

Editor's Note

I am delighted to bring you the newsletter for the quarter ending February 2018. In this issue, you can see, that we are evolving with excellent IEEE NTC's activities, successful events and visibility. I am extremely happy to share that the IEEE NTC group in the social media have crossed 5700 established and young researchers to connect and communicate the current happenings in the nanotechnology. In the upcoming issues, we are happy to have the President's Note with the IEEE NTC officer list and announce the full list of DLs. We also highlight our journals and conferences as the leading organization in Nanotechnology. I hope you enjoy this issue and do let us know if there is any topic you'd like to see covered in the future issue.

Jr-Hau He

Associate Professor

King Abdullah University of Science and Technology

President's Note

Dear NTC Members and Friends:

I am Yonhua (Tommy) Tzeng who just took the challenging responsibilities of being President of IEEE Nanotechnology Council for 2018-2019. NTC has an excellent foundation built and continuously improved by volunteers and leadership teams in past many years. On behalf of NTC, I like to thank Prof. Wen Li, the immediate past president of NTC and all the volunteers for their contributions! Looking ahead of NTC, we wish to build and expand NTC community into true valuable assets of NTC's 22 member societies and a fast growing Global Nano Hub known by the world as a multidisciplinary technical leader in nanotechnology. Proactive and creative initiatives and humble but confident leaning from proven successful examples will lead our dream to come true.

In the coming years, we shall measure our progress in building a Global Nano Hub based on the frequency of collaborative activities with 22 member societies; geographical and disciplinary breadth of NTC leadership team and volunteers; the increase in NTC's currently nearly 9000 members of the Nanotechnology Interest Group; increase in number and information sharing by members of NTC social media's Nanotechnology Group; subscribers of IEEE Nanotechnology Magazine and participants of NTC summer schools and chapters; and most importantly, the increase in

repetitive participants of NTC conferences.

NTC's success in becoming known as a global technical leader in nanotechnology will be measured by long lasting impacts and efficient editorial process of NTC publications such as TNANO and INM; Rich contents of NTC websites; number of chapters and frequency of chapter activities; summer schools with their long-lasting impacts; technical activities of TCs and contributions by TC members; and conference attendance and budget surplus.

On behalf of NTC, I thank you all for continuous support and promise to work together with you all to create more values for better humanity and for everyone in our community!

Sincerely,

Yonhua (Tommy) Tzeng,

President and Fellow,
IEEE Nanotechnology Council,
University
Chair and Distinguished Professor of Electrical Engineering, National Cheng Kung University, Tainan City,
Taiwan



IEEE NTC Elected Officers - 2018

President	Yonhua (Tommy) Tzeng
Past-President	Wen J. Li
President-Elect (elected in even years)	Open
Vice President for Conferences (elected in even years)	Guangyong Li
Vice President for Finance (elected in even years)	James Morris
Vice President for Publications (elected in odd years)	Jin-Woo Kim
Vice President for Technical Activities (elected in odd years)	Michel Frechette
Secretary	Edward G. Perkins

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- MARSS –2018, Last date extended.
- IEEE-NANO 2018.
- Journal Highlights
TNANO
IEEE-Nanotechnology magazine
- Call for Nominations for NTC chapter of the year Awards
- IEEE-NTC, sponsored summer schools—2018

For more details and updates visit IEEE—Nanotechnology

Council's Official website:

<http://sites.ieee.org/nanotech/>

IEEE Nanotechnology Council Distinguished Lectures for 2018

The IEEE Nanotechnology Council (NTC) has appointed its Distinguished Lectures for 2018.

Talks by NTC Distinguished Lecturers can be requested by: IEEE student branches; NTC or member Society Chapters; NTC and member Society Conferences; conferences of other IEEE Societies not members of the NTC for major plenary/keynote (based on availability of funding). Please contact the presenter directly to arrange for a presentation. The talk will also include an introduction of the IEEE Nanotechnology Magazine. Part of the effort is to promote the magazine to students.

Prof. Husam Alshareef

King Abdullah University of Science & Technology

Thuwal, Saudi Arabia. Email: husam.alshareef@kaust.edu.sa

Indium-Free Fully Transparent Electronics Deposited Entirely by Atomic Layer Deposition

The field of transparent electronics based on metal oxide conductors and semiconductors has attracted much attention recently, because it is expected that fabrication of fully transparent devices will not only enable higher performance displays, but will also usher in a new era of transparent electronics and sensors. However, the limited work on fully transparent circuits has almost exclusively relied on indium tin oxide (ITO), indium doped zinc oxide (IZO) or other indium-containing oxides. It is well-known that indium supplies have been a constant concern for the display and touch screen industries, thus it is necessary to demonstrate high-performance fully transparent TFTs using alternative transparent oxides. In light of the above facts, we demonstrate robust processes for fully-transparent electronics fabrication with the following features: (1) A unique multilayer semiconductor channel composed of alternating layers of hafnium oxide (HfO₂) and zinc oxide (ZnO), which gives significant improvement in the electrical stability of our devices; (2) entirely indium-free transistors (gate, SD, channel, dielectric are all indium-free); (3) all-oxide, truly fully-transparent devices and circuits (no metals, only transparent oxide conductors and semiconductors); (4) single deposition technique (ALD) for all materials, which means uniform and conformal deposition is possible on both planar and three-dimensional device architectures; (5) maximum process temperature of 160°C which allowed us to demonstrate the process on both rigid glass and flexible substrates. A variety of circuits including inverters, rectifiers, and ring oscillators are demonstrated using this technology.

Prof. Dominique Baillargeat

University of Limoges, France, Email: dominique.baillargeat@xlim.fr

3D Radio-Frequency to millimeter wave heterogeneous system integration: Emerging nanotechnology for RF nanopackaging, the link between nanoscopic and macroscopic worlds?

Whether for niche applications (military, space, medical) or for high volume applications (portable devices, entertainment, automobile) the design of RF subsystems requires balancing packaging choices to meet demanding customer targets of cost, size and high performance.

In this context, numerous efforts have recently focused on heterogeneous 3D integration of components to subsystems for future RF to mmW applications. However major challenges remain and as a response, RF nanotechnology offer new opportunities. It enables new nanomaterials with unique RF properties due to their small dimensions and good transport properties for more efficient interconnects, EM shielding and thermal management. The talk will start by introducing the future trends in RF to mmW electronics, highlighting limitations and opportunities that nanomaterials with associated nanotechnologies and additive manufacturing processes (such 3D printing) can help to overcome and take ad-

vantage of respectively. The focus will be on what is actually done and will be done to pave the way for better 3D integration. The talk will cover the latest developments of highly multidisciplinary approaches in RF/thermal-mechanical simulations at nanoscale intensive research investigations focused on carbon nanotubes, nanowires, graphene or other 2D materials innovative RF nanopackaging approaches. A review of the state of the art will be given during the entire talk, in order to provide examples of tangible results.

Prof. Sasitharan Balasubramaniam

Dept. of Electronic and Communication Engineering, Tampere University of Technology, Finland;

Telecommunication Software and Systems Group (TSSG), Waterford Institute of Technology, Ireland. Email: sasi.bala@tut.fi

Wireless Optogenetics Nano Communications and Networking; Engineering Bacterial Molecular Communication Systems; Calcium-signaling based Molecular Communication Systems

Prof. Samir Iqbal

Professor and Chair, Department of Electrical Engineering, Professor, School of Medicine

University of Texas Rio Grande Valley USA. Email: smiqbal@ieee.org

Nanotextured Microfluidic Substrates to Interface Living Systems; Cancer Nanotechnology; Nanotextured Materials for Selective Biosensing

Prof. Xiaoning Jiang

North Carolina State University, Raleigh, NC 27695 USA

Email: xjiang5@ncsu.edu

Nanoacoustics: Materials, Devices and Applications

Prof. Jin-Woo Kim

Univ. of Arkansas, USA, Email: jwkim@uark.edu

Engineering Programmable Nanoscale Building Blocks for Epitaxial Self-Assembly of Advanced Materials

Epitaxial assembly of multiple molecular/nanoscale particles (NPs) into multifunctional structures with arbitrary sizes and shapes has the potential to transform many fields of research, ranging from optoelectronics and nanophotonics to nanomedicine. Self-assembly has emerged as a powerful and practical strategy for controlled synthesis of such multifunctional, hierarchical NP structures. Despite the promise and recent progress, the accurate, scalable, and high-rate epitaxial assembly of heterogeneous nanocomponents into multifunctional nanostructures with "customized" shapes and sizes still remains a challenge. Our research group focuses on a transformative research to develop a nano-building block toolbox ("nanotoolbox") for "programmable and customizable" self-assembly of bio-hybrid multifunctional nanostructures. This is accomplished with our novel technology that enables controls over the number and geometric configurations of functional ligands, including DNA, RNA and peptides, on various NPs. This presentation will discuss the fundamental challenges to epitaxial self-organization of NP nanoarchitectures, and present our strategies to realize the control and functionality necessary to overcome the challenges. Also, it will discuss the future directions for research in the field and their promise in applications through examples such as multifunctional and multimodal contrast nanoagents for advanced nanotheranostics that could catalyze a paradigm shift in medicine.

Prof. Larry Nagahara

Johns Hopkins University, Baltimore, USA

Email: Larry.Nagahara@jhu.edu**Convergence of Nanoscience and Nanotechnology Perspectives in Oncology: Innovative Ways to Fight Cancer**

For more than 45 years, the U.S. government declared a “war on cancer” and committed to investing in laboratory and clinical research in order to understand the causes of cancer and thereby aid its diagnosis, treatment, and cure. Despite enormous advances and important improvements in the diagnosis and treatment of many cancers, the “war” has in significant ways progressed less than originally hoped. The complexity of the disease is evident in the dynamic and evolving course the disease takes during its progression and response treatment. Harnessing the power of nanotechnology could lead to a paradigm shift in the way we understand and ultimately and treat cancer. Novel and multi-functional nanodevices capable of detecting cancer at its earliest stages, pinpointing its location within the body, delivering anticancer drugs specifically to malignant cells, and determining if these drugs are effective is a vision shared by many scientists, engineers and clinical researchers. Recently, in-vivo nanobiosensors are able to detect tumors and metastatic lesions that are far smaller than those detectable using current, conventional technologies. Functionalized nanoparticles have delivered promising multiple therapeutic agents to tumor sites in order to simultaneously attack multiple points in the pathways involved in cancer. This lecture will describe in details some of the advances achieved these past several years and the challenges that nanotechnology faces for eliminating cancer.

Prof. Xiao Wei Sun

Department of Electrical and Electronic Engineering, College of Engineering, Southern University of Science and Technology, 1088 Xue-Yuan Road, Nanshan District, Shenzhen, Guangdong 518055, China

Email: sunxw@sustc.edu.cn**Colloidal Quantum Dots for Energy-Saving Quality Displays and Lighting****Prof. John T.W. Yeow**

Univ. of Waterloo, Canada

Email: jyeow@uwaterloo.ca**Nanodevices for Biomedical Instruments**

The emergence of minimally invasive diagnostics and therapeutics in modern high-tech medicine has generated an unmet demand in miniaturized biomedical devices. There exist a definite need for clinical diagnostic and treatment instruments that are based on micro and nanotechnologies. In the past decade, micromachining technology and nanomaterials are making big impacts in many fields, especially in the field of biomedical engineering. The small size and low mass provided by micro/nanodevices make medical instruments portable, power efficient, and, in many cases, more effective. This talk will focus on the current development of the state-of-the-art miniaturized X-ray CT machines, endoscopic imaging devices, MEM-based confocal microscope and nanosensors.

Conferences-2018

14th ACM/IEEE International Symposium on Nanoscale Architectures
July 18-19 2018, Athens, GREECE

<http://nanoarch.org>

NANOARCH is the annual cross-disciplinary forum for the discussion of novel post-CMOS and advanced nanoscale CMOS directions. The 14th NANOARCH symposium aims to incorporate several exciting sessions on emerging computing paradigms (e.g., approximate, quantum, neuromorphic, molecular, spintronic), novel nano-based computing architectures, 2D materials (e.g., graphene) nanoelectronics and computing, beyond charge-based computing, emerging memory devices and in memory computing, nanoelectronics for biomedical systems, and to provide extended opportunities for interaction among the participants.

In addition to 6-page length Regular Papers, we also invite 2-page Concept Papers presenting less developed but radical and highly innovative work in the area of nanofabrication, nanocomputing, and emerging nanosystem application.

NANOARCH 2018 topics of interest (both theoretical and experimental) include (but are not limited to):

- Novel nanodevices and manufacturing/integration ideas with a focus on nanoarchitectures,
- Nanoelectronic circuits, nanofabrics, computing paradigms and nano-architectures,
- Future and emergent nano-computing paradigms, e.g., approximate, quantum, neuromorphic, spintronic, molecular,

- Paradigms and nanoarchitectures for computing with unpredictable devices,
- Emerging memory nano-devices and in memory computing nano-architectures
- Security architectures with nanofabrics,
- Reliability aware computing,
- 2D/3D, hybrid, defect/fault tolerant architecture, integration, and manufacturing,
- Nanodevice and nanocircuit models, methodologies, and computer aided design tools,
- Fundamental limits of computing at the nanoscale.

We also invite proposals for Special Sessions, to be held during the NANOARCH 2018 to complement the regular technical program by highlighting new and emerging research topics. Special sessions proposals should be submitted by March 5th 2018, and must include: Topic Title (approx. 10 words), Organizers Name and Affiliation, Session Rationale and Outline (approx. 500 words), and Session Paper List (min. 5 papers without more than 2 per involved research group) including the author(s) affiliation(s), paper title, and abstract (approx. 100-200 words). The special session proposals acceptance notification is March 15th 2018, and the invited papers, which are part of accepted special sessions proposals, will undergo the same review process as the Regular and Concept papers.

Important Dates:

Special Sessions Proposals/Acceptance: March 5/15, 2018;

Paper submission: April 5, 2018;

Acceptance notification: May 28, 2018;

Final version: June 11, 2017;

Early registration deadline: June 11, 2018.



The 18th IEEE International Conference on Nanotechnology

| Cork, Ireland | 23-26 July 2018 | www.ieeenano2018.org

We are now open to submissions for workshops and tutorials at Tyndall National Institute, to be held on Monday 23rd July 2018, in advance of IEEE NANO 2018. If you are interested in running a workshop or tutorial in advance of IEEE NANO 2018 please send a course outline and abstract, along with any costings or logistical requirements to danny.denton@tyndall.ie.

About the Conference

IEEE-NANO is the flagship IEEE Nanotechnology conference. The conference scope spans nanoscience and nanotechnology, from nanomaterials and nanofabrication nanosensors, nanoactuators and nanoelectronics/nanophotonic devices. The thematic focus for this year's event is Nano-Enabled Smart Things: new materials, devices and systems that can benefit humanity through applications in communications, energy, healthcare, food and environment. The conference themes will encompass experimental contributions (e.g., materials development and integration, device fabrication, characterization and metrology) as well as modelling and simulation. We welcome contributions from both academic and industry-based researchers. The Conference Proceedings for IEEE NANO 2018 will be published on IEEE Xplore.

Selected contributions will be eligible for submission to a special issue of IEEE Transactions on Nanotechnology (TNANO).

Confirmed plenary speakers for IEEE NANO 2018 include:

Prof. John A. Rogers, Northwestern University

Prof. Malini Olivo, A*STAR Singapore

Prof. Clivia M. Sotomayor Torres, Catalan Institute of Nanoscience and Nanotechnology

Prof. Rong Chen, Huazhong University of Science and Technology

IEEE NANO 2018 Themes

- Nanosensors & Nanoactuators
- Materials Design & Development

- Nanoelectrochemical Sensors
 - Surface-enhanced Raman Spectroscopy
 - Piezoelectric Sensors & Actuators
 - Biophotonics
 - Nanoplasmonics & Nanophotonics
 - Nanoenergy for Smart Things
 - Materials Design
 - Energy Harvesting & Conversion
 - Energy Storage
 - Power Management
 - Materials, Devices & Architectures for Nanoelectronics
 - Brain-Inspired Circuits & Architectures
 - Resistive Random Access Memories
 - 2D Materials & Devices
 - Nanofabrication & Assembly
 - Nano-Acoustics
 - Nanophonics
 - Nanomagnetism & Spintronics
 - Nanometrology
 - Nanosafety
 - Nanoscale & Biological Communication
 - Multi-scale Simulation
- Visit www.ieeenano2018.org to register your interest!**

Important Dates

Abstract Submission & Registration Opens: 5 December 2017

Deadline for Submission of Abstracts: 28 February 2018

Notification of Acceptance: 29 March 2018

Deadline for Early Registration: 10 May 2018

Deadline for Final Papers: 31 May 2018

Conference Dates: 23 – 26 July 2018

MARSS International Conference on Manipulation, Automation and Robotics at Small Scales

MARSS, the annual International Conference on Manipulation, Automation and Robotics at Small Scales, will be held for the third time from 4 to 8 July, 2018 in Nagoya, Japan. This recently established conference has the ambition to be the flagship forum for cross-disciplinary R&D communities to discuss current activities related to manipulation and automation (including measurement and characterization) at micro and nano scales, and in all kinds of small scale robots and their applications.

The submission deadline is extended until March 10th, 2018 (22:00 GMT, Greenwich Mean Time)

As the paper submission deadline for 2018 International Conference on Manipulation, Automation and Robotics at Small Scales, MARS-S2018, <http://marss-conference.org>, coincides with the Chinese New Year holiday, the MARSS2018 Organization Committee has decided to keep MARSS2018 submission site open until March 10th.

MARSS 2018 NAGOYA Nagoya, Japan July 4 – 8, 2018

This date is the final deadline for all submissions (regular papers, Special session proposals, and papers invited to Special sessions). Further extension is definitely not possible due to the very tight schedule.

Please note that Call for Late News papers (short papers ONLY, up to 3 pages, no inclusion into IEEEExplore) will be open later, from 02-15 May, 2018.

Submission of full or short papers:	March 10, 2018
Special Session proposals:	March 10, 2018
Notification of paper status:	March 31, 2018
Submission of final accepted papers:	April 15, 2018
Registration for accepted papers:	April 15, 2018

NMDC 2018

The 2018 IEEE 13th Nano Materials & Devices Conference (NMDC 2018) will be held in Portland, Oregon, USA on 14-17 October, 2018 at the Embassy Suites Downtown hotel.

The NMDC 2018 conference will bring together key researchers from every sector in the nanotechnology research field, with a special focus on Materials and Devices.

For more details visit: www.ieeenmdc.org/nmdc-2018

NMDC 2018 is soliciting papers and special sessions on Materials and Devices for heterogeneous Nanoscience and Nanotechnology systems in these areas:

Materials & devices for:

Nanoelectronics, e.g. SETs, memristors, QCAs, NanoCMOS
 Nano-Optics/Photonics/Optoelectronics
 Metamaterials & Plasmonics
 Energy harvesting and storage
 MEMS/NEMS
 Spintronics
 Nano-Biomedicine
 Nanorobotics and nanomanufacturing
 Nanonetworks

Properties, Fabrication and applications of

Graphene, CNTs, Nanodiamond and Nanowires
 Semiconductors, e.g. Organic, Oxides, III-V
 2D Materials (MoS₂, hBN, etc)
 Nanosensors and Nanoactuators
 Quantum dots & Nanoparticles (0-D)
 Nanomagnetism and Passive Devices
 Thin Films and Nanocomposites

Special Applications

Nano-fluidics and integrated bio-chips
 DNA Nanotechnology
 Nano-Metrology/Characterization
 Nanopackaging and Interconnects in nano-chips
 Environment, Health & Safety

Nanotechnology, Nanostructures and Nanosystems

Interconnects, packaging and reliability of nano-chips
 Reliability and other thermal issues in nano-structures and nanosystems
 Standards and safety issues of nanotechnology
 Synthesis and modification

Modeling and simulation of nano-materials, nanostructures and nanodevices

Emerging topics related to nanomaterials, nanodevices and nanostructures

Education in nanotechnology

Selected papers will be invited for submission to the IEEE Transactions on Nanotechnology and the IEEE Nanotechnology Magazine in expanded or otherwise modified form as part of a special issue/section on IEEE NMDC2018.

Important dates

Last date for Special Session proposals:	May 1, 2018
Last date for Abstract:	May 30, 2018
Last date for Special Session papers submission:	June 11, 2018
Last date for Review Paper submission:	June 11, 2018
Authors notification:	July 25, 2018



IEEE International Conference on Rebooting Computing (ICRC 2018)

7-9 November 2018 • Washington, DC, USA

The 3rd IEEE International Conference on Rebooting Computing (ICRC 2018) will be held November 7-9 in Washington DC. ICRC is a premier venue for novel computing approaches, encompassing all aspects of the computing stack. The broad scope of ICRC extends to many areas of interest to NTC members, including novel device physics and materials for post-CMOS computing paradigms. NTC members are encouraged to consider submitting their work on exploratory nanodevices, nanocircuits, and nanocomputing architectures to this vibrant interdisciplinary conference.

ICRC grew out of the IEEE Rebooting Computing Initiative (RCI), which was founded in 2012 to catalyze rethinking of the computer at all levels of the technology stack. The Rebooting Computing Committee represents NTC and thirteen other IEEE Societies and Councils, and membership in the Rebooting Computing Technical Community is approaching three thousand. For more information on the RCI—and on many technology developments and activities relevant to the future of computing—please visit the Rebooting Computing Portal (rebootingcomputing.ieee.org).

Call for Papers

3rd IEEE International Conference on Rebooting Computing

Part of IEEE Rebooting Computing Week 7-9 November 2018, Washington, DC. Now in its 3rd year, the IEEE International Conference on Re-

booting Computing is the premier venue for novel computing approaches, including algorithms and languages, system software, system and network architectures, new devices and circuits, and applications of new materials and physics. This is an interdisciplinary conference that has participation from a broad technical community, with emphasis on all aspects of the computing stack.

General Chair: Erik P. DeBenedictis, Sandia National Laboratories

Program Chair: Tom Conte, Georgia Institute of Technology

Full committee list at <http://icrc.ieee.org/committee>

Authors' guidelines at <http://icrc.ieee.org/authors-guidelines>

Important dates

Paper abstract submissions due: 30 April 2018 at 11:00pm EDT

Paper submissions due: 7 May 2018 at 11:00pm EDT

Author notification of acceptance: 8 August 2018

Poster abstract submissions due: 15 August 2018 at 11:00pm EDT

Poster notification of acceptance: 6 September 2018

Final copies of papers due: 6 September 2018 11:00pm EDT

Journal Highlights



Also this year as the flagship publication of the IEEE Nanotechnology Council (NTC), I am pleased to report that the IEEE Transactions on Nanotechnology (TNANO) has achieved new heights across all endeavors of operation.

2017 is the third consecutive year with record numbers in terms of number of submissions; moreover, selectivity has remained nearly constant, so confirming that TNANO has reached an excellent level of overall scholarship. In quantitative terms, Manuscript Central Scholar One reports the following very impressive statistics for the 2017 calendar year (the data for 2016 is reported between parentheses):

Number of regular manuscript submissions: 797 (758)

Number of "Letter" submissions: 124 (0)

Total number of submissions: 921 (758)

Acceptance rate: 31% (28%)

Rejection rate: 50% (54%)

Revise-and-resubmit rate: 19% (18%)

My sincere thanks goes to all constituencies of TNANO for such an accomplishment: the readers, supporters, contributors, reviewers and the Editorial Board; an additional and special acknowledgment for her day-by-day support in all operations is owed to the TNANO Periodical Assistant, Ms. Jessica Alcorn of Allen Press.

In qualitative terms, I am pleased to announce a new impact factor (IF) of 2.485 as reported by the 2016 Journal Citation Report published by Clarivate Analytics (2017). This represents a 46% increase from the 2015 IF, upholding TNANO's status as one of the leading peer-reviewed engineering journals in the field of nanotechnology.

As a top-tiered periodical, every submission to TNANO is professionally evaluated; decisions by the Editorial Board are based on an in-depth review and scrutiny. TNANO strives for the highest technical excellence with a very selective acceptance rate; so under these tight requirements, not all submissions can be published. Therefore, an outcome of the review process is both an acknowledgement and encouragement to the authors (as our most important community) to continue to strive for the highest technical achievements.

Here there are few additional highlights/news:

2017 saw the reinstatement of the category "Letters" for manuscript submission to TNANO; a "Letter" is at most 4 page long (inclusive of figures and bibliography in the required two-column IEEE format). 124 submissions were received under the category "Letter" in 2017 for both regular and Special Issue manuscripts. A "Letter" follows the same competitive and peer-reviewed criteria as a regular manuscript submitted to TNANO. Even though only partial data is currently available at this early date, the average delay of a 2017 "Letter" submission (regular manuscript with delay from submission to first decision) stands at 22 days.

A graphical abstract is now required for each accepted manuscript when the final files are submitted. Please adhere to this policy so not to further delay the publication of an accepted manuscript. All specifications and details for the TOC Graphical Abstract can be found at

<http://sites.ieee.org/tnano/toc-graphical-abstract/>

As TNANO is closely aligned with the other technical activities of the IEEE NTC, Special Issues and Sections consisting of selected and expanded manuscripts presented at the two flagship NTC-sponsored events (IEEE NANO and NMDC 2017), are in progress; I expect 2018 to continue to yield Special Issues for these events as well as additional Special Sections covering themes and areas of interest to nanotechnology.

In 2017, TNANO successfully passed the comprehensive and periodic review by IEEE so meeting all periodical criteria for full compliance in operation under the strictest technical and ethical requirements.

In addition to its own web site (found at <http://sites.ieee.org/tnano/>), news about TNANO also appear in the Nanotechnology Newsletter (<http://sites.ieee.org/nanotech/newsletter/>). The IEEE Nanotechnology Newsletter provides a summary of the latest news and is also sent to those on the IEEE NTC mailing list to provide information on related publications, conferences, opportunities, events, and developments in nanotechnology and applications.

The award for the best paper published in 2016 in TNANO was presented at NANO 2017 in Pittsburgh to Yasunao Katayama, Toshiyuki Yamane, Daiju Nakano, Ryosho Nakane and Gouhei Tanaka for their manuscript titled "Wave-Based Neuromorphic Computing Framework for Brain-Like Energy Efficiency and Integration".

Finally, I would like to remind and clarify few items of operational nature that authors should be familiar.

As detailed previously, IEEE TNANO is a peer-reviewed periodical sponsored by the IEEE NTC. Therefore, TNANO must comply with the scope and technical objective of its sponsoring Council; TNANO will not expand its publication activities in areas already well and clearly covered by other IEEE societies/journals. This policy is based on ethics and a collegiate behavior that the IEEE expects from all editors and volunteers. Moreover, submissions to TNANO should be focusing on nano-engineering and technology rather than on nano-science. The assessment of such in-scope requirement is made at the earliest by considering the technical contents (and provided bibliography) of a submission, so that authors are promptly notified without causing unnecessary delay.

All contact authors must be specified as part of the submission process of a manuscript. If this information is not provided, regrettably a submission will be voided using an administrative reject decision.

I remind prospective authors that a previously rejected paper to TNANO cannot be resubmitted; only papers declined under the "revise-and-resubmit" category can be resubmitted to TNANO for further consideration under an additional round of review (multiple rounds under "revise-and-resubmit" decisions are highly discouraged).

Submitted articles must not have been previously published, or currently submitted for journal publication elsewhere. An extended version of an article appearing in any conference proceedings can be submitted, provided that it has substantially new content with respect to the original conference version. The conference paper must be cited in the main text and the cover letter (or additional documentation) must clearly describe the differences with the conference version and clearly identify the new contributions. Manuscripts that exceed the threshold of similarity with already published articles (as found by tools provided by the IEEE) will be administratively rejected, so not allowed to be resubmitted to TNANO. All authors are responsible for understanding and adhering to the submission guidelines of TNANO.

Over the last year, I have received many emails from potential authors asking for an assessment of the suitability of their manuscript based only on the title and abstract and prior to a formal submission. Such request is not contemplated in my role as EIC and is contrary to IEEE regulations, because a manuscript cannot be evaluated based on such limited information. Hence, be advised that such requests will not be met.

2018 already looks as an exciting year; overall, TNANO continues to show a remarkable growth to sustain a multi-year momentum in technical excellence. Therefore, I expect with confidence that the Editorial Board will be further enlarged with outstanding colleagues, so that the increase in number of submissions will not cause an undue burden to the editors, volunteers and reviewers.

As always, I am available to answer questions pertaining to TNANO. Also do not hesitate to contact Ms. Alcorn, for non-editorial matters; she can be reached at jalcorn@allenpress.com.

I really appreciate your support and look forward to work closely with all of you in 2018 and continue to further improve TNANO in the months ahead.

Fabrizio Lombardi,

Editor-In-Chief, IEEE TNANO,

Northeastern University

Boston, MA 02115 USA



Aims & Scope

The scope of *IEEE Nanotechnology Magazine* is all aspects of nanotechnology including theory, analysis, design, implementation, and applications related to creation of materials, devices, structures, etc. by manipulating matter at the nanometer length scale and taking advantage of novel (physical, chemical, electrical, mechanical, optical, magnetic, biological) properties which arise solely due to the nanometer scale. Contents are written at a general level aimed at a broad audience. The magazine publishes articles covering new research and developments toward a broad audience, tutorials, and surveys in the field of nanotechnology in addition to industry news, research news, education news, policy news, opinion pieces, book reviews, updates on people, introduction to new tools and techniques, funding and meetings news, patent summary, and commercialization.

Persistent Link: <http://ieeexplore.ieee.org/servlet/opac?punumber=4451717>

Frequency: 4

Published by: IEEE Nanotechnology Council

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Components, Circuits, Devices & Systems

Computing & Processing

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IEEE—Nanotechnology Council's Social Media : Official Facebook page



Dear friends,

I am elated to welcome you all to our official IEEE Nanotechnology - Facebook page (<https://www.facebook.com/groups/550239578466583/>).

This group serves as a dedicated platform for researchers all over the world to connect and communicate nanotechnology and nano science.

Now the IEEE Nanotechnology FB group has very rich contents with active interactions among members from around the world. There are more than 5,750 members now. We can aim at exceeding 10,000 members within this year.

I would encourage the group members to actively take part in promoting research and development in addition to other valuable information such as conference details and science jobs.

Please feel free to join the group and add your fellow research members in order to expand the scientific network.

Thank you for your kindly support.

Warm Regards,

Jr-Hau He

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Call for Nominations for NTC Chapter of the Year Awards-2018

CALL FOR NOMINATIONS for: IEEE NANOTECHNOLOGY COUNCIL (NTC) CHAPTER OF THE YEAR AWARD

The IEEE Nanotechnology Council (NTC) Chapter of the Year Award is intended to encourage a successful and effective overall performance of the Chapter in terms of its activities. Exemplary Chapters must have a high number of activities and creativity. The Chapter must consistently be active in organizing activities throughout the year.

Eligibility. All existing/established IEEE-NTC Chapters are eligible for this award.

Prize Items. **The award consists of \$500 and a certificate.**

Selection/Basis for Judging. The award is based on the best yearly activities in the categories of Chapter-sponsored technical activities, seminars, workshops, conferences, visits etc. Other key requirements of the award are:

- Timely updates and reporting of Chapter officers and activities
- Minimum of (4) meetings/programs during the year
- Maintain an up-to-date Chapter Web site

Other activities may include:

- Engagement with student activities
- Joint activities with other member society chapters

- Chapter visits to local industry/institutions
- Member advancement/recognition
- Membership growth efforts

All nomination materials must reach the NTC Awards Committee by March 31st, 2018. Nominations may be made by any full IEEE member, or by a representative of the nominee chapter. Chapter awards will be announced by May 31st, 2018, and will be presented at a mutually agreed venue, e.g., the annual IEEE International Conference on Nanotechnology (sponsored by NTC). Chapter Nomination Form can be downloaded here.

<http://sites.ieee.org/nanotech/awards/>

For further information, please contact the Awards Committee Chair:

Professor Joseph Lyding

Chair, IEEE NTC Awards Committee

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IEEE Summer Schools-2018

For the year of 2018, IEEE-NTC sponsors two Summer schools;

(i) organized by IEEE NC-SC Joint Student Chapter, Centre for Nano Science and Engineering (CeNSE), Indian Institute of Science (IISc) Bangalore, India (dates to be confirmed).

(ii) organized by State Key Laboratory of Electrical Insulation and Power Equipment, Xi'an Jiaotong University, China (dates to be confirmed).

Stay tuned for the detailed updated on the summer schools in the IEEE-NTC website. <http://sites.ieee.org/nanotech/>

(i) More details about the workshop at Centre for Nano Science and Engineering (CeNSE), **Indian Institute of Science (IISc) Bangalore, India**

The aim of this summer school is to provide a platform for interested students/professionals to interact and learn about the latest developments in the field of nanotechnology. The program will consist of lectures, poster sessions, hands on workshops, panel discussions and industrial-affiliate talks. The dedicated topics for summer school are: Nanomaterials, Nanoelectronics, Nano-photonics, NEMS/MEMS, Nano-biotechnology.

The faculty organizers team include Prof. Navakant Bhat, Head of the Chapter, in addition with other faculty members including Prof. S.A. Shivshankar, Dr. Akshay Naik and Dr. Sanjeev Kumar Shrivastava. CeNSE at IISc, India houses a state-of-the art national nanofabrication centre (NNfC) with 14,000 square feet of class 100/1000 clean room. It also houses a comprehensive micro nano characterization facility (MNCf) to conduct virtually any type of electrical, optical, mechanical and material characterization. The hands-on sessions will be a great addition to the arsenal as they will help cement the understanding and interests of the participants. The participants will also be exposed to Nano-fabrication and characterisation techniques in our own centre. This will also include a daily practical hands-on session. This will enable the summer school participants to attain a much greater understanding of the concepts.

(ii) More details about the workshop organized by the State Key Laborato-

ry of Electrical Insulation and Power Equipment, **Xi'an Jiaotong University, China.**

School topic: "Nanomaterials for energy"

List of potential presenters includes;

Michel Fréchette, XJTU, CHINA (School Organizer),

Stephen Goodnick, Arizona State University, USA (School Organizer),

Shentao Li, XJTU, CHINA (School Organizer),

Masahiro Kozako, Kyushu University, JAPAN

Prof. H. Mutoh, JAPAN,

Xingyi Huang, Shanghai Jiaotong University, CHINA,

Jun-Wei Zha, USTB, Beijing, CHINA,

Alice Zhang, Beijing, CHINA

Nicola Bowler, Iowa State U., USA

Xi'an Jiaotong University, one of the top 10 key state universities, is directly under the administration of the Ministry of Education of China and aims at developing into the world famous high-level research university. Xi'an Jiaotong University is a comprehensive research university offering programs in 10 areas- science, engineering, medicine, economics, management, literature, law, philosophy, education and art - with a major emphasis on science and engineering, consisting of 26 schools. Xi'an Jiaotong University has made great efforts to develop international communication. Since 2000, XJTU has established cooperation with 145 universities and research institutions from 42 countries and areas including America, Japan, Britain, France, Germany, Italy, Singapore, Korea. The number of international students has also boosted. Today there are 1,992 international students from 86 different countries studying at the campuses. More details are provided on the website: <http://www.xjtu.edu.cn>.