ICOPS Minicourse: Plasma Medicine and Plasma Health Care

Introduction

Recent advances in the development of various nonthermal, atmospheric pressure plasma devices have opened the way to new methods and applications in a number of fields. Plasma medicine and plasma health care have emerged as very promising branches.

Novel applications in biomedical engineering, environmental engineering, biofouling, sterilization, biological and chemical warfare agents' mitigation, food preservation, biological cell manipulation, and medical diagnostics have emerged. With the IEEE International Conference on Plasma Science leading the way, many other international conferences have included their own sessions on plasma medicine. These conferences and symposia have brought together scientists from around the world working in fields related to physics, electrical engineering, biomedical engineering, medicine, cell and molecular biology, microbiology, marine biology, and environmental sciences. The dialogue among these groups has generated new interests and excitement, fostered cooperation and collaborations among disciplines, and provided the basis to establish new research programs in the United States and abroad. These programs provide new

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CONFERENCE MINICOURSE: Plasma Medicine and Plasma Health Care

NUCLEAR & PLASMA SCIENCES SOCIETY NEWS

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research and development initiatives for using nonthermal technologies in biology, medicine and environmental sciences.

PURPOSE OF THE MINICOURSE

The course opens with general concerns and challenges in medicine and health care. The requirements for cold atmospheric plasma devices to face all needs in this area of science will also be covered. After a short break, topics will target special fields of interest, such as plasma coagulation, surgery and dentistry.

The second day starts with basic knowledge in biology, wound healing and chemistry necessary for plasma researchers, but will also summarize recent research results. The next block of lectures focuses on plasma-cell and plasma-tissue interactions. After lunch, topics focus on special fields of interest, such as plasma sterilization and cancer treatments. The day will finish with a question and discussion forum, where attendees can share their concerns and ideas.

CONFERENCE MINICOURSE ORGANIZERS

Mounir Laroussi
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Old Dominion University, USA

George Isbary
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G. McCombs, Old Dominion University, United States

Introduction to Basic Cell Biology

G. Shaft, Loughborough University, United Kingdom

Plasma-based Wound Healing

G. Isbary, Munich Hospital, Munich, Germany

Plasma Chemistry for Medical Purposes

Y. Sakaiyama, U. C. Berkeley, United States

Modelling of Biomedical Plasmas

F. Iza, Loughborough University, United Kingdom

Plasma Sterilization of Medical Instruments

B. Baxter, Univ. Edinburgh, Scotland

Cancer Treatment Using Low-Temperature Plasmas

J. Schlegel, Munich, Germany

For further information about the minicourse, please visit http://acps2012.boro.ac.uk/minicourse

Minicourse Organizer

Mounir Laroussi
A Growing Understanding of NPSS in China

Zhen-An Liu

A “Topical Seminar on Particle Physics: Detectors and Electronics” was successfully held in Beijing China 18–22 August 2011 with more than 120 participants from Chinese universities and research institutes. Expert lecturers included Prof. Zhong He, University of Michigan (semiconductor); Prof. Sano Korpar, University of Maribor, Slovenia (photon detectors); Prof. Andreas Pierkle of University of Alabama (extremely low background detectors); Yingyang Xie, GUCAS (neutron detectors); Patrick Le Dû, Lyon (FEE and DAQ).

NPSS has established a good relationship with the Chinese scientific and technical community since the preparation for RT09 began in 2008. This seminar provided us yet another opportunity to enhance the collaboration between NPSS and the Chinese Nuclear Electronics and Detection Society (NEDS) and the Chinese Institute of Electronics (CIE). He is a chief member of International Exchange Group and standing committee member of the China Nuclear Electronics and Nuclear Detection Society (NEDS) under the Chinese Institute of Electronics (CIE). He is the Asian Contact and officer for the new standard-XTCA for Physics. He was the Local Organization Committee (LOC) Chair of Real Conference 2009 sponsored by IEEE/NPSS, the cochair of xTCA workshop held in 2009, and the Chair of “Topical Seminar on Frontier of Particle Physics 2011: Detector and Electronics” in China.

Zhen-An Liu can be reached at the Institute of High Energy Physics, Chinese Academy of Sciences, P.O. Box 918, 198 YuQuan Road, Shijingshan Distr. 100049 Beijing; Phone: +86-10-88236728; Fax: +86-10-88233083; Email: liuza@ihep.ac.cn.

JOIN the Nuclear & Plasma Sciences Society

People working together utilizing science, expanding the industry, furthering careers.
www.ieee-npss.org

Division Director’s Report

This title sounds very grand but a Division Director is just one of many members of the IEEE Board of Directors. Much of the work of the Board is routine but very much required. In addition, strategic issues are also worked to maintain the effectiveness of the IEEE as a trusted source of information in publications and at conferences. The Board is thus finally responsible for the smooth running and future directions of the IEEE.

The two arms of the IEEE are the staff and the volunteers. I have to say that I have been greatly impressed with the staff we have and their dedication to the Institute. I get emails sent well after working hours both on routine and other matters about which I contact them. We are in good, professional hands.

Apart from the responsibilities to the IEEE as a whole, I am, until the end of 2012, responsible in some way for our Division IV. One might well ask who or what is Division IV? Well, my view is that the constitution of the IEEE requires the societies to provide ten directors to the board, so they are divided up into ten divisions each with approximately the same number of members. Councils are also assigned to divisions, but as they have no individual members, they are assigned by criteria that escape me for the moment.

Division IV is made up of:

- IEEE Nuclear and Plasma Sciences Society
- IEEE Council on Superconductivity

It is the members of these societies that make up the electorate for the Division Director election. Because there is a tendency for people to vote for the candidate from their main society and because two societies, Antennas and Propagation Society and Microwave Theory and Techniques Society have over half of the total Division IV members, in alternate elections the candidates are from these two societies and in the other elections they are from the other five. This gives a chance for volunteers from the smaller societies to serve.

Four Division Directors are elected from single societies, two from the Computer Society and one each from the Communications and Power and Energy Societies.

While a Regional Director has a very significant job running his or her region, any Division Director would get into big trouble if he or she started to get involved in the detailed affairs of the societies in their division in the same way. However, to enable me to meet with the other societies, I have a small budget to travel to AdCom meetings so that hopefully I can attend one of each society and council during my 2-year term. For personal reasons, this has been difficult for me in the first half of this year but I hope to catch up a little before the unspent budget is claimed back at the end of the year. Already I have had the pleasure of presenting a Technical Field Award at the Antennas and Propagation Society meeting and attend the recent AdCom of the Council on Superconductivity. I am impressed by the energy and vitality of these two and...

(continued on page 6)

Mum’s the word
The more you are talked about the less powerful you are.

Benjamin Disraeli
Minorities, and the rich are always fewer in number than the poor. Perverted protectionism

We must protect the rights of minorities and the rich are always fewer in number than the poor.

Secretary’s Report

The next meeting of the NPSS AdCom will follow the NSS/MIC meeting that will be held in Berkeley, the last week of October. A report of that meeting will be included in the March 2012 Newsletter.

I am using this space to ask you to think about contributing technical articles to the Newsletter. These should be written for a technical but non-specialist audience and should include graphics and photos to describe your work. This is a great opportunity for grad students and postdocs to get some visibility in the community and to share what you are doing with others in our society. You never know what connections your work might bring and what might pique another’s curiosity. This is a chance to develop your communications network and society recognition.

Papers should be of order 500–1000 words. Photos should be high-resolution, a minimum of five per page, and should be submitted at 300 dpi. If you include graphs or tables, think of how they’ll look in a monochromatic format and provide us the raw data as well.

Your paper will be vetted by a couple of experts to make sure that we maintain high quality, but consider this an opportunity. In an ideal world I’d like to see two technical papers in each Newsletter issue, or eight per year—one from each of our diverse technical communities.

Allee Larsen
NPSS Secretary and Newsletter Editor

Nuclear Medical and Imaging Sciences

Greetings! As I write, the 2011 IEEE MIC meeting is fast approaching and will be by this time published in the 2012 Newsletter issue. I am sure this will be a great meeting and I would like to thank David Townsend (General Chair), Alberto Del Guerra (MIC Chair), Juan Vaquero (MIC Deputy Chair) and all the other NSS/MIC committee members for their dedication and hard work in establishing an outstanding scientific program; offering an excellent array of short courses and educational workshops; bringing in plenary speakers to speak about topics that expand our horizons; providing an excellent industrial program; and creating an environment that promotes scientific exchange and discussion. In addition, I would like to thank the organizers of the conference.

In summary, 764 abstracts were submitted for this year’s MIC meeting and 683 were accepted for presentation. There were 126 MIC talks presented during 16 MIC oral sessions and two joint NSS-MIC and MIC-RTSD sessions. Once again the MIC ran two parallel oral sessions. In addition to the oral sessions, there were 554 MIC posters presented during five sessions at the conference. Two plenary sessions were held with three invited speakers. In the first plenary session, Prof. Willi Kalender (Erlangen University, Switzerland) discussed the status of medical imaging today and the challenges facing the field.

Stefan Ritt, chair of the Computer Applications in Nuclear and Plasma Science Technical Committee, can be reached at the Paul Scherrer Institute, CH-5232 Villigen, Switzerland. Phone +41 56 310 3728; E-mail: stefan.ritt@psi.ch

Robert Miyawaki
NPSS Technical Committee Chair

Technical Committees

Computer Applications in Nuclear and Plasma Sciences

Preparations are accelerating for the next Real Time Conference, RT12. It will take place from June 9th-15th, 2012 at the Shattuck Hotel in downtown Berkeley, California. A small committee and the local organizers visited the site in August to optimize the usage of the local facilities. We plan again for short courses to cover some hot topics such as graphics card programming and fast waveform digitizing. Excursions to San Francisco and probably to Napa Valley will be offered. The downtown location was chosen because of the close proximity to public transportation, and because there are many different hotels of all categories nearby.

The CANPS committee meets regularly via teleconference to work out details of the program, finalize the short courses and find nominees for our CANPS award, which will be given during the conference. The conference will have a vendor exhibit, and our traditional 2-minute “mini-oral” session, giving poster presenters the opportunity to highlight some aspects of their posters.

In 2014, the Real Time conference will go to Japan, probably to the Kyoto region. RT14 will give visitors the opportunity to visit a very nice region of Japan and give support to our Japanese colleagues.

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Robert Miyawaki
NPSS Technical Committee Chair

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TECHNICAL COMMITTEES
(continued from page 7)
Germany) spoke on “Is there still room for research in CT?” and Dr. Christoph Berens (GSI, Germany) spoke on “New frontiers in radiobiology for particle therapy.” In the second plenary session, Prof. Andreas Brabham (Karolinska University, Sweden) spoke on “Optimal use of imaging in radiation therapy.” During the second plenary session we also honored this year’s Edward J. Hoffman Medical Imaging Scientist and Bruce Haugwayer Young Investigator Medical Imaging Science award winners. Congratulations to Dr. Michel Defrise (Vrije Universiteit Brussels), the Medical Imaging Scientist award winner, “for pivotal contributions to the science of tomographic reconstruction” and to Dr. Abhijit J. Chaudhari (University of California Davis), the Young Investigator Medical Imaging Science award winner, “for contributions to the fields of multispectral optical tomography, PET instrumentation, and translational molecular imaging.” During our awards session we also recognized Dr. Harrison Barrett (University of Arizona) as the recipient of the 2011 IEEE Medal of Innovation.

With the 2011 meeting complete we now look forward to the 2012 IEEE NSS/MIC meeting that will be held in Anaheim, California. Tom Lewellen is the General Chair. Vesna Sosin will serve as MIC Chair and Alex Comerre will serve as MIC Deputy Chair. The meeting will be held at the Disneyland Hotel. Along with having excellent facilities, the Disneyland Hotel is undergoing a major renovation that will be complete for the 2012 meeting.

In 2013, the IEEE NSS/MIC meeting will be held in Asia for the first time. Host city for the meeting will be Seoul, Korea. Hee-Joung Kim is the General Chair, Jae Sung Lee is the MIC Chair and Craig Levin is the MIC Deputy Chair. The meeting will be held at the Coex Convention Center within the Coex Mall. This site will provide us with plenty of space as well as offering many tourism opportunities. The 2013 organizing committee is working hard and plans are progressing well.

In 2014 the IEEE NPSS NSS/MIC meeting will be held in Seattle, Washington at the Washington State Convention Center in downtown Seattle. Tony Lavietes will be General Chair. There will be a nice price range of hotels (e.g., 492 to 1855 per night) within walking distance of the convention center for attendees to select from.

Plans are underway for site selection for 2015. Proposals have been submitted for Strasbourg, France and Liverpool, England. In addition, Knoxville, Tennessee and Orlando, Florida are being considered as backup cities in the US.

Finally, I would like to thank all the individuals that ran for NMISC Committee positions. The success of our community is dependent upon volunteers and their dedication to make sure that the MIC is an outstanding meeting each year and that our interests are represented within NPSS and IEEE. This year’s candidates for five NMISC Committee positions were: James Hugg, Hee-Joung Kim, Michael King, Paul Marode, Osama Mawlawi, Uwe Pietrzyk, Douglas Wagenaa, Glen Wells, and Larry Zeng. If you are interested in becoming more involved in the oversight of the MIC meeting please consider running for an NMISC council position. Five individuals are elected each year for a 3-year term. For more information please go to the NMISC webpage (http://ewh.ieee.org/ics/npss/nmisc/).

Robert Miyawka can be reached at University of Washington, Department of Radiology, Box 357987, Seattle, WA, 98195-7987 USA; phone: +1 206-543-2084; Fax: +1 206-543-8356; E-mail: rmiyawka@uwashington.edu

Pulsed Power Science and Technology

I would first like to thank everyone who participated in the PPST survey, with special kudos to Dr. Susan Heidger for organizing it and analyzing the data. I know we get bombarded with requests to complete surveys for many different types of products and organizations. We took special efforts to keep the survey short as well as provide opportunities for respondents to comment on any aspect of the conferences. The survey provides the PPST with critical information on how to proceed with organizing future conferences.

Speaking of planning… In 2013, the International Pulsed Power Conference will be combined with the International Conference on Plasma Science (ICOPS) and designated PPPS2013. The conference will be held June 15th–22nd in the heart of downtown San Francisco, California with Dr. Bryan Oliver acting as General Chair. In 2015, the Pulsed Power conference will be held May 31st–June 4th in Austin, Texas. Dr. Mark Crawford will be the General Chair. Furthermore, at the last Pulsed Power Science and Technology Committee meeting, we voted to explore holding the Pulsed Power Conference outside the United States. My previous statement may appear to sound overly cautious but truly, is only a reflection that the process may appear to sound overly cautious but truly, is only a reflection that the process may appear to sound overly cautious but truly, is only a reflection that the process has only been newly initiated. In fact, the first Pulsed Power Conference to be held outside the continental United States may occur as soon as 2017.

The Megagauss 14 Conference will be held 14th–20th October 2012 in Maui, Hawaii, at the Wailea Beach Marriott Resort. The Conference topics include ultra-high magnetic field generation, nondestructive production of pulsed high magnetic fields, explosively driven magnetic flux compression generators, high-current and power switching and power conditioning, high-energy liners, science in ultrahigh magnetic fields, mathematical modeling, diagnostic and experimental techniques, experiments for high energy density in physics, and related topics. The Megagauss Conference is sponsored jointly by the NPSS’s Pulsed Power Science and Technology Committee and the Megagauss Institute.

Abstracts for the IEEE International Power Modulator and High Voltage Conference (IPMHVC) are due January 15th and can be submitted at the website www.neseng.com/ipmhvc2012/. The conference will be held in San Diego, California from June 3rd–7th. The IPMHVC is technically cosponsored by the Nuclear and Plasma Sciences Society’s Pulsed Power Science and Technology Committee and fully sponsored by the Dielectrics and Electrical Insulation Society.

Last September 20th, prominent members of the Pulsed Power community—Professors Ivor Smith and Bucur Novac of Loughborough University organized the UK Pulsed Power Symposium with great success. The keynote speaker for this Symposium was Dr. Nigel Seddon, MBE from MBIA UK Ltd., Bristol, United Kingdom who presentation was entitled, “Pulsed Power Generation using Nonlinear, Dispersive Circuits.” The keynote speaker was followed by 10 oral and 20 poster presentations. There were 70 registered attendees from the UK, France, the Netherlands, Germany, Switzerland, Belarus, USA and China as well as 13 Industrial Exhibitors.

Listen to me! There are some that only employ words for the purpose of disguising their thoughts. Voltaire
**Radiation Effects News**

**Annual Report From the Radiation Effects Committee—July 2011**

Dan Fleetwood serves as Chairman of the Radiation Effects Steering Group, which oversees the NSREC Conference.

The IEEE Radiation Effects Committee (RECOM) held its annual Open Meeting on July 28th, 2011, at the JW Marriott, Las Vegas, Nevada, during the 2011 Nuclear and Space Radiation Effects Conference (NSREC). The meeting included reports from the chairmen of the 2010 through 2012 NSRECs. In addition, reports were made on the upcoming RADECS 2011 and 2012 conferences (for information on RADECS, please see www.radecs.net).

An election was held during the Open Meeting for Junior Member-at-Large to the Radiation Effects Steering Group (RESG). The RESG welcomes Nick van Vonno, Intersil, as its newly elected Junior Member-at-Large. Nick joins Pascale Gouker, MIT Lincoln Lab, and Vincent Pouget of IMS-CMRS who are serving as Senior-Member-at-Large and Member-at-Large, respectively.

During the Open Meeting, Dan presented an award to outgoing Radiation Effects Steering Group member Mike Xapos, NASA GSFC, and announced the General Chairs of the upcoming NSRECs. Ken LaBel, NASA GSFC, Jeff Black, Sandia National Laboratories, Robert Eoff, Cenes, and Mike Xapos, NASA GSFC, are the General Chairs of the 2012-2015 NSRECs, respectively.

Joe Benedetto, Aeroflex RAD, 2010 Conference General Chairman, recognized each member of his conference committee with an award plaque. Joe and his team organized an outstanding NSREC conference in Denver, Colorado.

Kay Chesnut, Conference General Chair, summarized some statistics from the 2011 conference. A total of 671 people attended the technical sessions, the short course, or both. In addition, we registered 88 attendees for the industrial exhibit session only, with a grand total of 904 attendees and companions. The technical sessions were very strong, with 131 papers presented during the four-day conference (48 oral presentations, 55 posters, 35 data workshops). There were four outstanding presentations during the short course on July 25th. A record 55 booths were sold to 52 exhibitors at the 2011 NSREC.

Ken LaBel, 2012 Conference General Chairman, announced that NSREC will be held July 16th-20th, 2012, in Miami, Florida, at the InterContinental Miami Hotel. The conference will feature a record 52 exhibitors at the 2011 NSREC. The papers will be 10 to 25 pages in length, depending on the topic. The first review due date is March 15th, 2012. Please contact any of the three editorial team members with your inputs and/or questions.

Sincerely,

Dan Fleetwood, Chair of the Radiation Effects Technical Committee, can be reached at Dan.Fleetwood@Vanderbilt.edu.

Teresa Farris, Radiation Effects Vice Chair, Publicity, can be reached at teresa.farris@aeroflex.com.

**TECHNICAL COMMITTEES**

**ANNOUNCING A SPECIAL ISSUE OF IEEE TNS**

A special issue of IEEE Transactions on Nuclear Science (TNS) is planned to commemorate the 50th annual Nuclear and Space Radiation Effects Conference (NSREC) in 2013. This issue will consist of papers that will provide historical reviews as well as summarize current issues of interest to our colleagues in the radiation effects community. It will be published in June 2013, and will be available for handout to all attendees at the 2013 NSREC.

We are soliciting input from the radiation effects community on topics of interest, interested authors, and/or authors you would recommend. Below is a list of the topics based on preliminary inputs we received at the last NSREC in Las Vegas.

The papers will be 10 to 25 pages in length, depending on the topic. The first review due date is March 15th, 2012. Please contact any of the three editorial team members with your inputs and/or questions.

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Veronique Ferlet-Cavrois, ESA/ESTEC, Ferlet-Cavrois@esa.int
Jonathan Pellish, NASA Goddard Space Flight Center, jonathan.a.pellish@nasa.gov

**POtENTIAL TOPICS FOR THE IEEE TNS SPECIAL ISSUE**

Space radiation: what was learned in the last 10 years from space missions and on-orbit dosimetry

- SEE, TID, and DD
- Technology effects: bulk Si, SiGe, SOI, FinFET, memories
- Modeling and simulation tools
- New single-event effects in digital and linear ICs
- Single-event transients
- Geometry effects, charge sharing, MBU
- Radiation assessment and hardness assurance
- Current and new generation ICs
- Space, avionics, and terrestrial radiation environments
- Power devices, ICs and systems
- Photonic devices, ICs and systems
- Detectors, optocouplers, optical fibers, and high-speed data links

What historical reviews or other issues of interest should we include in this special issue?

Dan Fleetwood, Chair of the Radiation Effects Technical Committee, can be reached at Vanderbilt University, Department of Electrical Engineering and Computer Sciences, P.O. Box 92, Station B, Nashville, TN 37235 USA; Tel: +1 615-322-2771; Fax: +1 615-343-6702; Dan.Fleetwood@vanderbilt.edu.

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**Web Site**

www.ieee-npss.org

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**Where ignorance is bliss...**

Doctors are men who prescribe medicines of which they know little, to cure diseases of which they know less, in human beings of whom they know nothing.

Voltaire
In the evaluation process, the following criteria are considered: importance of individual scientific contribution, importance of scientific contributions made by teams led by the candidate, seminal nature of the contribution, innovation/originality, societal benefit, impact on the profession, and the quality of the nomination.

The “Curie Award” is an IEEE award, i.e., an Institute-level award, and is not restricted to NPSS members. Nominations for all of these are due on or before January 31, 2012. We will present the awards during the appropriate conference following the announcement of the award.

For more information and the nomination forms, please go to www.ieee.org and search on “Curie Award”—much easier than typing the full URL!

Peter Clout, chair of the Curie Award Committee, can be reached at Vista Control Systems, Inc., 2101 Trinity Sq., Suite Q, Los Alamos, NM 87544-4103; Phone: +1 505-662-2484; Fax: +1 505-662-3956; E-mail: clout@vista-control.com.

2011 Radiation Effects Awards

LEW COHN RECEIVES THE 2011 NSREC RADIATION EFFECTS AWARD

Lew Cohn received his B.S. in EE from the Milwaukee School of Engineering in 1967 and his M.S. in EE from Syracuse University in 1970. His professional history includes working as an electronic design engineer at GE and Rockwell, serving as a nuclear engineer in the US Navy, and as Defense Threat Reduction Agency (DTRA) Project Officer for more than 20 years. He now works with the National Reconnaissance Office. Especially in his capacity at DTRA, Mr. Cohn was a relentless champion for radiation effects research and development activities, and was instrumental in the development of multiple generations of microelectronics and other resilient design capabilities and other resilient design test methods, and helped the community to develop and sustain an expansive knowledge base on radiation effects research and development. He now works with the National Reconnaissance Office. Especially in his capacity at DTRA, Mr. Cohn was a relentless champion for radiation effects research and development activities, and was instrumental in creating and sustaining programs that have led to the development of multiple generations of microelectronics and other resilient design capabilities and other resilient design test methods, and helped the community to develop and sustain an expansive knowledge base on radiation effects research and development.

Lew Cohn

2011 NSREC Radiation Effects Award Recipient

Citation: For sustained and enabling contributions to the development of radiation hardened technology, research on radiation effects in microelectronics, and the IEEE NSREC.

(continued on page 14)
The two recipients for the 2011 Paul Phelps Continuing Education Grant were Mélanie Raine of the Université de Paris Sud in France, and Stanley Phillips of the Georgia Institute of Technology.

Mélanie Raine received the Engineering Education Grant in 2010 and the M.S. degree in Electrical and Computer Engineering from the Georgia Institute of Technology, in 2006, and the M.S. degree in Electrical and Computer Engineering from the Georgia Institute of Technology in 2009. He is currently working towards a doctoral degree at the same university in electrical and computer engineering with a prospective completion date of May 2012.

Stan’s research has focused on heavy-ion-induced, single-event effects in silicon-germanium BiCMOS technologies. His M.S. thesis probed the effects of trench isolation on the susceptibility of the silicon germanium heterojunction bipolar transistor to single-event effects in radiation environments, in addition to the investigation of a new device topology aimed at improving single-event susceptibility. His current research is focused on the characterization of transient signals induced on devices from radioactive sources and the means and with which to improve the single-event-tolerance of circuits from these device models. He is focusing on full-system single-event characterization using frequency synthesis phase-locked loops. He works actively with multiple cyclotron facilities to prepare and execute radiation experiments using heavy-ion broadbeam, microbeam, and photonics sources. Working closely with Computational Fluid Dynamics Corporation’s TCAD team, Stan has generated ion strike simulations which both complement and offer deeper understanding of the experimental data that have been obtained.

Fellows Evaluation Committee

IEEE Fellow Nominations for the Class of 2013 are Due by March 1, 2012

Encourage you to nominate a colleague, co-worker or friend whose career and body of work you consider eligible for elevation to the IEEE Fellow Grade. Nominations for the IEEE Fellows Class of 2013 are now being accepted until the deadline of March 1, 2012. Apply online at http://www.ieee.org/membership-services/membership/fellowship/DP_IEEE_MIG_MCT_7466. To be considered, the nominee must meet the following three basic qualifications: have accomplishments that have contributed importantly to the advancement or application of engineering, science and technology, bringing the realization of significant value to society; hold IEEE Senior Member or Life Senior Member grade at the time the nomination is submitted; have been a member in good standing in any grade for a period of five years or more preceding 1 January of the year of elevation. Note that IEEE affiliate membership within an IEEE society does not apply.

The conditions for eligibility are:

- The nominee cannot be a member of the IEEE Fellow Committee, an IEEE Society/Technical Council Fellow Evaluating Committee Chair, a member of IEEE Society/Technical Council Fellow Evaluating Committees reviewing the nomination, members of the IEEE Board of Directors, or members who are prohibited from publishing in IEEE publications.

The application process is initiated by the nominator. Self-nomination by a candidate is not permitted. However, any person, including non-IEEE members, is eligible to serve as nominator. The nominator is responsible for:

- Preparing the IEEE Fellow Grade Nomination Form, making sure all information is current and the form filled out correctly.
- Soliciting at least five, but no more than eight, references capable of assessing the nominee’s contributions.

A reference must be an IEEE Fellow in good standing but a nominator who is an IEEE Fellow may not serve as a reference for a nomination he/she is submitting. There is an exception for candidates and
nominators from Region 9. Please see the Fellows page on the IEEE website for the details of the exception.

There is the option of soliciting no more than three endorsements capable of supporting the nomination. Any person, including non-IEEE members, may submit an endorsement. Individuals involved in the Fellow selection process are generally ineligible to serve as endorsers. Any person, including non-IEEE members, may submit an endorsement. Individuals involved in the Fellow selection process are generally ineligible to serve as endorsers. Individuals involved in the Fellow selection process are generally ineligible to serve as endorsers. In addition, a nominator may not serve as an endorser for a nomination he/she is submitting.

The Fellow evaluation process consists of two evaluations. The first evaluation is completed by the IEEE Society/Technical Council that the nominator identified on the nomination form. We expect to receive the nominations about April 15th. This is an extremely important evaluation by persons who are familiar with his or her work. The NPSS Fellow Evaluation Committee is comprised of IEEE Fellows from across the globe as well as from the technical disciplines within NPSS. Once the IEEE Society/Technical Council review is completed, their comments are given to the IEEE Fellow Committee around June 15th.

All nomination materials are forwarded in confidence to the IEEE Fellow Committee. The Committee consists of 52 members, all of whom are IEEE Fellows with expertise in the technical areas represented by IEEE societies/technical councils and selected to represent the ten IEEE Regions. The IEEE Fellow Committee recommends nominees to the IEEE Board of Directors, according to the following criteria.

- Significant contributions as Application Engineer/Practitioner, Educator, Research Engineer/Scientist, or Technical Leader;
- Evidence of technical accomplishments;
- Evaluation by the IEEE Society/Technical Council selected by the nominator;
- Confidential opinions of references and endorsers;
- Service to other professional engineering societies;
- Total years in the profession.

Each nominee is rated numerically on the basis of this information. The slate of nominees is submitted by the IEEE Fellow Committee to the IEEE Board of Directors during the third quarter of the year, and the Board acts upon those recommendations at its year-end meeting. According to IEEE Bylaw E-305.5, the total number of Senior Members recommended for elevation to Fellow in any one year must not exceed one-tenth of one percent of the voting membership on record as of 31 December of the year preceding.

On behalf of the NPSS Fellow Evaluation Committee, I urge you to consider making an IEEE Fellow nomination. Being elevated to an IEEE Fellow is a very special and noteworthy milestone in anyone’s career. It is an extremely competitive process—only 0.1% of the total voting membership can be elevated to the grade of Fellow each year. Last year 8 members of NPSS were elevated to Fellow. It is always challenging to review these nominations. I hope you can make our job even more difficult by increasing the number of nominations in 2012.

Jane Lehr, IEEE NPSS Fellow Evaluation Committee Chair, can be reached at Sandia National Laboratories, P.O. Box 5800, MS1193, Albuquerque, NM 87185-1152; Phone: +1 505-844-8534; E-mail: jmlehr@sandia.gov.

Who’s knocking on my door?
We are all faced with a series of great opportunities brilliantly disguised as impossible situations.

Anonymous

The bottom line
Conscience gets a lot of the credit that belongs to cold feet.

Charles R. Swindoll

SUBJECTS NEEDED:
- Experiments, applications equipment, people
- People interacting with each other
- Presentations at meetings, both papers and awards
- Conversations at meetings, people interacting with each other
- Poster sessions, people reading posters, talking to authors
- Exhibit halls—booths, people examining equipment, talking to the vendor representatives
- Any subject that says who NPSS is or what NPSS does

PHOTO SPECIFICATIONS:
- IEEE/NPSS must have copyright or permission to use all photos submitted
- High-resolution files (10Mb minimum)
- Acceptable formats, RAW, TIFF or high-quality JPEG

To submit photos:
Via FTP
ftp.visita-control.com
Username: ieee-npss
Password: npss-photos
Email to p.clout@ieee.org
Mail CD to:
Peter Clout
Vista Control Systems
2101 Trinity Drive, Ste Q
Los Alamos, NM 87544-4103 USA
Contact Peter Clout, at p.clout@ieee.org with questions.
IEEE Humanitarian Outreach

Haiti Electricity Project News

October 25, 2011

IEEE is a major sponsor of new outreach initiatives through the IEEE Foundation and various Societies. One such program is the Community Solutions Initiative that has developed a technical model to bring home lighting to very poor rural areas. However this is not a charity; the business plan developed with the partner NGO Sirona Cares calls for local entrepreneurs to own and operate independent leases and return a profit to themselves and to the leasing company, Sirona Haiti. IEEE has heavily invested in the project with seed funding for building pilot units and providing a host of volunteers to devote time and talent pro-bono. After the pilot phase Sirona is responsible to acquire venture capital to build up manufacturing, operations and support in-country. IEEE volunteers will continue to help as needed. The plan is that when the model works well in Haiti, the technical and business templates will be exported to other developing countries that lack basic electrical infrastructure.

The impact of what seems like an insignificantly small amount of electricity to the 80% or more Haitians who have zero electricity is impossible for a western developed country to imagine. The princely amount of 8W of LED lighting, packaged as two ceiling or wall mounted bulbs, along with a hand-carried battery pack that also can charge lighting, packaged as two ceiling or wall mounted bulbs, along with a hand-carried battery pack that also can charge other electronics, is revolutionary. Real-life stories and examples are captured in the eloquent stories and you’ll start to appreciate the perspective from the standpoint of a child and a 100-year-old woman seeing a light bulb in their home for the first time.

3-MONTH FIELD REPORT

Michelle Lacourciere made a recent field trip to carry out unannounced visits to all six operating sites. Before the team went to Haiti many informed and uninformed people made dire predictions that the equipment would all be stolen in a week. What this did not take into account is that when the equipment is a valuable community resource, and people with home lighting kits are liable for its safety, the equation is entirely different from government or NGO provided handouts. The owners all immediately took security measures to protect the central generating equipment, including one concrete block fortress, and all located within the back or front yards of the owners, while each homeowner took great pride in their new leased home lighting system and clearly protected it well. Michelle found the following results after 3 months of operation:

- Every single system was booked to capacity with all 40 of its home kits leased to paying customers.
- Every last home pack was leased to a paying customer (240 total home kits which did not hold charge and have been replaced, the equipment is revolutionary.
- Every owner paid their monthly bills on time.
- No equipment has been damaged or lost.
- After initial discovery of six battery kits which did not hold charge and have been replaced, the equipment has functioned perfectly.
- The two trained maintenance technicians who visit every site once a month have done a diligent job.
- Both owners and customers are very satisfied.

The single common complaint of the owners is that the generators are being significantly underutilized and they are eager to get another converter to tap the extra power and sell it to a base load customer.

This is a resounding endorsement of the technical and business model so far. Winter is coming and production will be lowered by ~30% so the next 3–4 months will provide very useful data.

HIGH-LEVEL MEETING AND FUNDING OPPORTUNITIES

Michelle was also invited to a high-level government-organized meeting that included all the strategists and potential funders of electricity initiatives for all of Haiti. The organizer of the meeting was the Coordinator for Electricity to whom CSI made a two-hour web presentation in August 2010 and subsequently received a letter of support from the Minister of Public Works, Transportation and Communications. At this meeting she was allowed a 20-minute presentation and had with her a demonstrator unit of the battery and home lighting kit. Sirona was the only member present who had a practical on-the-ground solution already in operation. All others discussed general solutions with no real action plans. Michelle got great encouragement as well as direct contacts from this meeting. Two representatives of the new President of Haiti took special note as did the representative of the World Bank and others. Sirona is very encouraged that this will lead to a breakthrough on the road to $35M in funding needed in 2–3 years to make the production target of 4500 units to bring light to at least 1 million people in the first 5 years.

MANUFACTURING IN HAITI

Plans are moving ahead to prepare to partially manufacture the last 9 units in Haiti to accelerate the original schedule and further the main goal of in-country manufacture. At the same time we recognize that many parts cannot be manufactured there but the main assembly can be done relatively easily. Engineering documentation is in preparation to accelerate this plan, while the main outfitting of the last 9 trailers will be done in Long Island as before. Solar panels will be shipped separately from the trailers and batteries also.

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NEW IEEE FOUNDATION FUND FOR CSI

Plans are in place seeking approval for a new fund to solicit earmarked funds for CSI projects both to complete the Haiti Pilot II program of nine more Sunblazers and to reach beyond with a range of lighting solutions to poor areas of other parts of the world. The concept is to start new initiatives through IEEE members working with other NGO partners following the Haiti model and motto of “Jobs, not Charity.” A large number of people agree in principle with the model but we are unable to find anyone that has made it work on the ground and proven sustainability and self-growth after the initial investment. This is clearly groundbreaking work that assumes a very large importance because it is affordable to very poor people and entire communities will directly benefit as all profits in one way or another are reinvested in the communities. Approval is expected at the Foundation Board Meeting in November.

Ray Larsen, NPSS and codirector of Community Solutions Initiative, can be reached at the SLAC National Accelerator Laboratory, MS64, 2575 Sand Hill Road, Menlo Park, CA; Phone +1 650 926-4907; E-mail: larsen@slac.stanford.edu.

From upper left: Children delight in light at the Jeremie orphanage; Girls in pretty dresses from Episcopal Diocese of California next to well-protected SunBlazer in Jeremie; Proud Anse-a-Veau entrepreneur Dieuçois Micherat showing off battery pack.