



**IEEE Nanotechnology Council**  
Newsletter | December 2019



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### **Keep Up With Us**



## **Editor's Note**

This issue brings you the latest updates and activities in the IEEE-NTC community. 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***

City University of Hong Kong  
EiC Newsletter & Web Content

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## **NTC News**

**President Report by Yonhua (Tommy) Tzeng for the IEEE NTC ExCom, Dec. 1, 2019**



As my term as NTC President comes to an end, I would like to thank you all for your generous contributions of precious time to make all the great accomplishments we collectively achieved this year! Thank you!

In less than one month, several officers and committee chairs will have their terms expire. I would like to take this opportunity to thank all the volunteers on behalf of IEEE NTC and welcome new volunteers to join the leadership team.

Without having individual members as Societies do, one of the most important issues we face is how to invite as many enthusiastic volunteers as possible to become active members of the NTC community.

Many aspects of NTC operation have been changed for good reasons.

1. NTC has a professional part-time administrative assistant. The effectiveness has been continuously improving in the past two years.
2. A new VP for Educational Activities has been appointed and we thank Arun's contributions as the first VP Education.
3. A new journal, IEEE OJ NANO, has been successfully launched with the first batch of papers to be published in January 2020.
4. A successful new initiative was launched to transform the already successful INM into a magazine with much richer content in anticipation of a respectful impact factor in 2-3 years.
5. The Conference Ad Hoc Committee has played an important role in mentoring and guiding major NTC conferences.
6. The NPS Society joined NTC effective January 1, making 23 member Societies.
7. Co-EIC(s) have been introduced in all NTC publications, as part of my wish to bring in as many as possible volunteers to the NTC leadership team, expand the NTC community, and broaden the scope of NTC technical specialties.
8. Many TCs have been mobilized with some new TC chairs being appointed.
9. Several new partially sponsored conferences were approved.
10. Many new chapters around the world have been established.

**Tommy**

## 2020 IEEE Fellows

Hearty congratulations to the following outstanding members of the NTC community on being elevated (effective Jan 1, 2020) to the rank of Fellow of IEEE!

**Osamu Tabata**

*"for contributions to the development and commercialization of micro electro mechanical systems"*

**Tza-huei Wang**

*"for contributions to micro- and nano-technologies for biomedical applications"*

Click [here](#) for a list of IEEE Fellows of the Nanotechnology Council.

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## Election Result VP Educational Activities 2020-21

The Nanotechnology Council is pleased to announce the winner of the special election for VP Educational Activities is John Yeow.

Prof. Yeow has been involved with NTC activities in different capacities since 2006. He was the Editor-in-Chief for the IEEE Nanotechnology Newsletter (2010-2012), and the IEEE Nanotechnology Magazine (2014-2019). Furthermore, Yeow was a NTC Distinguished Lecturer (2017-2018), and a General Chair of the IEEE NANO 2014 in Toronto, Canada. More recently, he served as the Program Chair for IEEE NANOMED 2019 in Gwangju, South Korea and IEEE NEMS 2019 in San Diego, USA.



Yeow's plans as VP include establishing a stronger and sustainable relationship between the NTC Distinguished Lecturer (DL) program with NTC

chapters around the world. Working with TC chairs so that they can actively participate in tutorial organization at NTC conferences and summer schools. This active participation will increase their TCs' exposure to the nano community which will, in turn, increase their membership and revitalize the leadership. And proactively reaching out to NTC chapters to support and promote educational activities such as nanotechnology engineering outreach programs.

Click [here](#) for more details.

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## Call for Proposals Extended Future Sites for IEEE NANO 2022

**Extended deadline 15 January 2020**

The annual IEEE International Conference on Nanotechnology is the NTC's flagship event. The conference scope covers a wide range in nanoscience and technology. In particular, it covers nanofabrication, nanomanufacturing, nanomaterials, nanobiomedicine, nanoenergy, nanoplasmonics, nanoelectronics, nanosensors and nanoactuators, characterisation and modelling of nano structures and devices. Research in both experiments and simulation is reported. Industry is encouraged to present its research projects. NANO 2020, which will be held in Montreal, Canada.

We are now seeking proposals for **NANO 2022** which is expected to run in IEEE Regions 10 (Asia). NANO should be run at the end of July, preferably in the last week.

For conference history see <https://ieeenano.org/ieee-nano-conferences/>.

For information on submitting a proposal, click [here](#).

Contact NTC VP Conferences [Lixin Dong](#) with any questions.

**Extended deadline 15 January 2020**

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## Call for Nominations Extended 2020 IEEE NTC Distinguished Lecturers

## **Extended deadline 15 January 2020**

The IEEE Nanotechnology Council is seeking nominations for distinguished lectures. The NTC has created a **distinguished lecturers program** to enhance the visibility of NTC among nanotechnology societies. The NTC Distinguished Lecturers are appointed to honor excellent speakers who have made technical, industrial or entrepreneurial contributions of high quality to the field of nanotechnology and science, and to enhance the technical programs of the Nanotechnology Council chapters and conferences. Consideration is given to having a well-balanced variety of speakers who can address a wide range of topics of current interest in the fields covered by the Society.

The term for the Lecturers is from January 1 until December 31 of 2020. The Lecturers serve for a one year term, and may be reappointed for one additional year with approval of the NTC Distinguished Lecturer Committee. A budget will be provided each Lecturer to give lectures for NTC Chapters and NTC Conferences based on availability of funding through the NTC. DLs are expected to give a minimum of 2 lectures per year as part of their commitment to serve.

Click [here](#) for additional information and to submit a nomination.

## **Extended deadline 15 January 2020**

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## **Publications**

### **Appointments**

## **Editor-in-Chief 2020-21**

**The IEEE Nanotechnology Council (NTC) is pleased to announce the new Editor-in-Chief and Co-Editor-in-Chief for the following Publications**

### ***IEEE Nanotechnology Magazine (INM)***

We are excited to announce the appointment of Bing Sheu as Editor-in-Chief and Xiaoning Jiang as Co-Editor-in-Chief of INM for 2020-2021.

#### **Prof. Bing Sheu, Chang Gung University**

Chair Professor in Electronics & Engineering Department

Chair Professor in Information Management Department

IEEE Fellow

**Prof. Xiaoning Jiang, North Carolina State University,**

Distinguished Professor of Mechanical and Aerospace Engineering  
University Faculty Scholar at North Carolina State University and University of North Carolina

***IEEE Transactions on Nanotechnology (T-NANO)***

NTC is delighted to inform you of the appointment of Sorin Cotofana as Editor-in-Chief and Chengkuo (Vincent) Lee as Co-Editor-in-Chief of T-NANO for 2020-2021.

**Prof. Sorin Cotofana, Delft University of Technology**

Associate Professor with the Faculty of Electrical Engineering, Mathematics, & Computer Science  
IEEE Fellow

**Prof. Chengkuo (Vincent) Lee, National University of Singapore**

Director of Center for Intelligent Sensors and MEMS  
Associate Professor for the Department of Electrical & Computer Engineering

***IEEE Transactions on NanoBioscience (T-NB)***

We are pleased to announce the appointment of Dan Nicolau as Editor-in-Chief of T-NB for 2020-2021.

**Prof. Dan V Nicolau, McGill University**

Chair of the Department of Bioengineering  
Endowed Professor of Engineering

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***Now Open for Submission:***  
**IEEE Open Journal of Nanotechnology**

IEEE Nanotechnology Council (NTC) is launching a new gold fully open access journal, Open Journal of Nanotechnology (OJ-NANO), spanning the full scope of the IEEE NTC's fields of interest. The new journal, which will be fully compliant with funder mandates, including Plan S, will begin accepting



submissions in fall 2019 and publish its first articles in early 2020. The new journal will have an independent editorial board, an established peer review process, and an accomplished expert as editor-in-chief.

For more information or to submit to OJ-NANO please visit <http://iee-oj-nano.org/>.

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## Chapters

### Chapter News

The IEEE Nanotechnology Council (NTC) is expanding worldwide through the addition of new chapters to now total of 27 active chapters. So far during 2019 chapters have been added in the Chengdu China Section, the Western Saudi Arabia Section, the Chicago Section, the Oregon Section and the Victorian Section in Australia. This growth follows on the addition of two chapters in 2018 and seven in 2017.

Do you have a Chapter near you? For the current list see the [Chapters](#) page.

Student chapters have grown to now total 10 with new student chapters being added so far during 2019 in the Uttar Pradesh India Section at the Pranveer Singh Institute of Technology and in the Delhi India Section at the Academy of Scientific Research Chandigarh.

More are in the petition path towards becoming chapters in sections in other areas of Australia, Romania, Italy, and China. The NTC leadership has been cooperating in this growth emphasis by locating and encouraging contacts in

their networks to initiate formation petitions. More areas in the world are becoming involved in nanotechnology-related science, engineering and study and interested organizers are welcomed to file petitions to form chapters at [https://www.ieee.org/communities/forms\\_petitions.html](https://www.ieee.org/communities/forms_petitions.html).

Startup funding was provided by the NTC to many of the chapters formed in the last few years to help them quickly organize activities and events. For example, the Chicago chapter's initial focus is on holding a networking event with local startups and companies involved in Nanotech in the Chicago area along with a tour of local facilities such as Argonne National Lab for undergraduates and graduates in the local universities. The Delhi India Section at the Academy of Scientific Research Chandigarh held a workshop on Machine Intelligence and Deep Learning and also a Poster Paper Competition. In Australia, a retreat supporting women in STEM focused on early career grant & paper writing. At the new Oregon chapter a three speaker symposium is scheduled for early December.

Chapter support funding has become available to existing chapters as well, and interested chapters only need to inquire by sending a general proposal to **Nick Massetti**, Chair of the NTC Chapters Committee. If you would like to form a local NTC chapter, click [here](#) for more information.

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## Chapter Activity - ECWR2019

With the support of 8 excellent sponsors and 6 outstanding mentors, the ECWR2019 event held at the Australian National University on 21-23 October was a successful event having a positive influence on the career development of 15 ECR women in Australia. The ECR attendees had the opportunity to receive advice from a carefully chosen group of highly successful academics on how to apply for grant funding and write high impact articles. As well as receiving insights into intellectual property, and coaching on time management and leadership.





# Conference Highlights

For full details on any of the 2019 NTC conferences, visit <https://ieeenano.org/conferences/conferences-2019/>.

## IEEE NANO 2020



**Website: [2020.ieeenano.org](https://2020.ieeenano.org)**

**Abstract Submission Information can be found [here!](#)**

The 20th IEEE International Conference on Nanotechnology (IEEE-NANO 2020) will be held from July 29-31, 2020, at the **Hotel Bonaventure**, Montreal.

The IEEE-NANO 2020 is now calling for the **first round submission**. Please access the submission system by this link: <http://nano.papercept.net/conferences/scripts/start.pl>.

Authors should submit an abstract (2 pages) for review; however, if you wish to participate in the best paper contests, you **MUST** submit a full paper (4 to 6 pages) for review.

### **Key dates for abstract and paper submission**

- Abstract Submission: **January 24, 2020**
- Acceptance: **March 2, 2020**
- Final Manuscripts: **May 6, 2020**

For more information, click [here](#).

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## IEEE-NEMS 2020



**Website: <https://ieee-nems.org/2020/>  
Abstract Submission**

The 15th IEEE International Conference on Nano/Micro Engineered & Molecular Systems (IEEE-NEMS 2020) will be held from April 20-24, 2020 in San Diego, USA.

IEEE-NEMS is a premier conference series sponsored by the IEEE Nanotechnology Council focusing on the promotion of advanced research areas related to MEMS, nanotechnology, and molecular technology.

### Important Dates

- Two-Page Abstract Deadline **EXTENDED: December 22, 2019**
- Notification of Acceptance: **January 20, 2020**
- Full-Paper Submission Deadline: **February 20, 2020** (*Only required to publish papers in Xplore*)
- Early Bird Registration: **February 20, 2020**

For more information, click [here](#).

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## MARSS 2020

**Website: [marss-conference.org/](http://marss-conference.org/)**  
**Call for Papers**

The 5<sup>th</sup> International Conference on Manipulation, Automation and Robotics at Small Scales (**MARSS**) is held from July 13-17, 2020 in Toronto, Canada. **MARSS2020 Organization Committee** is headed by General Chair: Yu Sun (CA), General Co-Chairs: Eric Diller (CA) and Xinyu Liu (CA), Program Chairs: Bradley Nelson (CH) and Mohammad Qasaimeh (AE). The conference is technically supported by IEEE-NTC and IEEE-RAS. MARSS is the flagship forum for cross-disciplinary R&D communities related to manipulation and automation (incl. measurement and characterization) at micro/nano scales as well as all kinds of small scale robots and their applications. The expected number of participants is about 250-300.

We cordially invite you to attend and contribute to the conference. The conference will feature 12-15 **Plenary talks**, 35-40 technical sessions (oral presentations), and a poster session. Full papers (5-6 pages) or short papers (1-3 pages) on MARSS-related topics are **invited**. Accepted full papers will be presented (20 min) in the technical sessions. Accepted short papers will be presented in the poster session. Some of high-quality short papers may be recommended for an oral presentation in a technical session. Presented full papers will be submitted to the IEEE *Xplore*® digital library. Selected full papers will be recommended to Journal of Micro-Bio Robotics (Springer Nature) for publishing a Special Issue.

Please consider organizing a Special Session at MARSS2020. You may check the website for **details**. Organization of a Special session (at least 5 registered presentations required) will be acknowledged by appreciation allowance.

**Important Dates:**

- Full paper submission (5-6 pages):  
**February 16, 2020** (*no extension possible*)
- Short paper submission (1-3 pages):  
**May 15, 2020** (*no extension possible*)
- Special session proposals:  
**February 16, 2020** (*speakers with full paper submission*)  
**May 15, 2020** (*speakers without full paper submission*)

For more information, click [here](#).

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For details on the 2020 NTC conferences, visit <https://ieeenano.org/conferences/conferences-2020/>.

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## NANO News

# KidneyX Phase 2 Redesign Dialysis Competition

**KidneyX launches \$1.5 million Phase 2 of prize competition to redesign dialysis**



On November 18, 2019, the U.S. Department of Health and Human Services (HHS) and the American Society of Nephrology (ASN) launched the second phase of **KidneyX: Redesign Dialysis**, a prize competition that seeks to transform kidney care. Redesign Dialysis is part of

a series of KidneyX prize competitions to catalyze the development of innovative solutions that can prevent, diagnose, and treat kidney diseases.

**Redesign Dialysis Phase 2** seeks prototype solutions, or components of solutions, that can replicate normal kidney functions or improve dialysis access. Participants may compete in the second phase even if they did not submit a solution in the first phase. Prototypes should address at least one of the following areas: blood filtration, electrolyte homeostasis, volume regulation, toxin removal and secretion, filtrate drainage and connectivity, and dialysis access.

**The competition calls on researchers, innovators, patients, and investors with expertise in nephrology, biotechnology, bioengineering, and medical devices to [submit solutions](#) by 5:00 p.m. ET on January 31, 2020.**

Up to three winners will each be awarded \$500,000. Participants can find more information, including the submission requirements, judging criteria, and eligibility, in the [prize announcement](#) (PDF).

Phase 2 quick facts:

- Who should submit? Phase 2 is open to new solvers as well as Phase 1 participants. The competition calls on experts in nephrology, biotechnology, bioengineering, medical devices, mechanical engineering, and more.
- *Non-U.S. citizens and nonpermanent residents can participate as a member of a team that otherwise satisfies the eligibility criteria but will not be eligible to win a monetary prize (in whole or in part).*
- Seeking early prototypes. The prototype can be the first iteration, as long as it's a testable device.
- \$1.5 million in prizes. Up to three winners will each be awarded \$500,000.
- Deadline. **Submissions are due** by 5:00 p.m. ET on January 31, 2020.

Phase 1 recap:

The first phase received 165 submissions that included innovations in vascular access, fluid filtration, and biosensors. The **15 Phase 1 winners** each received \$75,000.