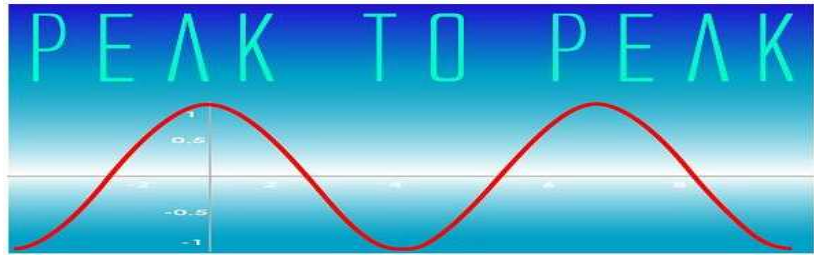




AUGUST 2006

Inside this Issue

- 1 Chairman's Thoughts
- 1 From the Editor
- 2 Chapter News
- 4 Upcoming Events
- 4 Merrimack Valley High School Design Project
- 5 Certified Software Development Professional Credential
- 5 International Microwave Symposium
- 5 How I Became an Engineer
- 6 In Memory
- 7 WANTED
- 8 Questions and Answers



THE IEEE NEW HAMPSHIRE SECTION NEWSLETTER

Chairman's Thoughts

By Tom Perkins

On July 22 we held a second summer outing on the MV Mount Washington on Lake Winnepesaukee. Approximately 110 people (43 members and their families) attended. Although the weather was not ideal, most folks seemed to enjoy the good food and fellowship. I would particularly like to thank Donna Davis, Chuck Furciniti, and Dean Bacon for helping to make this outing successful. We will have a detailed report in the September newsletter.

August brings an important three-day Region 1 Board of Governors (BoG) meeting to be held in Syracuse, NY. Jim Anderson, Chuck Button and I will represent our New Hampshire Section. Incidentally, the Region 1 Director, Army Colonel Barry Shoop finds himself very busy as he has been temporarily assigned to oversee efforts to defeat Improvised Explosive Devices (IEDs). This takes him away from his family and normal duties at West Point. He is, however, expected to lead the BoG as normal. I hope to have a brief report for all of you in the September newsletter.

Keep looking at our website for upcoming notices of technical meetings in the fall.

Please feel free to contact me, Tom Perkins, at tomperkins@ieee.org or NHIEEE@aol.com. I would enjoy hearing from you.

From the Editor

By Jim Anderson
james-w-anderson@ieee.org

Volunteers Needed

The Section is always looking for volunteers. New people bring new viewpoints to the ExCom. Fresh ideas are always a good thing. The ExCom has a few Chapter and Committee positions open.

A position on the ExCom is a rewarding experience. The average ExCom Member only spends a few hours a month on IEEE activities.

We are also looking for people to volunteer as committee members. Committees, such as the Engineer's Week Committee, depend on numerous volunteers

Please do not assume everything is done and your help is not needed. Volunteer today!

Chapter News

NH Chapter Meeting Computer Society and
Microwave Theory and Techniques Society
Presents

Ad Hoc Wireless Networking:
Where is the Beef?
Speaker: Dr. Anthony Ephremides
Communications Society Distinguished Lecturer
University of Maryland
Date: Wednesday, September 20, 2006
Time: 6:00 PM

Abstract: Dr. Ephremides will be reviewing new problems and trends in wireless adhoc networks with emphasis on sensor networks. Topics will include energy efficiency, cooperation, and network coding. All these have in common the coupling between the layers that reaches from application layer down to the hardware level.

Tony Ephremides - Anthony Ephremides holds the Cynthia Kim Professorship of Information Technology at the Electrical and Computer Engineering Department of the University of Maryland in College Park where he holds a joint appointment at the Institute for Systems Research, of which he was among the founding members in 1986. He obtained his PhD in Electrical Engineering from Princeton University in 1971 and has been with the University of Maryland ever since.

He has held various visiting positions at other Institutions (including MIT, UC Berkeley, ETH Zurich, INRIA, etc) and co-founded and co-directed a NASA-funded

Center on Satellite and Hybrid Communication Networks in 1991. He has been the President of Pontos, Inc, since 1980 and has served as President of the IEEE Information Theory Society in 1987 and as a member of the IEEE Board of Directors in 1989 and 1990. He has been the General Chair and/or the Technical Program Chair of several technical conferences (including the IEEE Information Theory Symposium in 1991 and 2000, the IEEE Conference on Decision and Control in 1986, the ACM Mobihoc in 2003, and the IEEE Infocom in 1999). He has served on the Editorial Board of numerous journals and was the Founding Director of the Fairchild Scholars and Doctoral Fellows Program, a University-Industry Partnership from 1981 to 1985.

He has received the IEEE Donald E. Fink Prize Paper Award in 1991 and the first ACM Achievement Award for Contributions to Wireless Networking in 1996, as well as the 2000 Fred W. Ellersick MILCOM Best Paper Award, the IEEE Third Millennium Medal, the 2000 Outstanding Systems Engineering Faculty Award from the Institute for Systems Research, and the Kirwan Faculty Research and Scholarship Prize from the University of Maryland in 2001, and a few other official recognitions of his work.

He is the author of several hundred papers, conference presentations, and patents, and his research interests lie in the areas of Communication Systems and Networks and all related disciplines, such as Information Theory, Control and Optimization, Satellite Systems, Queueing Models, Signal Processing, etc. He is especially interested in Wireless Networks and Energy Efficient Systems.

Location: BAE Systems Headquarters Building - Main Lobby Auditorium, 65 Spit Brook Road, Nashua, NH 1/2 mile east of Everett Turnpike, Exit 1

For more information call Tom Perkins @ (603) 885-5040, or e-mail thomas.perkins@baesystems.com

NH IEEE Microwave Theory and
Techniques Society
Presents

Liquid Crystal Polymer for RF and
Millimeter Wave Multi-layer Packages
and Modules

Speaker: Dr. Anh-Vu Pham

Microwave Microsystems Laboratory Department
of Electrical and Computer Engineering

University of California, Davis

Date: Monday, October 02, 2006

Time: 6:00 PM

Abstract: We present the design and development of multi-layer organic modules and packages using liquid crystal polymer (LCP). An overview and unique properties of liquid crystal polymer will be first discussed. We will present the development of liquid crystal polymer caps for RF MEMS. A cavity formed in a liquid crystal polymer film has been laminated, at low temperature, onto silicon MEMS switches to create a hermetically sealed package. Multiple organic dielectric films can be integrated on top of the LCP cap to form a multi-layer module. We will also present compact surface mount packages using multi-layer liquid crystal polymer films. The feedthroughs of these packages including bond wires and transitions to a printed circuit board achieve less than 1 dB insertion loss at Ka-band.

Biography: Anh-Vu H. Pham received the B.E.E. (with highest honors) and Ph.D. degrees from the Georgia Institute of Technology, Atlanta, in 1995 and 1999, respectively. From 1997 to 1999, he was a technical staff member and a co-founder of RF Solutions, LLC, an RFIC company that was acquired by Anadigics in 2003. He was on the faculty at Clemson University

from 1999 to 2002. He joined the University of California at Davis in 2002 and is currently an Associate Professor. He has authored or co-authored ~ 60 technical journal and conference papers. He is conducting research in RF and high-speed packaging and signal integrity, RFIC design, and wireless sensors.

Anh-Vu serves as a member of the IEEE Microwave Theory and Techniques Society (IEEE MTT-S) International Microwave Symposium (IMS) Technical Program Committee (TPC) on Power Amplifiers and Integrated Circuits. He was the chair of the IEEE MTT-12 Microwave and Millimeter Wave Packaging and Manufacturing Technical Coordinating Committee (2003-2006). He was the recipient of the 2001 National Science Foundation CAREER Award on millimeter-wave organic packaging. He is also active as a consultant to the industry.

Location: BAE Systems Headquarters Building - Main Lobby Auditorium, 65 Spit Brook Road, Nashua, NH ½ mile east of Everett Turnpike, Exit 1

For more information call Tom Perkins @ (603) 885-5040, or e-mail thomas.perkins@baesystems.com

CNEC Product Safety Engineering Society

By Steve Brody

On behalf of the CNEC PSSES we hope all are having an enjoyable and safe summer. We do not have meetings in July and August so there is not much to report at this time. However, at our June meeting we had a presentation from Ken Stanvick of Design Chain Associates who provided an update on the what is generally known as China RoHS. This is China's legislation for the Restriction of Hazardous Substances (RoHS) and it is officially known as China's Administrative Measures on the Control of Pollution Caused by Electronic Information Products.

China will implement the law in phases and although most of the legislation defining its implementation has not been finalized, the first phase begins on March 1, 2007, and will require labels on Electronic Information

Products as defined by the not yet available regulations. A copy of the presentation is available at our web site www.nepss.org.

Our September meeting will be a joint session with the EMC Society. The speakers and location have not been finalized as of this writing but it will be in the September newsletter or check our web site.

If you would like additional information on the European Directives for Waste Electrical and Electronic Equipment (WEEE) or the Restriction of Hazardous Substances (RoHS), or China RoHS, or Korea RoHS please feel free to contact Steve Brody at steve.brody@thermo.com or compliance.engineering@thermo.com.

If you have any suggestions for meeting topics or speakers please contact Paul Smith, our meeting scheduler, at paulsmith1@cs.com.

Thanks and on behalf of the CNEC PSES best wishes for a happy, healthy and safe summer!

Computer Society

By Jim Isaak

For the 2006 - 2007 academic year, the chapter is scheduling its IT Seminar Series on Thursdays from 7:00 to 9:00 PM in the Walker Auditorium of Robert Frost Hall at SNHU. Save the following dates: Sept. 21, Oct. 19, Nov. 9, Dec. 14, Jan. 25, Feb. 22, Mar. 15, Apr. 12, and May 3. Stay tuned for more details.

If you have particular topics you would like to see covered, or speakers to suggest, please send a note to: nhchapter@jimisaak.com

Engineering in Medicine and Biology Society

If you have any suggestions for meeting topics or speakers; or if you would like to become active in the Chapter please contact me at: wjsmith@cisunix.unh.edu

Power Electronics Society

If you have any suggestions for meeting topics or speakers; or if you would like to become active in the Chapter please contact Chuck Button at chuckbutton@ieee.org

Power Engineering Society

If you have any suggestions for meeting topics or speakers; or if you would like to become active in the Chapter please contact Paul Krell at krell@unitil.com

Merrimack Valley High School Design Project

By Don Sherwood

Several months ago, two students from the Merrimack Valley High School asked the Section for assistance with their senior design project.

They were developing a system to automatically detect and sound an alarm when a soccer ball went out of bounds. Their approach used an invisible fence dog caller imbedded into the soccer ball. The invisible fence manufacturer supplied them with a complete system capable of surrounding the periphery of a soccer field.

The specific problem they were addressing was the radio link between the ball and a receiver on the side lines. The RF link turned out to be fairly straight forward. A low cost transmitter and receiver module from Ramsey Electronics (~\$35) provided adequate range. The triggering interface, however, was not so

Upcoming Events

August 10th 2006
 6:00 pm, CR Sparks Restaurant
 NH IEEE Section ExCom Mtg

Currently limited to IEEE Section Officers and special invitees. For more information, email NHIEEE@aol.com or go to CR Sparks Map & Directions

straight forward because they were planning to use the high voltage probes on the dog collar. These voltages are very high, up to 30KV, and not well regulated. I suggested that they contact the manufacturer for information on how to access a lower voltage signal from the dog collar. I also sent an interface circuit that could be used to trigger the RF link from the low voltage signal.

Unfortunately, there was about a two week delay getting the package back to them due to a snafu with the email address. In the interim, I sent the package to the school using the regular mail. I have not heard back from them, so I'm not sure how their project turned out. They indicated that they were also talking with one of the instructors from the NH Technical Institute. I hope they were successful.

Certified Software Development Professional Credential

By Stacy Saul, CSDP Program Administrator

The recent economy is forcing software companies to address the "chronic software crisis" Jack Ferguson, Office of the Secretary of Defense

Companies are looking for professionals who understand risk and methodologies that reduce risk... professionals who understand a systems approach to software development that leads to increased cost and scheduling efficiencies...

How can they identify professionals who possess the comprehensive knowledge and skills necessary to lead complex projects?

The question is: What have you done to improve your professional credentials or to improve your company's competitiveness in today's challenging environment?

The IEEE Computer Society's Certified Software Development Professional credential is your answer. Computer Society software engineers developed the CSDP credential for software engineering professionals. They

designed the CSDP exam to measure individual mastery of fundamental knowledge that an experienced software engineer must have to perform essential functions.

Learn more about the CSDP by visiting the web site <http://computer.org/certification>. The 2006 CSDP Candidate Bulletin is available at:

http://www.computer.org/portal/cms_docs_ieeecs/ieeecs/education/certification/CSDP_Bulletin_4c_2006.pdf

International Microwave Symposium

By Tom Perkins

The 2006 International Microwave Symposium in San Francisco was one of the best ever, with record attendance. I attended the Chapter Chairman's dinner (lasted 3 hours), and I was the last to give a report. They started with Region 10 and worked down to Region 1, so I got to hear about chapters throughout the world. There were lots of good papers, workshops, and over 600 exhibitors.

I am on the steering committee for the Boston symposium in June 2009. We're looking for help. Having served before, I can say it's a very rewarding experience. Let me know if you want to help. Manfred Schindler is Chair. Planning meetings will likely happen monthly, starting very soon. I can be reached at tomperkins@ieee.org

How I Became an Engineer

By Tom Perkins

Very briefly, I wanted to be an Electrical engineer since the 8th grade when I became interested in radio electronics. Shortly thereafter, Sputnik was launched by the Russians, which created a spirit of challenge for me. In 1957 I became a radio amateur (ham). My present call is AC1J. My specialty is in RF and microwaves due to a fascination that I have had since high school with very short wavelengths, and some excellent college training in electromagnetic fields and waves, and microwave techniques.



In Memory: John P. Castelli

Published in the Boston Globe on July 17, 2006

Age 89, of Arlington & Lexington July 15. Beloved husband of Marguerite R. (Reardon). Father of Ruth Moon, Mary P. Castelli, Joseph Castelli & John P. Castelli. Also survived by 7 Grandchildren. Son of the late John B. & Mary A. (Hussey) Castelli. Brother of the late Mary & Joseph Castelli.

Funeral from the DeVito-O'Donnell Funeral Home, 1145 Mass Avenue ARLINGTON HEIGHTS Wednesday morning at 8 followed by a funeral mass at 9 in St. Camillus Church. Interment to follow Mt. Pleasant Cemetery. Visiting at the funeral home on Tuesday from 4 to 8 p.m.

John graduated from Lexington High School in 1934 and received his BA degree from Boston College in 1938, and MA degree from Boston College in 1939.

A military veteran of WWII, he was a Radar Officer in the USAAF. From early 1946 to 1955, he worked as a civilian engineer/scientist in V-2 and Aerobe missile instrumentation and field work at White Sands proving ground New Mexico under Dr. Marcus O'Day. Some years were spent in radar improvement work under John Reed from MIT Radiation lab. This was followed by Radio Astronomy, Propagation work and years of solar radio astronomy work and numerous eclipse projects. His four-station worldwide solar radio monitoring network (es-

entially, as he designed and built it) remains in operation after 35 years. All the radio astronomy was under the help and guidance of Dr. Jules Aarons. In addition to his engineering and contract work, John wrote many papers on his work, which were published and presented at scientific meetings around the globe.

John's sister, Mary, was a teacher in the Waltham school system for years. His brother, Joe, a graduate of Lexington High School Class of 1938, was a B-25 pilot in WWII for over a year in the SW Pacific until he was killed near Papua, New Guinea in 1943.

John was a charter member of the Air Force Association, a life member of IEEE, emeritus member of Sigma XI, and the American Astronomical Society, and a former professional engineer in the Commonwealth of Massachusetts.

He was a founding member of the American Air Museum in Britain and other organizations devoted to restoration and display of Air Force aircraft. Through his lifetime, John remained an enthusiast of antique automobiles and of perennial flowers. The latter interest he gained from many hours visiting the Lexington Fairlawn Estate of Harvey C. Wheeler and working as a boy for Howard Monroe of the Historic Monroe's of Lexington, Mass. and especially for Oscar Kenrick at Vinebrook Gardens, Lexington, Mass.



NOTE: John P. Castelli is the grandfather of Kate Palmer a senior at UNH this year and the Student Branch Treasurer.

WANTED WANTED WANTED WANTED WANTED

Wanted - Fellow and Senior Members

If you are an IEEE Fellow or a Senior Grade Member, and you are willing to act as a reference for members aspiring to be upgraded to Senior Member status, please contact Chuck Button at chuckbutton@ieee.org

Wanted - Articles on "How I became an engineer."

Was it because you were always interested in taking things apart and putting them back together (with "extra pieces")? Was it by chance? Was it because you come from generations of engineers and this was your destiny? What was it? Please send me, Jennifer Ng, (jng@ieee.org) your story on how you became interested in Engineering and chose this profession. Every month, we will feature an article in the newsletter

Wanted - Nominations for the Young Engineer of the Year Award

Start thinking about the exceptional young (35 or younger) engineers that you know. Nominations for the award are due by October 10. Complete details will appear in next month's newsletter and on the website. Stay tuned!

Wanted - Women interested in forming a Women in Engineering (WIE) Affinity Group in the NH Section

IEEE Women in Engineering (WIE) <http://www.ieee.org/portal/pages/committee/women/index.html> is dedicated to important issues for Women Engineers. Affinity groups provide the opportunity for members to network at a local level. Activities may include guest speakers, workshops and seminars. All members are encouraged to join and participate in their local group activities to promote growth within the WIE.

If you are an IEEE member and interested in forming a WIE Affinity Group in the NH Section with me, please contact me, Jennifer Ng, at jng@ieee.org. I need six (6) members for the petition form.

For more details about Affinity Groups, go to http://www.ieee.org/web/geo_activities/rab/scs/

WANTED WANTED WANTED WANTED WANTED

Questions & Answers

Q: Who are the NH Executive Committee members?

A: A list of all the members and their contact information is found on the section website at http://www.ewh.ieee.org/r1/new_hampshire/Officers.html

Q: Who do I contact about suggestions for the newsletter?

A: The Editor, Jim Anderson can be reached at james-w-anderson@ieee.org

Q: How can I be removed from the mailing list or update my email address for section news?

A: Send email to the NH Section Administrator, Donna Davis, at

NHIEEE@aol.com

Q: How do I get elevated to IEEE Senior Member Grade?

A: Please visit the IEEE Senior Member website:

<http://www.ieee.org/organizations/rab/md/smprogram.html>

The NH IEEE Section can support your application and you will need two additional Senior members as references. Please contact Chuck Button (NH Section Secretary) at chuckbutton@ieee.org for more details.

Q: Why aren't the links active in the newsletter articles?

A: Try downloading the latest free version of Adobe Reader at http://www.adobe.com/go/gntray_dl_get_reader

Q: Why doesn't the URL http://www.ieee.org/nh_section work?

A: At the present time the URL is case sensitive and you must use http://www.ieee.org/NH_Section. We hope to have this corrected by IEEE shortly.

Q: How do I start a new society chapter?

A: Please refer to this site for details on eligibility and requirements: <http://www.ieee.org/portal/pages/tab/cha/newchap.html>

