and students are welcome.

Lunch and snacks will provided by the sponsoring vendors.

Previous vendors included AccelChip, Aldec, Altera, Avnet, Lattice Semiconductor, Marathon Sales, Memec/Insight, Mentor Graphics, Semtronic Associates, Siliconexion, Synopsys, Xilinx, EDA/Prover Technologies and others. **Also, new this year, several half-day training sessions are planned for the afternoon of Nov. 14.**

We expect these vendors and more to present in November. More information will appear in November IEEE Signal after confirmation and details on the presentations and the speakers. Companies wishing to participate in this year's PL-UG Fest can sign up on the PL-UG website (www.pl-ug.org) or call Jim Lumia at 813-832-3501.

This is a Joint Meeting with the Programmable Logic Users Group (www.pl-ug.org)

FWCS MTT/AP/ED Chapter News

Well, we made it through another summer. All of the heat and humidity are gone and the dry cooler air has started to show its face in the mornings, at least I hope. I'm writing this in early October to be included in the November Signal. So, I hope that by the time this is published, we can say goodbye to the muggy summer.

And what a summer it was for the Florida West Coast MTTs/APs/EDs Chapter. We held a Social meeting at the Four Green Fields in Downtown Tampa. A handful of people showed up and we were able to chat for a couple of hours over a few drinks and snacks. I'd like to try this again in December. If you have a preference for a location, send me an email and I'll see what I can do.

We also hosted Dr. Peter H. Siegel from the California Institute of Technology and Jet Propulsion Labs. He presented "Terahertz Technology in Inner and Outer Space. The presentation was very interesting. Dr. Siegel introduced us to Terahertz technology, talked about the applications in outer space and then told us about the other applications that they're currently investigating. We had a great turnout and a lot of questions. Thanks to those of you who attended!

We have one more Technical meeting scheduled for this year. Dr. Wolfgang Heinrich will present: "Flip-Chip for Millimeter-wave Packaging." Dr Heinrich is a well renowned speaker who participates in the MTT Distinguished Lecturer Program. Please see page 9 for details.

TRAK Microwave has graciously agreed to sponsor the refreshments at all four of our Technical Meetings this year. TRAK's support and generosity to the Chapter over the years is greatly appreciated. The Chapter would like to give a big Thank You to TRAK Microwave.

The Chapter invites these speakers to the area to make technical presentations that benefit the community of engineers in the geographical area of the Florida West Coast Section of IEEE. In order to continue bringing speakers of this caliber to the area, the Chapter needs your support. You can help support the Chapter by simply attending one or all of these meetings. The attendance numbers that we report to the IEEE show the strength of the support on the Engineering Community in this area. So, mark your calendars and I hope to see you at all three upcoming meetings!

P.S. If you are interested in helping with the duties of the section, email me at koconnor@trak.com

— Ken A. O' Connor

Arc Flash Study Development and Solutions

Date: November 7, 2007,

Time: Reg.: 8:30AM – 9:00AM, Seminar 9:00AM – 2:00PM

Speaker: James Bowen, Technical Director, Powell Ind.

Location: TECO Hall, Tampa Electric Company, 702 N. Franklin Street, Tampa
Space is limited to 50 attendees.

Cost: $75 Members , $125 Non-Members. (Includes Lunch)

PDH Credits: 4 professional development hours will be awarded. (For USF students a certificate for course completion will be provided.) Be sure to enter your name and PE number on the signup website as it appears on your license. FL exempt provider #0003849.

RSVP:http://www.ewh.ieee.org/r3/floridawc/ (Select Reservations) Space limited to first 50 registrants!!!

Make checks payable to: IEEE FWCS,
Send checks to: Ralph Painter, IEEE FWCS Treasurer
648 Timber Pond Drive, Brandon, FL 33510-2937

Questions: **Tom Blair** at 813-228-1111, ext 34407 or thblair@tecoenergy.com

Your local IEEE PES/IAS Chapter is offering this seminar on Arc Flash Calculations and Solutions. We are still working on arrangements and details will be posted on the registration page.

The National Electrical Safety Code* (NESC) is the standard used by electrical utilities and OSHA when implementing utility electrical safety procedures. The 2007 edition of the code acknowledges a history of incidents that have resulted in the ignition of non-Flame Retardant clothing as a result of arc flash in the utility industry.

Effective January 1, 2009, the NESC requires electric utilities to perform an assessment of their system's arc flash potential. Depending on the results, some utilities will have to protect their employees with flame retardant clothing.

Are you prepared to meet this new requirement? This seminar will cover the procedure of performing an arc flash incident energy study based on NFPA70E and IEEE 1584 and review some potential engineering solutions to minimize the incident energy levels.

IEEE

USF UNIVERSITY OF SOUTH FLORIDA

Department of Computer Science and Engineering

Networked Sensing & Control: The Case for Intermittent Feedback

Dr. Panos Antsaklis

Department of Electrical Engineering
University of Notre Dame

Date/Time: Thursday, November 15, 2:00 PM

Location: USF CUTR 202

Networked embedded sensing and control systems are increasingly becoming ubiquitous. Such systems are typically spatially isolated from one another, operate in an asynchronous manner, communicate over a wide area communication network with both wired and wireless components, and are in many cases resource constrained.

For more information contact Dr. Kimon P. Valavanis by email at kvalavan@cse.usf.edu or at (813) 974-6564.

GPS and Inertial Data Processing Seminar

Date: Wednesday, November 14, 2007

Time: 8:00 am to 5:00 pm

Speaker: Dr. James L. Farrell, VIGIL, Inc.

Location: Holiday Inn Select, 3535 Ulmerton Road, Clearwater, FL

Cost: IEEE Members $50.00; Non IEEE Members $100.00; Join IEEE or AESS—Attend Seminar at no Cost. Lunch will be sponsored by the IEEE AESS

RSVP: Reserve you seat at: http://www.time2meet.com/fwcs-meetings/

Membership information: http://ewh.ieee.org/r3/floridawc/membership.html

Questions: Jim Lumia for information to Join IEEE or add AESS to your IEEE membership. JLumia@ieee.org (813)832-3501.

Program

The first half-day will benefit those who have never processed GPS data. Graphics illustrate orbital parameters and, with real satellite measurements, solutions are computed for navigation and timing while demonstrating satellite geometry effects. Graphical demonstration and computation of performance achievable in a simulated cruise flight closes the introductory session.

The second half-day applies GPS updating to a low-cost inertial measuring unit (IMU). Unnecessary complexity of current mechanizations, an outgrowth of yesteryear's limited computing capabilities, is discarded. The resulting simplified approach, applicable to the overwhelming majority of practical operations, is validated by state-of-the-art performance shown from van and flight test results.

The Instructor: James L. Farrell (MS, UCLA, Ph.D., U. of MD,) is a former ION Air Nav Representative, a Life Senior Member of IEEE, former local board member of AIAA, registered professional engineer in Maryland, and member of various scholastic honorary fraternities. Technical experience includes teaching appointments at Marquette and UCLA, two years each at Minneapolis Honeywell and Bendix-Pacific, plus 31 years at Westinghouse in design, simulation, and validation of navigation and tracking programs. He is author of INTEGRATED AIRCRAFT NAVIGATION (Academic Press, 1976; now in paperback after five hard-cover printings), and of GNSS AIDED NAVIGATION AND TRACKING (2007) - both distributed by NavtechGPS. He is a former columnist for WASHINGTON TECHNOLOGY, and has written over 80 journal and conference manuscripts. He served as co-chairman of RTCA Working Group for GPS Integrity. With VIGIL Inc. he has continued his teaching (on University campus and in seminars - industry, conference, IEEE, and on-site), while consulting for private industry, DoD, and University research. His main areas of recent activity are GPS/inertial integration, calibration, and integrity, writing programs validated with test data from Ohio University.

Aerospace & Electronic Systems Society (AESS) supports interest in the design, integration, test and analysis of large, complex systems consisting of major subsystems that contain dissimilar electronic devices.

IEEE Color Book Seminar Series - IEEE 141 (The Red Book) – Recommended Practice for Electric Power Distribution for Industrial Plants

Date: Friday, December 14 2007

Time: 9:00 am-3:00 pm

Speaker: Thomas Blair, P.E., Senior Consulting Engineering, Tampa Electric Company

Location: USF Tampa Campus, College of Engineering, Fowler Ave, Tampa, FL

Space is limited to 35 attendees. NOTE YOU WILL NEED TO PURCHASE A ONE DAY PARKING PASS from the visitor center at the main entrance off fowler.

PDH Credits: 4 professional development hours will be awarded. (For USF students a certificate for course completion will be provided.) Be sure to enter your name and PE number on the signup website as it appears on your license. Florida exempt provider # 0003849.

Cost: USF Students with ID FREE - $75 Members , $125 Non-Members. (Includes Lunch)

Note: This course will be available by webcast on APEX for which there will be an additional fee.

RSVP: Select Reservations online at:
http://www.ewh.ieee.org/r3/floridawc/

Make checks payable to: IEEE FWCS
Send checks to: Ralph Painter, IEEE FWCS Treasurer
648 Timber Pond Drive
Brandon, FL 33510-2937

Questions: Tom Blair at 813-228-1111, ext 34407 or thblair@tecoenergy.com

Your local IEEE PES/IAS Chapter is offering this seminar on IEEE 141 IEEE Recommended Practice for Electric Power Distribution for Industrial Plants (The Red Book) as part of a series of seminars based on the IEEE Color Books. We plan to host one seminar per semester starting fall 2007 at the University of South Florida to support the Power Program at USF and provide students and local members with information on IEEE standards. This course will also be available via APEX distribution system. Please contact Dr. Ralph Fehr for more details on availability of Apex materials.

This seminar will cover the main topics from IEEE 141 of Short Circuit Calculations, Application and Coordination of Protective Devices, Grounding, Power Factor and Related Considerations, and Harmonics in Power Systems. This seminar will present guidance in design, construction, and continuity of an overall electrical distribution system to achieve safety of life and preservation of property; reliability; simplicity of operation, care and maintenance, and flexibility to permit development and expansion. Recommendations will be made regarding system planning; voltage considerations; system protective devices; fault calculations; grounding; power switching, transformation, and motor-control apparatus. Examples of fault calculations, relay coordination, and associated incident energy levels using commercially available software will be demonstrated.

Thomas Blair is a Senior Consulting Engineer with Tampa Electric and works in the Generation Engineering department. He performs electrical system analysis and uses the results to specify electrical equipment ratings, protective relay settings, and electrical system arrangement. Mr. Blair is a Senior Member of IEEE and Chair of the local PES/IAS Chapter.

November PE/IA Meeting—Lakeland Electric's Substation Electric Fire

Lunch meeting at TECO Plaza, November 20th, 2007

Randy Dotson, Manager of Substation Engineering and Operations at Lakeland Electric, will share with us the details of the recent fire at Lakeland. Randy will describe the details of the fire, including the impacts to the Florida Grid, the environmental issues, the transformer replacement lead time, and the engineering involved in keeping this critical substation operational while waiting for the transformer replacement. Mark your calendars now for this special event.

This year's 2007 K-12 GATI Support

It is important for IEEE-FWCS to strongly participate in all levels of the Great American Teach In (GATI) on November 14 in Pinellas and other counties that are offering Engineers/Scientists this opportunity.

Before a child reaches its 5th year, educators know that the child's native ability to become an engineer/scientist may already exist and have possibly been well developed. However, there has always been the greatest interest among GATI volunteers to meet with High School classes. Between second and 10th grade, students often encounter a "void" – little or no further exposure or stimulation to Science/Technology subjects. It is thus only "natural" that only a few students leave High School properly prepared to enter Engineering College's studies. For this reason it becomes critical that the "void" be filled for those students who are endowed with a native ability to enter eventual engineering/scientist careers. Currently some of these potential engineers/scientists are being deflected into, for them, less suitable career paths, since schools systems normally do not have additional resources to fill this "void". It behooves us, as professionals, to accept the challenge and to, as a minimum, fill this gap with additional volunteers who will participate in GATI for elementary through 10th grade classes. (For future years the potential exists to develop after-class hours Engineering/Science clubs for students handicapped by this "void".)

I. What are some of the factors one might consider important for future "engineers/scientists" in GATI class sessions:

- Engineering is a unique *Problem Solving Discipline* –
- Engineering addresses Forecasting; most other disciplines are only backward (historically) oriented –
- Engineers must communicate well with other disciplines
- In the U.S. the following may also apply:
  - Replace the retiring Engineering workforce to retain the country's economic health
  - A need for Broad public interest that creates "excitement" (like large space programs)
  - The best Engineers/Scientists should exhibit non-conforming leadership characteristics (examples: Lincoln, Washington, Benjamin Franklin, Einstein)
  - The general perception that Excelling in Math/Science is NOT the ONLY route to Science/Engineering careers

II. To volunteer as a GATI speaker follow the instructions and submit a GATI brochure by Nov. 9th, issued in Pinellas County by PCSB/Progress Energy. In other Florida counties these should be available from your county's School Board and many schools. You may also want to make contact with your preferred or the fact that the opportunity to address students is normally only available for one day, and that day is November 14th.

III. In the past greatest interest by volunteer GATI speakers has existed for Senior and Junior High School classes. These classes are also the upper terminal for U.S. General Education (K-12) students, and they are provided locally by their school systems. (After graduation, a student's next 13 – 20+ years involve "advanced" (or specialized) education that is regionally or nationally provided by Colleges and Universities.)

IV. Thus overall education of a U.S. student can be looked at as:

Years	Educ. Level	Years	Educ. Level	Degree
Pre-K & K	Kindergarten	11-14	Jr. College	AA/AS degree
1 – 5	Elementary School	15-15	College	Bachelor
6 – 9	Middle School	17-18	Graduate School	Masters
10 – 12	High School	19-20+	Research Institute	Ph.D.

Thank you for considering helping IEEE with this year's GATI on Nov. 14th! —Rudolf E. Henning, Eng.Sc.D., P.E.

IEEE

USF Student Branch News

The Student Professional Awareness Conference (S-PAC) is going to be held **November 13, 2007** in the **TECO Room in the Education Building** at USF, Tampa Campus from **10:00AM to Noon**. The S-PAC is going to cover topics in considering career and professional development after receiving a bachelor's degree. At minimum, we will be having three speakers covering the following topics: earning your masters in graduate school, considering management opportunities and using creativity in engineering. We will be having appetizers at the beginning of the meeting and gourmet sandwiches for lunch.

Our Student Branch recruited new members during the USF Engineering Open House on October 25 & 26, which features our engineering organizations and departments.

The Fall Student Senior Banquet will be held December 7, 2007 in the TECO Room in the Education Building at USF, Tampa Campus from 7:00PM – Midnight. We are looking for any companies or individuals to **SPONSOR** us. Please get in touch with Kosol Son, kson@mail.usf.edu; tables can be sponsored for $200 a table, you are more than welcome to sponsor more than one table. The banquet is a GREAT opportunity to recruit newly graduated engineers! In addition, you will receive free advertising in the Florida West Coast's The Signal if you sign up by November 14th.

Brain Teaser Challenge Column

—By Butch Shadwell

October BTC After being introduced to the notion of sartorial splendor last month I asked "… what if you shine your shoes so the toe is really shiny and the top of the toe of your shoe is approximately a flat horizontal surface. Then with your shoe sitting on a table top, you hold flashlight at an angle to bounce the beam off of the shiny surface toward your eye. To attenuate this reflected light most, would you place a polarizing filter with the slits in a vertical or horizontal (parallel to the table top) orientation, between your eye and the shoe?"

If you have ever worn a pair of polarized sun glasses while fishing, you should have known this one. As it turns out, when vertically polarized light hits a horizontal surface it tends to be absorbed or scattered, while horizontally polarized light gets reflected. Polarized sun glasses are vertically polarized, which tends to reduce the glare (or horizontally polarized light). But I bet you already knew that.

November BTC

I have been asked to keep this one short. I suppose some readers would rather I didn't run on about non-technical things and spin my silly little yarns. It is said we all have our crosses to bear, I'm afraid my warped imagination will have to be one of yours.

Today I am driving to Tallahassee once again to speak to grad students at the FSU/FAMU College of Engineering. I am honored that I have been invited to speak to this group so many times. I know they appreciate my fashion tips, but I suspect the main reason I get invited back is my more than 35 years in industry creating new products and technologies in physics and electronics.

Not long ago I filed a patent application on a new device that involved a strain gauge sensor. In this case they were metallic resistive elements. Due to the coefficient of expansion of the material to which the gauge is attached, these sensors can have a lot of thermally induced error. Can someone suggest a circuit configuration to minimize this effect? A little hint, I was sitting in the west seat when it came to me.

For the BTC: *Reply to Butch Shadwell at b.shadwell@ieee.org (email), 904-223-4510 (fax), 904-223-4465 (v), 3308 Queen Palm Dr., Jacksonville, FL 32250-2328.*

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Flip-Chip for Millimeter-Wave Packaging
MTT/AP/ED Chapter Meeting

Dr. Wolfgang Heinrich
Ferdinand-Braun Institut (FBH)
Microwave Department

DATE/TIME: Tuesday, November 13, 2007, 6:00 PM

RSVP Leave name & country of citizenship with Ken O'Connor at (813) 901 7246 by November 5th or koconnor@trak.com

LOCATION: TRAK Microwave Corporation
4726 Eisenhower Blvd., Tampa, FL
For driving directions, contact Ken O'Connor

ABSTRACT:

Emerging markets for mm-wave systems demand for cost-effective packaging solutions. Flip-chip is one of the most promising approaches in this regard. The talk presents basic features as well as design guidelines and recent results demonstrating the potential of flip-chip for mm-wave and broadband multi-chip modules and packaging.

BIOGRAPHY:

Dr. Wolfgang Heinrich received the Dipl.-Ing., Dr.-Ing. and habilitation degrees in 1982, 1987, and 1992, respectively, all from the Technical University of Darmstadt, Germany. Since 1993, he has been with the Ferdinand-Braun-Institut (FBH) at Berlin, Germany, where he is head of the microwave department and deputy director of the institute. His present research activities focus on MMIC design with emphasis on oscillators, GaAs and GaN power transistors, electromagnetic simulation and mm-wave packaging.

Dr. Heinrich has authored or coauthored more than 200 publications and conference contributions. He served as Distinguished Microwave Lecturer for the term 2003/2005. Since 2002, he has been chairman of the German IEEE MTT/AP chapter.

Bring a guest; non-members welcome!
Refreshments will be provided.

IEEE ELECTRON DEVICES SOCIETY

November 2007 Calendar of Events (For more information see P. 1 *Inside this Signal…*)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28	29	30	31	1	2	3
4	5	6 *5:30 pm IEEE FWCS ExCom TECO Tampa*	7 *8:30 am Arc Flash Study TECO Tampa p. 5*	8	9	10
11	12	13 *6 pm Flip-Chip mmWave TRAK Tampa p.9*	14 *8 am GPS, Inertial Processing Cl'rwater p.6*	15 *8 am PL-UG Fest p. 4* *Sens. & Contr. USF p 4*	16	17
18	19	20 *Noon LE's Fire TECO Tampa p. 7*	21	22	23	24
25	26	27	28	29	30	1

PES Plain Talk-New Technologies 11/6-8

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