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It is hard to believe that we are already in the month of December. We started the year with a lot of enthusiasm to achieve several goals and objectives. Though time passed very quickly, I think we have also accomplished significantly this year and been able to keep the Section along with its Societies and Committees active and serve the Members. Among several plans and accomplishments we have made this year, I would like to share a couple of them with you.

1. **SECTION OFFICERS’ MEETING:** The Section Officers have been meeting at least once a month, usually one week before the Executive Committee (ExCom) meeting, to discuss the policies and action items.

2. **DISCUSSION AT EXCOM MEETING:** We have initiated a special discussion section on various urgent topics at each ExCom meeting and planned the action items.

3. **WEBSITE:** The Section website has been updated with new design and features. Thanks to Davor Dokonal, James Colotti, Metodi Filipov and John Schmidt for their hard work and recommendations.

4. **CONFERENCES:** The Section has been involved in several technical conferences, including the following:
   - **A. Microwave Theory and Techniques (MTT) Symposium & Exhibits,** April 2016
   - **B. Long Island Systems, Applications and Technology (LISAT) conference,** May 2016
   - **C. Long Island Photonics Conference,** October 2016

5. **WORKSHOP:** This year we started offering workshops on the state-of-the-art technological topics. The first workshop was on Linux based embedded systems design on February 29 – March 9, which was a great success.

6. **IEEE DISTINGUISHED LECTURER (DL):** The Section has been successful in inviting a couple of DLs and gave lectures at the conference/seminars organized by the Signal Processing Society, Photonics Society, and Microwave Theory and Techniques Society.

7. **ENGINEERS WEEK:** A seminar series was held in February.

8. **AWARDS BANQUET:** This year, in addition to recognizing the significant contributions of our volunteers, we honored six Region 1 awardees and nine Section awardees in different categories. A new item in the awards program was a special citation to the Tesla Science Center at Wardenclyffe.

9. **IEEE REGION 1 BOARD OF GOVERNORS’ MEETING:** The Chair and the Treasurer the day-long meeting and presented our Section activities on August 6, 2016, in Mystic, Connecticut.

10. **NIKOLA TESLA’S 160TH BIRTHDAY:** Our Section was invited, and we gave a special citation to Tesla Science Center at Wardenclyffe at birthday celebration event held on July 10, 2016.

11. **MEMBERSHIP ENHANCEMENT:** A sub-committee was formed at the beginning of the year to identify the challenges and propose solutions to membership retention and enhancement.

12. **ASSOCIATION OF OLD CROWS (AOC):** The Section Officers was invited to the AOC Awards Banquet held on November 11, 2016.

The slate for election of the Section Officers for 2017 is published. Looking forward to having an efficient new team to lead the Section. Hope you all have a wonderful holiday.

Best,

M. Nazrul Islam, PhD
Chair, IEEE Long Island Section
cchair@ieee.li
LET YOUR VOICE HEARD

The Pulse of Long Island is a newsletter for the members of the Long Island IEEE Section. You can let your voice heard by writing to the Editor. How to bring more value to our members? Interesting new technology, or a project? An issue of interest to members of the IEEE Long Island, Long Island engineers and computer professionals, or Long Island technical community at large? Write to the Pulse.

Let your letter be read, and your voice heard.

HOW TO CONTRIBUTE:
Send your letters or articles via email to pulse@ieee.li.
If selected for publication, the letter or article will be edited before being published.

CONTRIBUTION DEADLINE:
20th of a month for the next month edition.

CONTRIBUTIONS FROM LONG ISLAND TECHNICAL & ENGINEERING COMPANIES:
Publish your technology-related press release (up to one page) at no cost. Please send the press release as a PDF file attached to email to pulse@ieee.li, addressed to the Editor, with a Subject line “Pulse -PR” followed by your company name, and the responsible contact person’s name, email and phone number in the email body.

ADVERTISERS:
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**Senior Past Chair**  
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**THE IEEE LONG ISLAND SECTION WEBSITE**

The IEEE LI Section website is regularly updated to reflect recent section activity and upcoming events. Each Society and Affinity Group has a dedicated page that describes their function and includes contact information. Visit our site at: ieeelongisland.org

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**CONSULTANT’S NETWORK OF LONG ISLAND**

The Consultant’s Network of Long Island maintains a referral service of engineering, computer, managerial and technical professionals. For more information, please visit their website at: www.consult-li.com

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**MEMBERSHIP DEVELOPMENT**

For more information on membership with the Long Island Section of the IEEE, e-mail M. Nazrul Islam at: membership@ieee.li
The Long Island Section of IEEE has 17 Chapters. Each Chapter is a technical subunit of the Long Island Section, associated with an IEEE Society. The Chapters, as well as the Section, are always welcoming volunteers. If you would like to help with any of the Long Island Chapter’s steering groups, please do contact the relevant Chapter Chair, Vice Chair, or one of the Section officers.
IEEE MEMBERSHIP BENEFITS

As an organization with 400,000 members worldwide, IEEE is also able to offer other benefits to its members, from insurance to other discounts. The insurance program offers excellent Life Insurance, Professional Liability (known as “errors and omissions”) insurance, as well as medical and dental insurance.

Please consider sharing your IEEE experience with a colleague. No one knows the benefits of IEEE Membership better than you!! As a gift from IEEE, you have the option of receiving a piece of IEEE-USA merchandise if they successfully join. This is in addition to the monetary reward you earn from the Member-Get-A-Member program.

KNOWLEDGE
All IEEE members receive the award-winning IEEE Spectrum magazine - and exclusive access to IEEE Spectrum Online - plus online access to IEEE Potentials magazine. IEEE members have online access to the tables of contents and expanded abstracts from more than one million IEEE documents, along with full-text searching of the entire IEEE collection. Long Island IEEE members also receive advanced email notice of "The Pulse of Long Island" newsletter. IEEE members also receive exclusive member subscriptions rates on the journals, and discounts on the purchase of conference proceedings, standards, and books.

COMMUNITY
No matter where you live, IEEE is there, with more than 300 local IEEE sections (such as the Long Island section), 1,500 technical chapters, and 300 annual IEEE conferences worldwide. As a member, you'll have the opportunity to attend your local section or chapter meetings, volunteer for leadership positions, or attend a conference to meet industry leaders and practitioners, encounter the latest research, and present your papers to an international audience.

PROFESSION
IEEE career and employment resources offer excellent opportunities for IEEE members. Whether you are a job seeker, consultant or entrepreneur, the IEEE Job Site, Consultants Database, and career publications provide you the edge you need to succeed. IEEE also offers technical and professional online courses from the top universities and corporate, educational institutions at exclusive discounts for IEEE members.

NEW MEMBER WELCOME

THE LONG ISLAND SECTION WOULD LIKE TO WELCOME THE FOLLOWING NEW MEMBERS FOR 2016!

Lisa Boneta
Bo Feng
Astrid Frank
Rhonda R Green
Christopher Horace
Shreeraj Jadhav
Shane Kim
Stephen Mendez
Alec R. Ostrager
Hardat Ramlochan Raywat
Daniel Alexander Rogers
Michael Roszkowski
Wendy Sze
Russ Tedrake
Mallesham Dasari
CALENDAR OF EVENTS

DECEMBER 2016

December 7, Wednesday
IEEE Consultants Network of Long Island, Lecture:
Wireless Communications Evolution to 5G
By Lyubov Renselaer
LIU-Post Campus, Lorber Hall, 720 Northern Blvd., Brookville
6:30 PM - Refreshments
7:00 PM - Lecture

December 9, Friday
NYU CATT Research Review + Open House
NYU Brooklyn Campus (Brooklyn Poly),
6 MetroTech Center
333 Jay Street, Brooklyn, NY
11:00 AM - 4:00 PM

December 13, Tuesday
IEEE LI Antennas and Propagation Society Lecture:
How Far Is The Far Field?
By John S. Asvestas
BAE Systems, 450 Pulaski Rd., Greenlawn, LI
6:00 PM - Food & Refreshments
6:30 PM - Lecture

December 19, Monday
EXCOM Meeting
Telephonics, Farmingdale, LI
5:45-6:15 PM - Dinner
6:15-8:00 PM - Meeting

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IEEE® computer society

Share Your Experience
PRESENT YOUR WORK TO IEEE

Working on an interesting project? Or have an interesting topic to talk about? A startup ready to spread a word, or in need of beta testers with computer knowledge?

Computer Society Chapter invites you to present your project or your experience. For one of the upcoming meetings we’d like to mash technical and social, and have several presenters presenting interesting computer-related topics in a shorter timeframe, fostering conversation. This is an opportunity to meet each other, learn about our work and possibly identify opportunities for collaboration.

Contact IEEE Computer Society Chapter at computer@ieee.li with your suggested topic.
Long Island’s Electrical and Electronic History

By Jesse Taub, IEEE Long Island Section Historian

The October and November Pulse presented the text of two of the four short talks that our members gave at the Tesla 160th Birthday Event held at the Tesla Science Center at Wardenclyffe in Shoreham on July 10, 2016. The text of the talk that the third speaker, Milutin Stanačević gave is presented below. Dr. Stanačević is an Associate Professor in the Electrical and Computer Engineering Department at Stony Brook University. He has told me that while growing up in Serbia, Tesla was a role model for him. He often apprises his students of Tesla’s contributions.

TESLA AND WIRELESS POWER TRANSFER
Milutin Stanečević, Associate Professor, Electrical & Computer Engineering Department, Stony Brook University

We know what Tesla's work has brought us through the last hundred years. He has been recognized for the alternative current power supply system and the transfer of the electrical energy into mechanical energy through AC motors. But what the future holds for Tesla's work? How the future implementations of his ideas and concepts that he introduced would affect our daily lives? Based on the current direction of the technology, we can already anticipate that his influence will only grow bigger.

Tesla's contributions to the wireless technology have already been significant. He was the first to introduce the remote control and had great impact on the development of the radio technology. Although, he was not the first one to demonstrate the radio transmission, he was the first one to envision the wireless transfer of information. While one of the most important technologies of the 20th century has been the wireless transmission of information, wireless transmission of power could be the technology that would become ubiquitous in the 21st century. Imagine all of our gadgets, like cellphones, tablets, laptops being powered remotely, and then move to the cars and the planes. Tesla not only envisioned this technology, but we can speculate that development of this technology was his greatest goal. He rightly anticipated the potential impact of this technology on humanity. How far he has gone in the development of this technology and could his ideas be explored in the future?

Let us remember one of the first Tesla's demonstrations. Through the use of resonant coils, known as Tesla's coils, he was able to turn on the light bulb from one end of the laboratory to the other end of the laboratory. His work on the wireless power transfer through resonant coils, the idea of inductive coupling between tuned transmitting and receiving circuit, is the founding principle and the bases of the current research efforts into small and mid-range wireless power transfer. This idea has been explored for powering the implantable devices in body now for nearly fifty years, with the cochlear implant being the first commercial implantable device that does not require wires through the skin. The transfer of power to different implantable devices is still actively researched by many renowned scientists and the impact of this technology on medicine will be significant. We also have the first commercial products for recharging our cell phones at very short distances. We can, with great degree of certainty, predict that the inductive coupling technique, as proposed and demonstrated by Tesla, will be used in many other applications for wireless powering in the small and mid-range. What is still unknown is will we be able to use Tesla's ideas to achieve power transfer at the longer distances? Although Tesla was not able to fully demonstrate the long range power transfer, we know that his ideas and theory are scientifically sound. We know that he was able to calculate the resonant frequency of Earth precisely, one of the facts that demonstrate that he was not only the great innovator and the experimentalist, but the great scientist. We know that the obstacle for the practical implementation of his idea is in the efficiency of the antennas that can be designed. Will this problem be solved in the future, we don’t know, but we can be certain what impact this would have on our society.

Next month’s Pulse will feature the text of the final talk by our Section’s Secretary and Pulse Editor, Davor Dokonal.
The IEEE Consultants Network of Long Island (LICN) is presenting a lecture titled:

WIRELESS COMMUNICATIONS EVOLUTION TO 5G

DATE:
Wednesday, December 7, 2016

SPEAKER(S):
Lyubov Renselaer

LOCATION:
LIU-Post Campus, Lorber Hall,
720 Northern Boulevard, Brookville, NY

TIME:
6:30 PM - Refreshments
7:00 PM - Seminar

COST
This seminar is free and all are invited.

CEU CREDITS:
0.2 CEU Credits.

WHO SHOULD ATTEND?
Engineers who are interested in wireless communications and its advancement to 5G.

ABSTRACT:
The development of mobile cellular networks requires the use of higher frequency bands, the provision of higher quality service and of faster speeds. The dramatic growth of mobile data services as driven by wireless Internet and Smart Devices has trigged investigations of 5G for the next generation of terrestrial mobile telecommunications. Different mobile traffic requirements have shown different futures which introduce significant impacts on future mobile system architectures, on technology developments and on their evolution. Future traffic developments will bring new requirements and challenges to future mobile broadband systems. There are some new possibilities: Cognitive Radio, Het-Net, mmWave and Cloud Technologies whose proper management will improve wireless communications in 5G.

LOCATION:
This lecture will be held at: LIU-Post Campus, Lorber Hall, 720 Northern Boulevard, Brookville, NY. Please see http://licn.org/pmwiki/uploads/Events/LIU-LICN.jpg for directions. The presentation will begin at 7:00 PM. Light refreshments will be served at 6:30 PM

SEMINAR COORDINATORS:
Bryan Tropper, Chair of the IEEE APS Society, LI Section

SPEAKER BIOGRAPHY:
Lyubov Renselaer holds a Masters degree of Electrical and Computer Engineering from the New York Institute of Technology (NYIT) and Bachelors and Masters degrees in Automatic Telemechanic and Communications from USUTN, Sverdlovsk, Russia. Lyubov has more than fifteen years of Telecommunications Engineering Experience with specific expertise in digital communications exchange and networking communications.

REGISTRATION:
The presentation is open to the general public. Pre-registration is not required, but it is requested. Please send pre-registration e-mail to ambertec@ieee.org. There is no admission fee and there is no fee for CEU credit.

FOR FURTHER INFORMATION
Contact John Dunn at 516-378-0979.

IEEE Continuing Education Programs are peer-reviewed by content experts. This peer review guarantees both quality of the technical content of learning materials, as well as adherence to IEEE's strict criteria for educational excellence. All programs that pass this strict process are entitled to award IEEE Continuing Education Units (CEUs), recognized as the standard of excellence for continuing education programs in IEEE's fields of interest.
The Long Island Chapter of the IEEE Antennas & Propagation Society is pleased to announce the following lecture:

**HOW FAR IS THE FAR FIELD?**

**DATE:**
Tuesday, December 13, 2016

**SPEAKER(S):**
John S. Asvestas, IEEE Life Fellow

**LOCATION:**
BAE Systems
450 Pulaski Road, Greenlawn, NY

**TIME:**
6:00 PM - Food & Refreshments
6:30 PM - Lecture

**COST**
This seminar is free and all are invited. Attendees must be US citizens and a drivers license Photo ID must be presented for entrance to the meeting.

**ABSTRACT:**
We develop a new formula for determining the far field region of a radiator / scatterer. We arrive at this formula by examining the integral representation of the magnetic field scattered by a thin, straight wire. The formula consists of three distinct parts that result from bounding the errors on the amplitude and phase of the free-space Green's function and the error in dropping one of the two terms in the integral representation. It is more general than the existing formula and avoids the pitfall of the distance to the far field going to zero with the characteristic dimension of the object.

**LOCATION:**
This lecture will be held at BAE Systems located at 450 Pulaski Road, Greenlawn, NY. The facility is located just east of Park Ave (Suffolk County Rte 35) on Pulaski Road.

**REGISTRATION:**
Registration is required, & is available via done IEEE vTools only: https://events.vtools.ieee.org/meeting_registration/register/42326
The lecture is free. Attendees must be US citizens and a drivers license Photo ID must be presented for entrance to the meeting.

**SEMINAR COORDINATORS:**
Bryan Tropper, Chair of the IEEE APS Society, LI Section

**SPEAKER BIOGRAPHY:**
John S. Asvestas was born in Athens, Greece. He received the B.S.E., M.S.E., and Ph.D. degrees in Electrical Engineering from The University of Michigan, Ann Arbor, in '63, '65, and '68, respectively. He has worked at The University of Michigan Radiation Laboratory, the Technical University of Denmark Applied Mathematical Physics Laboratory, the Radar Systems Group of Hughes Aircraft Company (currently Raytheon), and the Corporate Research Center of Grumman Corporation (currently Northrop/Grumman). He has also taught at the University of Delaware, UCLA, and the Technical University of Crete. He retired in Jan. 2016 after 20 years with NAVAIR's Radar and Antenna Systems Division, Patuxent River, MD. His main interest is in analytical and computational electromagnetics. He has made contributions to physical optics and the physical theory of diffraction, solutions of large systems of equations, the interaction of acoustic and electromagnetic waves for counter-stealth applications, water waves, and the method of moments.

Dr. Asvestas is an IEEE Life Fellow and a NAVAIR Fellow. He has been a past president of APS, Long Island, and a member and Chair of the Government Executive Committee of the Electromagnetic Code Consortium.

He is the recipient of a 2008 NAWCAD Commander’s Award, a 2009 Dr. D. M. Etter Top Navy Scientists and Engineers of the Year Award, a 2012 Small Business Innovative Research (SBIR) People’s Choice Award, and a 2016 Department of the Navy Meritorious Civilian Service Award.
We are working on a number of projects that provide volunteer opportunities and are trying to set up programs that will have real benefit to the volunteers as well.

1. Mentoring students at Farmingdale State College.
2. Mentoring students at New York Institute of Technology.
4. Setting up and participating in Youth Bureau STEM programs.

At FSC and NYIT, we get to work with bright students trying to make their way in the world. We can pass on to them the lessons learned through our life experience, provide some guidance and put forward pet ideas we would like to see developed. We can have students share and carry forward our ideas and projects we haven’t been able to finish ourselves. We do good and gain enjoyable time. And we gain a bit of access to campus facilities. As we meet and interact with faculty, we may be able to sit in on classes and lectures of interest.

Through the Northport High School project, we get to learn about and use the Solar Pathfinder equipment as well as guiding interested young people.

With the Youth Bureau STEM programs, we have the opportunity to help and guide young people toward a good life. There are many young people who need good role models and often, just someone to talk to. We can make the world a better place.

If we are good at it, and have measurable success, we could generate proposals to Federal and State entities that support STEM programs and possibly receive awards of sufficient size to provide staff stipends to those who need it. For the younger volunteers, it might open a whole new career path.

I do not view STEM programs as a path to jobs in STEM fields. There just are not enough STEM jobs on Long Island to support current graduates. But I do see STEM knowledge as essential for survival and rational decision making for everyday life in the Modern world.

Let me know of your interest and I can provide specific details. Bill Wilkes 631-421-0160.
FRIDAY, DECEMBER 9, 2016

NYU CATT
Research Review + Open House

Come and see the new MetroTech Maker Space at the NYU Tandon School of Engineering. Watch 3D printing and other state of the art fabrication, listen to professors and students describe projects of interest and most of all find out what CATT can do for your business. Expert engineering and technology assistance is available to existing businesses as well as new start-ups. New York based companies are eligible for attractive program assistance including partial matching.

RESEARCH AREAS

Developing GHz Spectrum
5G Cellular
Hardware For Secure Systems
Large Scale Semiconductor Design and Systems on Chip
Advanced Modulation Receiver Design
Control Systems Optimization
Data Science
Cyber Security

NYU Brooklyn Campus
(Brooklyn Poly), 6 MetroTech Center
333 Jay Street, Brooklyn, NY 11201

AGENDA

1. Welcome to NYU Tandon School of Engineering & CATT (11:00 – 11:15)
2. Overview of the CATT
   a. Resources & Capabilities Available
   b. Services and Collaboration Models
   c. Selected Project Highlights
3. Research Activity Presentation 1 (11:40 – 12:00)
4. Research Activity Presentation 2 (12:00 – 12:20)
5. Lunch and Poster Session (12:20 – 1:20)
6. Research Activity Presentation 3 (1:20 – 1:40)
7. Research Activity Presentation 4 (1:40 – 2:00)
8. Tour of Maker Space and Overview of Capabilities (2:00 – 2:30)
9. Coffee Break (2:30 – 2:45)
10. General Discussion and Q&A
    a. How can CATT Help Your Business (2:45 – 3:15)
11. Wrap up and Contact Follow up (3:15 – 3:45)
12. Adjourn Open House Activities and Break (3:45 – 4:00)
13. Board Meeting
    (NYU CATT personnel only) (4:00 – 5:00)
14. Dinner (Board Members and NYU Associates) (5:30 – 7:00)

RSVP: Gary Lomp, Ph.D., CATT Business Development
Gary.Lomp@nyu.edu
Nanoparticles Used in New Insulin Make Life Easier for Diabetic Patients

By James Smalley, East Islip High School

Type 1 Diabetes is a huge problem for children and families in the U.S. and around the world. Diabetes is a chronic condition in which the body’s blood sugar cannot be balanced, as a result of the body’s resistance to or misuse of insulin (a protein that takes glucose to body cells) acting on glucose in the blood in Type 2 diabetes, or as a result of the pancreas not producing enough (or any) insulin to bring glucose in the bloodstream to body cells in Type 1 diabetes (Type 1 Diabetes, American Diabetes Association). As of 2012, approximately 29.1 million Americans had diabetes, a whopping 9.3% of the population (Type 1 Diabetes, American Diabetes Association). There are about 1.4 million new cases diagnosed each year (Type 1 Diabetes, American Diabetes Association). Insulin keeps blood sugar regulated in the bloodstream. J. McGarrity, (personal communications, February 21, 2016) explains that “low blood sugar causes trembling, dizziness, frequent hunger, nausea, sweating, blurred vision, and will cause death if it’s low enough.” J. McGarrity, a diabetic patient, also says that “high blood sugar makes me thirsty and urinate frequently and also makes me get chest pains and headaches. I’ve been hospitalized because of high blood sugar.” Although treatment is already used in which human-made insulin is inserted into the body, creating insulin that can be evenly released into the bloodstream throughout the day is problematic. A new discovery in the field of nanotechnology has uncovered a solution to this problem.

Nanotechnology, by definition, is the manipulation of materials at an atomic, molecular, or subatomic scale. Nanotech is “science, engineering, and technology conducted at … about 1 to 100 nanometers” (What is Nanotechnology?, nano.org). To demonstrate that size, “if a marble were a nanometer, then one meter would be the size of the Earth” (What is Nanotechnology?, nano.org). So, immensely tiny particles are being created and manipulated in the new science field. Two main approaches exist in nanotechnology, with devices built by controlling atoms to assemble themselves chemically called the “bottom-up” approach, and objects constructed without atomic-level control considered the “top-down” approach (Picraux, 2015) This new insulin was created using a “bottom-up” approach, where small atoms in insulin were manipulated (Jensen, 2016).

The new insulin was created by Knud J. Jensen of the Department of Chemistry at the University of Copenhagen. According to Jensen, natural insulin found in the human body “assembles into homogenous grid-like structures called hexamers” (Jensen, 2016). The biggest challenge with human-made or altered insulin made inside the laboratory is mimicking this structure. However, by manipulating the molecules that form insulin through nanotechnology’s “bottom-up” approach & adding certain molecules, the insulin construction can be controlled “with great precision”; enough precision to replicate insulin’s hexamers (Jensen, 2016). By adding Fe2+ to the insulin...
molecules, tiny “hooks” are created on the hexamers (Jensen 2016). (See Appendix for Figures A and B that show the organization of the insulin molecule and the Fe2+ ions used as hooks). These allow for even more control in building the insulin, resulting in an organized, grid-like structure that would be uniform in all insulin distributed to patients. It also allows the insulin to be self-assembled; the protein can build itself as long as the nanoparticles needed are available (Jensen, 2016). When inside the body, it is believed that the release of the insulin into the bloodstream can be regulated because “the more uniformly insulin can be assembled, the more likely it can be released in predictable amounts …” (Jensen, 2016).

To test the theory that the new insulin can even be released into the bloodstream, Jensen and the researchers injected the new insulin into mice. The blood glucose levels of the rats fell due to the insulin (Jensen, 2016). Jensen concluded that “we can influence the manner insulin assembles [in the human body] and we have demonstrated that the insulin can then be released” (Jensen, 2016).

These findings show that there is a new hope for diabetic patients constantly worrying about their glucose levels; the findings could be used in a variety of medications, such as an orally taken pill that would bring the Fe2+ ions and insulin molecules into the layers of fat that normally hold injected insulin, allowing for the self-assembling protein to make itself and then release itself predictably to keep blood glucose balanced during the day. However, further research is necessary in order to ensure this medication is safe and effective for humans living with diabetes.

Justin McGarrity, 14, from Centereach, NY is a patient with Type 1 diabetes. Currently testing a new insulin pump that does the same thing as this new insulin does (releases insulin predictably into the body based on glucose level), Justin must use a needle to connect the insulin pump to skin on his abdomen to allow insulin to be pumped into a fat layer and distributed to the bloodstream when his blood glucose becomes high during the day. J. McGarrity (personal communication, February 21, 2016) claims, “It’s very annoying but better than my other pump; at least with this one I don’t have to prick my finger for a sugar reading like I had to do with my other pump. A pill would be so much easier. Any medication that doesn’t need a needle to be administered probably would.” As seen in the struggles of this young diabetic patient, the new technology would make life with Type 1 diabetes significantly easier. By creating an oral pill, to be taken daily, containing self-assembling insulin that releases itself evenly during the day, it eliminates the need for an insulin pump or injection. All in all, the new nanoparticle would make life for anyone living with diabetes easier.

REFERENCES:
EMPLOYMENT OPPORTUNITIES

Old Westbury/Manhattan

Engineering

ADJUNCT ASSISTANT/ASSOCIATE PROFESSOR OR INSTRUCTOR

Computer Science – Electrical and Computer Engineering

Old Westbury/Manhattan

Department: Academic Affairs
Primary Location: Old Westbury or Manhattan
Responsibilities:
New York Institute of Technology (NYIT) School of Engineering and Computing Sciences is seeking part time Assistant/Associate Adjunct Professors and Instructors in Computer Science, or Electrical & Computer Engineering, and Information Assurance for either of its Old Westbury or Manhattan locations to offer instruction. Courses to be taught include undergraduate as well as graduate level courses. We seek instructors who can teach graduate level Computer Science or Electrical & Computer Engineering courses, during daytime, and Saturdays, such as Theory of Computation, Algorithms, Computer Architecture, Software Engineering, Operating System Security, Computer Security, Programming Languages, etc., for Computer Science; and Probability and Stochastic Processes, Linear Systems, Computer Networks, Control Systems, EMT, etc., for Electrical & Computer Engineering.

Qualifications:
Candidates must have a graduate degree (Ph.D. degree preferred) in Computer Science, Electrical & Computer Engineering, or related area, and excellent communication skills.

For consideration, e-mail your curriculum vitae and cover letter plus 3 references to Jenny Cheng: jcheng09@nyit.edu.

Please reference job code: ADJ-F2016 in your subject line. NYIT is an AA/EEO institution.

ASSISTANT PROFESSOR - ELECTRICAL ENGINEERING TECHNOLOGY

Farmingdale State College, a campus of the State University of New York, is a college of applied science and technology with an enrollment of more than 9,000 students. As the largest of SUNY’s colleges of technology, Farmingdale equips students with the resources and critical thinking skills sought by today’s emerging industries through its Schools of Business, Engineering Technology, Health Sciences, and Liberal Arts & Sciences. Farmingdale offers 38 undergraduate degree programs and will offer its first Master’s program in the Fall 2017 semester. The college is a pioneer in environmental sustainability and alternative energy, and boasts a highly successful NCAA Division III athletics program.

According to the 2016 U.S. News & World Report, Farmingdale State College is ranked #9 among public colleges in the north and #28 among all colleges in the region. Farmingdale has been ranked as one of the top colleges in return on investment and as one of the safest colleges in the nation according to multiple rankings. The campus is located on 380 lush acres in the heart of Long Island, approximately 45 minutes by rail or automobile from NYC.

The Department of Electrical and Computer Engineering Technology at Farmingdale State College invites applications for Two tenure track Faculty Positions in all areas of Electrical and Computer Engineering with anticipated starting date in August 2017. Preferred areas of expertise include: Computer Architecture, Networking, Embedded Systems, Telecommunications Systems, Wireless Communications, Optical Networks and Alternative Energy Systems. Primary responsibilities include teaching and development of courses and/or programs at the undergraduate and/or graduate level as well as participating in student advisement, recruitment and other departmental activities. The candidate is also expected to be involved in research leading to publications in professional journals, university service and other scholarly activities. The successful candidate will have excellent written and oral communication skills and must be committed to the continuous improvement process and the outcome-based assessment of the programs to maintain specialized accreditation. Teaching assignments will include both day and evening courses. The Department offers ETAC/ABET accredited Bachelor of Science degree programs in Computer Engineering Technology and Electrical Engineering Technology. In addition, it offers a Bachelor of Science degree program in Telecommunications Technology & it has proposed a BS program in Sustainable Energy Technology.

All faculty members at Farmingdale State College have three workload components: teaching, research and scholarly activity, and service. Service includes advising students as well as serving on departmental and college-wide committees. The successful candidate will demonstrate an interest and high level of competence in teaching. Candidates should have a research agenda that complements their area of academic specialty and has the potential for peer-reviewed publications and presentations, both of which are necessary for promotion and tenure at Farmingdale State College.

QUALIFICATIONS:
Earned Doctoral and Master’s degrees in Electrical Engineering, Computer Engineering, or related field. Teaching and/or industrial experience is desirable

PREFERRED QUALIFICATIONS:
Additional industrial and teaching experience in the above mentioned areas is preferred.

- This is a full-time, 10 month faculty position.
- POSITION AVAILABLE: September 1, 2017
- CLOSING DATE FOR RECEIPT OF APPLICATIONS: December 20, 2016
- Salary $65,000 and may increase commensurate with experience
- The State University of New York offers excellent fringe benefits including health insurance options and retirement plans

VISA SPONSORSHIP IS NOT AVAILABLE FOR THIS POSITION.
The Consumer Information web page can be viewed at the following link:
http://www.farmingdale.edu/consumer-information

This page describes various services, information and statistics on many different aspects of the College’s operations. State University of New York is an Equal Opportunity/Affirmative Action Employer

APPLICATION INSTRUCTIONS:
A letter of application with curriculum vitae should be submitted online at:
www.farmingdale.edu/employment

Candidates invited for interviews will be asked to make a presentation on their research as well as a separate teaching demonstration.
The IEEE solicits nominations for the Fellow grade each year. The 2016 nominations are due at IEEE headquarters on March 1, 2017. The Fellow grade recognizes members whose technical or managerial contributions have been recognized as distinguished. The nomination procedure is arduous requiring at least 5 IEEE Fellows to serve as References and a strong Endorsement from one of the IEEE's many Societies. Furthermore, the candidate’s accomplishments must be documented. This usually means publications in peer reviewed journals or patents. Instructions and nomination forms can be obtained by going to: ieee.org and then type in “Fellow Nominations” in the search box. I encourage all of us to look for worthy candidates.

If you know of any engineer who may qualify for Fellow, please contact me. Our Awards Committee will evaluate each candidate and send in a Section Endorsement for any worthy individual. We will also assist the nominator to ensure that the nomination form is properly processed. I can be reached at: jjetaub@aol.com if you wish to nominate someone.

The Section is inviting you to record your stories and histories in our monthly publication, the Long Island Pulse. An article of approximately 300 – 350 words is recommended.

LET US HEAR FROM YOU.
Send your article to: Pulse@ieee.li
C.C. Life Member Chair: life@ieee.li

IEEE LIFE MEMBERS
Write for Pulse!

The IEEE Long Island Section has held meetings with many of our Life Members and Senior Engineers, in recent months. Your stories and histories in engineering are interesting, inspiring and should be recorded for future generations. You have served your profession for many years, many have served our country in the military, many as engineers fighting the Cold War. The many contributions are the legacy to this new digital age, space age, environmental age and beyond.

WE WANT YOUR STORIES
IEEE CONSULTANTS NETWORK OF LONG ISLAND

THE IEEE CONSULTANTS NETWORK OF LONG ISLAND (LICN) is a nonprofit professional organization affiliated with the Institute of Electrical and Electronics Engineers. Our members include dozens of electrical, electronic, mechanical and software engineers with expertise in over 65 categories of technology and business. All are members of the IEEE and adhere to the IEEE professional codes of ethics.

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