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Consumer Electronics Society (CES)

Topic: The Wireless Revolution Continues: Can Technology Keep Up with the Challenge?

April 14: Monday

Consultants Network (CN)

Topic: Gen Y - Are They Ready for the Real World?

April 15: Tuesday

Electromagnetic Compatibility (EMC)

Topic: Advantages of Ultra-Thin Embedded Passives in High Speed & Digital Applications

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Microwave Theory and Techniques (MTT)

Topic: Hot Spots Inside Cool Chips: Coupling Measurements and Computations to Get Full 3D Temperature Fields of Complex Submicron Devices

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Life Member Group (LMG) & Technology Management Council (TMC)

Monthly Joint meeting

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IEEE Direction Dallas Section

April 2008

Volume 51, Number 8

From the Chair

By Robert Shapiro

Hello IEEE Dallas Section Members and Friends,

The next couple of months are a very busy time for our Section.

In April we have the IEEE Region 5 Meeting in Kansas City, MO. and the IEEE USA Meeting in Indianapolis, IN.

The Region 5 Meeting is open for all members and volunteers and has student competitions, professional training and a conference, and Volunteer training. The IEEE USA meeting is also open for all members and volunteers and provides training for professional activities such as the Consultant's Network and Graduates of the Last Decade (GOLD).

In early May we will have our annual Awards Banquet.

On the Membership Development front the IEEE Dallas Section continues to thrive as we have over 5200 members. Please continue to refer your colleagues to the IEEE and please encourage your businesses and schools to support our activities in any way possible.

Please let me know if there are any questions.

Best regards,

Bob Shapiro
 IEEE Dallas Section
 2008 General Chair
 bshapiro@ieee.org



Joint meeting between IEEE Dallas Section and IEEE Consultants network

Topic: Gen Y - Are They Ready for the Real World?

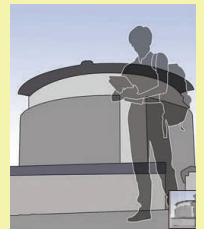
Date: Monday, April 14, 2008

Time: Social/Networking/Dinner 6:15 pm Program 6:45 pm.

Location: Holiday Inn Select,
 1655 North Central Expressway, Richardson, TX - 75080
 (South of Campbell Road, west side of Central)

Cover: \$5 for IEEE Members, \$15 for non-IEEE Members/Guests (includes light supper buffet) IEEE members who RSVP may bring a guest at no additional charge.

Speaker: Nancy Barry, author of *When Reality Hits: What Employers Want Recent College Graduates to Know*. For more information about Nancy, visit her website at www.nancybarry.com.



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Dallas Section

Chapter Meetings/Events

Chapter: Consumer Electronics Society (CES)

Topic: The Wireless Revolution Continues: Can Technology Keep Up with the Challenge?

Date: Tuesday, April 8th, 2008

Time: Lunch/Chapter business: 11:30 AM - 11:45 P.M.
Program: 11:45 - 12:45 P.M.

Location: Holiday Inn Select, Richardson
1655 N. Central Expressway (US 75)
(Southbound frontage road, south of Campbell)
Richardson, TX 75080

Speaker: Dr. Bill Krenik, Chief Technical Officer, Wireless Business Unit, Texas Instruments.

DOOR PRIZES

Abstract:

The exploding market for consumer electronics is creating diverse product opportunities, with many products demanding unique technology features to enable successful performance, power-efficiency, size and cost. The wireless market is a high-growth market, and a critical driver of technology innovations. Whether creating a cutting-edge mobile phone with the hottest features or a modest handset required for high-growth emerging economies, a mobile designer is increasingly more challenged to satisfy product goals with existing technology. Bill Krenik will address the critical technology, process and packaging challenges and solutions required to meet mobile market requirements for today and tomorrow.

Speaker Biography:

As Chief Technical Officer, Dr. Bill Krenik is head of TI's advanced wireless research team. He oversees the study and development of emerging wireless technologies and system architectures, and shapes the impact they will have on the future of wireless communications. He also defines and launches new research initiatives, supports advanced wireless product developments, and manages activity related to wireless industry standards.

Dr. Krenik has played an instrumental role in the design of TI's silicon and software technologies, optimizing them in view of the critical technology requirements of mobile handset manufacturers and mobile operators. He is widely respected for his strategic vision and contributions to the development of the industry's first single-chip mobile phone solutions, now shipping in high volume production in many phone models. Known as TI's LoCosto™ family of single-chip solutions, the popular platform employs the company's one-of-a-kind DRP™ technology that applies digital techniques to formerly analog functions to achieve substantial size, power and cost reductions. Dr. Krenik is also closely involved in the development of technologies for advanced silicon integration, power management and control, data processing, analog and RF circuit design, communications systems, wireless applications and services, and wireless system architectures.

Dr. Krenik serves on several academic and professional boards and was elected a Fellow of the Institute of Electrical and Electronics Engineers (IEEE) in 2005. He is a registered professional engineer in the state of Texas and holds more than 40 U.S. patents. He speaks frequently at professional industry and technical events and has published numerous articles and technical papers. A well-respected industry expert, he also is frequently quoted in top U.S. trade and business publications, including USA Today, EE Times and IEEE Spectrum.

Dr. Krenik has been employed by TI since 1984. He received a doctorate in electrical engineering from the University of Texas, Dallas, in 1993. He also holds a master's degree in electrical engineering from Southern Methodist University and a bachelor's degree in electrical engineering from the University of Minnesota.

For additional information, please contact Sue Hui at (214)567-5017, shui@ti.com

Or visit our website: <http://www.DallasCES.org>

Chapter: Consultants Network (CN)

Topic: Gen Y - Are They Ready for the Real World?

Date: Monday, April 14, 2008

Time: Social/Networking/Dinner 6:15 pm Program 6:45 pm.

Location: Holiday Inn Select,
1655 North Central Expressway, Richardson, TX
(South of Campbell Road, west side of Central)

Cover: \$5 for IEEE Members, \$15 for non-IEEE Members/ Guests (includes light supper buffet) IEEE members who RSVP may bring a guest at no additional charge.

Speaker: Nancy Barry, author of *When Reality Hits: What Employers Want Recent College Graduates to Know*

Abstract:

Many employers across the country say recent college graduates are not prepared for the real world. How can this be? They just spent four (or more) years getting a great education. Surely they're prepared by now. In Nancy Barry's book, *When Reality Hits: What Employers Want Recent College Graduates to Know*, she shares the secrets to success – mastering the “soft skills.” During her presentation, Nancy will share her thoughts on the importance of colleges and employers working together to prepare Gen Y for the real world. She'll also cover the Top 5 things you need to know if you're managing twentysomethings.

Speaker Biography:

Nancy Barry, a 25-year corporate veteran, walked away from what she describes as “the best job in the world” to share her extensive business experience with others. She firmly believes “soft skills” are the key to success in life and business.

One of her passions is helping twentysomethings be successful in their careers. Nancy is the author of *When Reality Hits: What Employers Want Recent College Graduates to Know*, published in May 2007. In her book, she shares the secrets to success – mastering the “soft skills” in the workplace. She tells twentysomethings what managers want them to know and don't have time to tell them.

Prior to launching her own company in July of 2005, Nancy served as vice president/community services for The Dallas Morning News and WFAA-TV and vice president and administrator for The Dallas Morning News Charities, an annual campaign to raise money for the hungry and homeless.

Nancy is a member of the National Speakers Association, National Association of Colleges and Employers and National Association of Women Business Owners. She serves on the advisory councils of the Communities Foundation of Texas and the Dallas Women's Foundation. She also serves on the president's advisory council for the Dallas Center for the Performing Arts.

A native of Dallas, Nancy is the proud mother of two children. Her son, Chris, graduated from Yale University and her daughter, Lauren, is a junior in high school.

For more information about Nancy, visit her website at www.nancybarry.com.

Chapter: Electromagnetic Compatibility (EMC)

Topic: Advantages of Ultra-Thin Embedded Passives in High Speed & Digital Applications

Date: Tuesday, April 15, 2008

Time: Refreshments 6:00 PM Program 7:00 PM

Dallas Section

Chapter Meetings/Events

Location: Nemko; 800 N. Kealy; Lewisville, TX 75057 (972) 436 - 9600

Speaker: Joel Peiffer, 3M

Hosted By Tom Tidwell
RSVP to Joe Stanfield , joe.stanfield@ieee.org

Abstract:

The presentation will cover many advantages of ultra-thin embedded passives materials in rigid and flexible printed circuit boards/chip packaging in high speed digital and RF applications. A large amount of electrical performance, discrete capacitor elimination data and reliability data will be shared that was conducted by independent OEMs, universities and PCB fabricators.

It will be shown that when ultra-thin embedded capacitor materials are used for distributed capacitance (power-ground cores) for power supply decoupling the following advantages will result:

- Lowered impedance of power distribution system
- Dampening of board resonances
- Reduced noise on power and ground planes
- Reduced radiated emissions (EMI)
- Elimination of large number of discrete decoupling capacitors
- Reduced assembly costs
- Reduction in board size and/or the number of layers

All of these items can be accomplished with an ultra-thin ceramic filled epoxy material that is compatible with standard FR-4 processing including laser drilling. Additionally, this material has UL recognition, is RoHS compliant, does not contain bromine and is compatible with lead free assembly.

This material is not only being used in numerous high speed digital applications but is also being used in very high volume RF applications, including cell phones. In 2007, over 100 million cell phones will be manufactured using this ultra-thin, ceramic filled epoxy material manufactured by 3M. The driver for this application is space reduction and improved RF filtering. In this application, over 50 discrete capacitors per square inch were removed and RF noise was reduced by over 30 dB.

Speaker Biography:

Joel Peiffer received his B.S. in Materials Science from the University of Minnesota in 1982. He is currently employed by 3M in St. Paul, MN as an Advanced Engineering Specialist in 3M's Electronic Solutions Division. His current position is working as an Applications Engineering Specialist for 3M's Embedded Capacitor Laminates. Since 1996, he has been responsible for the development and commercialization of 3M embedded passive and related materials. His previous work includes over 25 years of experience in printed circuit board and electronic packaging manufacturing. Previous to employment at 3M, Joel was employed at BMC Industries, Hutchinson Technology, Century Circuits and Digital Equipment.

For additional program information, refer to the Dallas EMC Chapter Website, <http://www.DallasEMC.org>

Chapter: Microwave Theory and Techniques (MTT)

Topic: Hot Spots *Inside* Cool Chips: Coupling Measurements and Computations to Get Full 3D Temperature Fields of Complex Submicron Devices

Date: Tuesday, April 22, 2008

Time: Lunch 11:30 AM / Program 12:00 noon

Location: Pasand-Indian Cuisine
1377 W Campbell Rd,
Richardson, TX 75080
(972) 644-4447
[For Directions Click here.](#)

Speaker: Dr. Peter E. Raad, SMU Mechanical Engineering and TMX Scientific, Inc.

Cover: Mandatory \$5 includes admission and buffet. No charge for Student and Life Members.

RSVP: Please RSVP by noon, April 17th, so we can submit a headcount to the restaurant.

Abstract:

With ever increasing physical complexity, shrinking feature sizes, and higher local power densities, heat extraction has become a serious impediment in the continuing evolution of electronic devices. In short, as devices have shrunk, their cooling problems have grown, to the point that many now wonder whether Moore's law has finally crashed against the laws of thermodynamics! Since we're not about to curb our appetite for electronic processing, we need to seek effective solutions to the unavoidable thermal issues, and to do so, we simply need to first improve our knowledge of the actual temperature distributions within the devices. Indeed, the direct knowledge of thermal behavior is a necessary condition in efforts to improve analysis and design, shorten design cycle time, assess reliability, and diagnose defects. Ironically though, the same culprits that have accentuated the thermal issues – device complexity and shrinking feature sizes – make temperature measurements and numerical predictions challenging pursuits. Put simply: now that we agree that we cannot afford not to know internal temperatures, and know them well, how can we measure what we cannot see or access, and how can we resolve the physics over the wide range of spatial and temporal scales? This talk will address the issues of temperature determination by novel measurement techniques, both direct and computationally-enhanced.

Speaker Biography:

Peter E. Raad received the BSME, MS, and Ph.D. in mechanical engineering from the University of Tennessee at Knoxville. In 1986, he joined the mechanical engineering department at SMU as an Assistant Professor and is currently a Full Professor. He holds the Linda Wertheimer Hart Professorship and is the founding Director of the Linda and Mitch Hart eCenter at SMU. Under his leadership, the Hart eCenter incubated in 2002 The Guildhall at SMU, a novel industry-university collaborative educational program designed to educate and train future practitioners and innovators in the fast-growing field of digital game development. Prior to that Prof. Raad served as the Associate Dean of the SMU School of Engineering, in charge of all academic affairs, research and graduate studies, and computer operations. Between 1990 through 1993, he held the J. Lindsay Embrey Trustee Professorship in Engineering, an endowed chair for an outstanding junior faculty member. He has received several awards, including four times the Outstanding Graduate Faculty Award, twice the Outstanding Undergraduate Faculty Award, and the Sigma Xi Faculty Research Award. In 1999-2000, he was named the ASME North Texas Section Engineer of the Year, and in 2006 he received the Harvey Rosten Award for Excellence in the thermal analysis of electronic components. In 2007, Dr. Raad was included in Next-Gen's Top 25 most influential people in the video gaming industry for 2007. Prof. Raad has published over 40 articles and over 100 conference papers. He has raised over \$2.5M in funding from government and industry in support of his extensive research in tsunami mitigation and solid-fluid wave interactions, as well as his founding in 1995 of an industry-university collaborative laboratory dedicated to the computational modeling and laser-based measurement of nanoscale electronic devices. This work was recognized in 2006 by the Best Paper Award at SEMI-THERM. Prof. Raad has served as an associate editor for the ASME Journal of Fluids Engineering. He is a Fellow of ASME, Senior Member of IEEE, member of APS and Sigma Xi, and a 1979 elected member of Tau Beta Pi. He is a Licensed Professional Engineer in the State of Texas.

Sponsorship:

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More information at the MTT website:

<http://ewh.ieee.org/r5/dallas/mtt/>

Dallas Section

Chapter Meetings/Events

Chapter: Circuits and Systems (CAS)

Topic: Variation-Tolerant SRAM Design Techniques

Date: Wednesday, April 23, 2008

Time: 6:30pm: Pizza & Drinks; 7:00pm: Presentation

Location: **Dallas Texins Activities Center**, Conf Room 1
13900 N Central Expwy.
(North end of Texas Instruments expressway site,
site entrance on north-bound access road, between Mid-
park Rd. & Spring Valley Rd.)

Speaker: Michael Clinton
Texas Instruments, Dallas, TX.

Abstract:

While SRAMs increasingly dominate the design of microprocessors and ASICs with large cache sizes, they are also most prone to variability. This talk will discuss the impact of variations on SRAM noise margin, cell stability, and SRAM performance. These large deviations pose severe barriers to scaling of supply voltage, channel length, and transistor count for conventional 6T SRAM-dominated CMOS ASICs and microprocessors.

We will present alternate SRAM architectures which can help continue the scaling of SRAMs without compromising their robustness.

Speaker Bio:

Mike has been involved in integrated memory circuit design for 25 years. During this time he has worked on SRAM, DRAM and MRAM designs and technologies. Mike is currently a Senior Member of the Technical Staff at Texas Instruments in Dallas, Texas. He has been with TI for the last 5 years where he has been involved in SRAM design. He has been responsible for power management and design for variability issues related to TI's 65nm, 45nm and 32nm SRAM compilers. Prior to joining TI,

Mike was a Senior Engineer at IBM where he worked for nearly 20 years. At IBM he led design teams and worked on DRAM designs ranging in density from 256kb up to 512Mb. In addition to DRAM design activities, Mike also worked on MRAM development and was involved with the start-up of Sematech.

Technology Management Council (TMC):

Topic: Monthly Meeting. Joint meeting with the Life Member Group.

Date: Friday, April 25th 2008

Time: 11:30 A.M.

Location: Holiday Inn Express, Telephone (972) 238 - 1900.

For more information, contact: Bob Bishop,
Chair Dallas Section TMC. r.bishop@ieee.org

Life Member Group (LMG):

Topic: Monthly Meeting. Joint meeting with the Technology Management Council.

Date: Friday, April 25th 2008

Time: 11:30 A.M.

Location: Holiday Inn Express, Telephone (972) 238 - 1900.

For more information, contact: Paul Lakhnanpal,
Chair Dallas Section LMG narindra_lakhnanpal@hotmail.com

IEEE Dallas Section Awards Banquet

May 3: Save the Date

The IEEE Dallas section has planned to have the annual Awards banquet on Saturday, May 3rd from 7:00pm – 10:30pm.

The location is being finalized and will be announced shortly. The event promises to be fun filled and entertaining.

In addition to the presentation of awards to the various recipients, there will be a casino night with lot of gifts at stake.

Stay tuned for more details. Please check our website at

<http://ewh.ieee.org/r5/dallas/>

Dallas Section

Chapter Information

Aerospace and Electronic Systems (AESS)

Website: <http://ewh.ieee.org/r5/dallas/aes/index.html>

Chapter Chair: Tim D. Reichard (972) 380-6605
Tim_D_Reichard@raytheon.com
Program Chair: Jared Ellington (214) 654-5660
Secretary / Treasurer: Mark Gober (972) 205-4752
Mark_D_Gober@raytheon.com

Antennas and Propagation (AP)

Website: <http://www.ieeedallas-aps.org/>

Chair Dr. Choon Sae Lee (214) 768-3257
csl@engr.smu.edu

Circuits and Systems (CAS)

Website: <http://ewh.ieee.org/soc/cas/dallas/>

General chair: Sudhind Dhamankar
sudhind@ti.com
Vice chair: Luke Wu
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Technical program chair: Bogdan Staszewski
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Communications & Technology (CVT)

Website: <http://www.cvt-dallas.org/>

Chair Steve Maxwell (972) 250-1289
smaxwell@wt.net

Computer

Website: <http://chapters.computer.org/dallas/>

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Consultants Network (CN)

Website: <http://www.ieeedallascn.org/>

Chair: Neil Kaden
kaden@circleNK.com

Consumer Electronics Society (CES)

Website: <http://www.dallasces.org/>

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adolfo@ti.com

Computational Intelligence (CI)

Chair: Chair Robert J. Marks II (254) 710-7302

Education (E)

Past Chair William M. Riley (214) 478-4065
bill@billrileys.com

If you are interested in volunteering/becoming an officer for this society, please contact the past chair, William Riley.

Electromagnetic Compatibility (EMC)

Website: <http://www.dallasemc.org/>

Chair Carl Irby (817) 777-9161
carl.a.irby@lmco.com stanfield_joe@yahoo.com

Electron Devices (ED)

Chair Zeynep Celik-Butler (817) 272-1309
zbutler@uta.edu

Engineering in Medicine and Biology (EMBS)

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shekar@ti.com
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Secretary/Treasurer: Harry F Tibbals, UTSW
Program Chair: Roy Chaney, UTD

Laser & Electro-Optics (LEO)

Website: <http://engr.smu.edu/leos/>

Chair Martin Achtenhagen (972)235-7584 x2227
machtenhagen@photodigm.com

Microwave Theory and Techniques (MTT)

Website: <http://ewh.ieee.org/r5/dallas/mtt/>

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Signal Processing (SP)

Website: <http://www.utdallas.edu/~kehtar/ieee-sp>

Chair Nasser Kehtarnavaz (972) 883-6838
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Meeting Chair: Huawin Jin
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Secretary/Treasurer: Mr Mohit S. Malhan (214) 356-5714
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The **Director of Electrical Engineering** is responsible for effectively managing multi-project product development and implementation efforts of the organization, including management of the financial and technical resources required to accomplish specific Electrical Engineering assignments. This individual will provide technical leadership, detailed project planning, and overall organization of R & D group resources to facilitate the engineering of products and processes which meet corporate quality, cost, and scheduling objectives. Qualified candidates will have a Bachelor's degree in Electrical Engineering or equivalent experience. Ten plus years experience in a high technology manufacturing environment, medical device industry is preferred. A minimum of seven plus years experience at a supervisory/managerial level and strong experience in engineering and product development.

The **Senior Electrical Engineer** is responsible for the detailed electrical design and development of new external products, e.g. patient controllers and trial stimulators, using best engineering practices for low-power mixed-signal hardware and firmware development. This includes origination of concept, process/technology development, testing, equipment/tooling specification and procurement, the origination of detailed engineering drawings, and other applicable documentation. Interface with designers, manufacturing, quality, regulatory, and other engineering groups as necessary to accomplish project requirements within scheduled objectives. Interface with outside vendors to procure materials, equipment, etc. Qualified candidates will have a Bachelor's degree in Electrical Engineering or equivalent experience. Minimum five years experience in Engineering and portable/medical device product development is required. Formal training and demonstrated proficiency in the use of EDA tools for custom mixed-signal design and design controls. Experience with embedded tools and higher level programming language required.



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The Dallas Section of the Institute of Electrical and Electronic Engineers (IEEE) for the benefit of its members publishes *Direction* monthly from September through May. Articles, special announcements and information for publication should be submitted to Dinesh Rajan (rajand@enr.smu.edu) The deadline for submission of materials is no later than the 20th of the month prior to the month of publication.

Advertising: *Direction* is distributed to approximately 7,200 members in the Greater Dallas area.

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