



## Newsletter | December 2022

### Editor's Note

Welcome to the December 2022 issue of the *Nanotechnology Council Newsletter*. This issue brings you the latest updates and activities in the IEEE-NTC community. We hope you enjoy it and do let us know if there is any topic you'd like to see covered in the future. All future content submissions to the newsletter should be sent to the new Editors: Yijun Cui and Ke Chen.



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## BREAKING NEWS

### Former NTC President Named as Fellow of National Academy of Inventors



Tommy Tzeng (NTC President 2018-2019) has been inducted as a Fellow of the National Academy of Inventors (NAI). Election as an Academy Fellow is the highest professional distinction awarded to academic inventors.

The 2022 NAI Fellow class hails from 110 research universities, governmental and non-profit research institutions worldwide. They collectively hold over 5,000 issued U.S. patents. Among the new class of Fellows are members of the National Academy of Sciences, Engineering and Medicine; Fellows of AAAS; and other prestigious organizations; Nobel Laureates; other honors and distinctions as well as senior leadership from universities and research institutions. Their body of research and entrepreneurship covers a broad range of scientific disciplines involved with the technology transfer of their inventions for the benefit of society.

The 2022 class of Fellows will be honored and presented with their medals at the 12th Annual Meeting of the National Academy of Inventors on June 27th, 2023 in Washington, DC.

The NAI Fellow program has 1,567 Fellows worldwide representing more than 300 prestigious universities and governmental and non-profit research institutes.

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## **Transactions on Nanotechnology Editorial Board Members Call for Nominations**

*Transactions on Nanotechnology* (T-NANO) is soliciting editorship nominations for joining its Editorial Board as Associate Editor (AE) or Senior Editor (SE).

Editors (Associate and Senior) must show technical expertise in nanotechnology and commitment to collegiately work within the T-NANO Editorial Board (EB) to oversee and secure an objective and smooth paper review process under the Nanotechnology Council framework.

SEs and AEs serve for three years and the appointments are not renewable without a separation period. In special cases, EB members may be asked to serve for an additional, fourth year. During the first months of their appointments, newly-appointed SEs and AEs will closely work with the Editor in Chief and the Journal Administrator.

Nominations (self-nominations are accepted) of academia, industry, and government representatives are welcome. To nominate someone else or yourself, please send nominee name, affiliation, a brief statement of research interests (including 5-10 keywords), and CV to Sorin Cotofana at [s.d.cotofana@tudelft.nl](mailto:s.d.cotofana@tudelft.nl) by **15 January 2023**.

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## **NTC Young Professionals Team wins the IEEE Young Professionals Hall of Fame Award**

The accomplishments of the NTC Young Professionals have been recognized on the IEEE-wide scale and the group has been awarded with the IEEE Young Professionals Hall of Fame for activities in 2021. The justification emphasizes that the activities and initiatives stood out from the others, and were recognized as great contributors to the young generation of engineers and scientists in the Nanotechnology Council and IEEE overall. During the evaluation, the referees recognized the exemplary vitality of the group measured in the amount and quality of organized activities. These activities have an essential impact on the Young Professional community. The jury also recognized a vibrant collaboration with other IEEE units in order to facilitate the engagement of members of all grades. Finally, the inspiring concept of the Nanotechnology Marathon has been recognized as a cherry on the top of the cake.

Congratulations to our NTC YP Team led by Rafal Sliz, for the hard work and dedication!

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## **NTC Fellows Class of 2023**

Congratulations to the new NTC IEEE Fellows elevated at the November Board Meeting.

### **Ali Javey**

for contributions to 1D and 2D semiconductor transistors and wearable biochemical sensors.

### **Xiaoning Jiang**

for contributions to ultrasound transducers for advanced sensing, imaging, and therapy.

### **Andras Kis**

for contributions to the development of 2D materials and electronic devices.

### **Qiangfei Xia**

for contributions to resistive memory arrays and devices for in memory computing.

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## **IEEE Commits its Hybrid Journals Portfolio to Transformative Journal Status Under Plan S**

IEEE has committed its full portfolio of more than 160 hybrid journals, which publish both open access and subscription-based content, to become Transformative Journals under Plan S.

This commitment means that any authors receiving research grants from Coalition S, a group of research funders, are compliant with Plan S requirements when publishing their research articles in any IEEE fully open access or hybrid journals. In addition to the existing direct open access agreements with hundreds of institutions, all of IEEE's hybrid journals (including [TNANO](#)) now qualify as 'Transformative Journals' under Plan S.

IEEE has worked directly with the leadership of Coalition S to ensure compliance with the Plan S criteria for transformative publications. Under this criteria, a Transformative Journal is a subscription/hybrid journal that is committed to eventually transition to a fully OA journal over time. In addition, it is required to gradually increase the share of OA content and offset subscription income from payments for publishing services. More details on the Coalition S criteria for Transformative Journals and the open access publication targets for each IEEE transformative journal can be found [here](#).

The Nanotechnology Council's fully open access ('gold') journal, the IEEE Open Journal of Nanotechnology ([OJ-NANO](#)), publishing high-quality peer reviewed papers, is already compliant with Plan S. OJ-NANO covers the theory, design, and development of nanotechnology and its scientific, engineering, and industrial applications.

To learn more about the IEEE open access options for authors and institutions or to view a list of institutions that have an open access agreement with IEEE, please visit [open.ieee.org](https://open.ieee.org).

Here is an FAQ where you can find answers to some anticipated questions on the impact of this announcement: <https://open.ieee.org/transformative-journals-FAQ>.

To learn more, please view the full Plan S release [here](#).

## AWARDS

### **2023 Individual Awards will be presented at IEEE NANO 2023 in Jeju Island, Korea.**

#### **Pioneer Award**

The Pioneer Award recognizes individuals who have had a significant impact on the field of nanotechnology by virtue of initiating new areas of research, development or engineering.

#### **Professor Xiangfeng Duan**

Department of Chemistry and Biochemistry, California NanoSystems Institute, University of California, Los Angeles

Email: [xduan@chem.ucla.edu](mailto:xduan@chem.ucla.edu)

"For pioneering contribution to the synthesis and integration of nanoscale materials and devices, especially van der Waals heterostructures and devices."

#### **Early Career Award**

The Early Career Award recognizes individuals who have made contributions with a major impact on the field of nanotechnology.

#### **Professor Deep Jariwala**

Department of Electrical and Systems Engineering, University of Pennsylvania

Email: [dmj@seas.upenn.edu](mailto:dmj@seas.upenn.edu)

"For breakthrough contributions in logic, memory and photonic devices from low-dimensional semiconductors."

#### **Chapter of the Year Award**

University of Saskatchewan IEEE Nanotechnology Council Student Branch Chapter

Chair: José Alvim Berkenbrock

Email: [j.alvim@usask.ca](mailto:j.alvim@usask.ca) or [berkenbrock@ieee.org](mailto:berkenbrock@ieee.org)

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### **New Awards in 2023**

NTC has received approvals to offer these new individual awards starting in 2023:

- IEEE Nanotechnology Council Best PhD Thesis Award in Nanotechnology (publication)
- Test of Time Publication Award (over 10-25 years)
- Technical Achievement Award(s) (Technical Committees)

## EDUCATIONAL ACTIVITIES

New Distinguished Lectures for 2023. Watch for the posting on the NTC website.

DL Name	Topic(s)
<a href="#">Xiangfeng Duan</a>	2D Transistors: Promises, Problems, and Prospects
<a href="#">Zetian Mi</a>	Nanoscale and Quantum Engineering of III-nitrides for High-Efficiency UV Optoelectronics and Micro LEDs
<a href="#">Jiming Bao</a>	Cubic Boron Arsenide (cBAs): a Promising Semiconductor for Next Generation Electronics
<a href="#">Xiaoying Zhuang</a>	Machine Learning-Based Multiscale Exploration and Characterization of 2D materials
<a href="#">Li Tao</a>	Emerging Low dimensional Materials and Devices for Wearable IoTs and Healthcare Applications in the Post Moore Era
<a href="#">Zenghui Wang</a>	A Vibrant New World Exploring New Physics and Materials with Nanoelectromechanical Systems (NEMS)

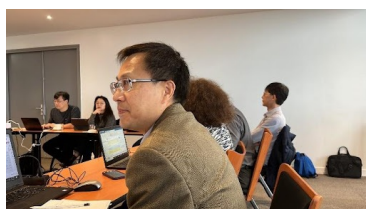
## TECHNICAL ACTIVITIES

### 2022 IEEE NTC Technical Activities Workshops (TAW) Report

Xiaoning Jiang, Kremena Makasheva, Weiqiang Liu, and Edward Perkins

The goal of NTC TAW initiative is to establish a mentoring/training program that will support TC chairs and Society representatives to be more effectively involved in and support NTC technical activities (TAs) at the end of the long COVID-19 pandemic that has caused numerous challenges in NTC technical activities. The IEEE NTC TAW initiative was approved by NTC in 2022, and NTC TAWs were scheduled for 2022 and 2023, with the expectation that all NTC TC Chairs and member Society representatives can attend at least one TAW during their TC Chair or Society representative terms. Dr. Xiaoning Jiang, VP TA, Dr. Kremena Makasheva, past VP TA and VP-elect Conference, and Dr. Weiqiang Liu, VP-elect TA were the key organizers for 2022 NTC TAWs.

The first NTC TAW was held on 3-4 Nov. 2022, Espaces Vanel, Toulouse, France, with Dr. Kremena Makasheva as Local Chair. Five NTC TC Chairs/TC Chair representatives, six NTC member Society representatives, seven NTC Officers, the NTC Secretary, three Standing Committees Chairs and three EICs (16 in-person participants, and eight recorded and remote presenters) attended the 2022 IEEE NTC TAW-Toulouse.



All present TC chairs or TC chair representatives (Dr. Xiaogan Liang (TC03 Nanofabrication), Dr. Inkyu Park (TC07 Nanosensors and Nanoactuators), Dr. Roza Kotlyar (TC10 Modeling and Simulation), Dr. Dustin Allen Gilbert (TC12 Nanomagnetism), and Dr. James B. Spicer (TC15 Nano-acoustic devices,

Proc. and Materials) and member Society representatives (Dr. Juan Ren (CS), Dr. Kremena Makasheva (DEIS), Dr. Val Novosad (MAG), Dr. Luca Pierantoni (MTT), Dr. John P. Verbencoeur (NPS), Dr. Weidong Zhou (IPS)) introduced themselves at the beginning of the workshop, as well as the TCs and member Societies.



Lectures were then given by the NTC President (Dr. Fabrizio Lombardi, remote), Past President (Dr. James Morris, remote), VP of Finances (Dr. Malgorzata Chrzanowska-Jeske, remote), VP for Conference (Dr. Jin-Woo Kim, in-person), VP for Educational Activities (Dr. Lixin Dong, recorded and Dr. James Spicer, in-person for TryNANO), VP for Technical Activities (Dr. Xiaoning Jiang, in-person), VP for Publications (Dr. Supriyo Bandyopadhyay (with Kremena's in-person introduction)), Secretary (Mr. Ed Perkins, in-person), EICs of NTC publications (Dr. Sorin Cotofana, in-person for TNANO, Dr. Jin-Woo Kim, in-person for OJ NANO, Dr. Bing Sheu for INM (presented by Dr. Xiaoning Jiang)), NTC conference general chairs (Dr. Jin-Woo Kim for NANO 2023), Chair for NTC YPs Committee (Dr. Rafal Sliz, remote), Chair for NTC Chapters (Dr. Lan Fu, recorded), and Chair for NTC Standards Committee (Mr. Tyler Jaynes, in-person).

Through these presentations, the TC chairs and member Society representatives were able to better understand the NTC Technical Activities associated with TCs and member Societies. Discussions were centered around the needs for technical activities from TCs and member societies, the gap between the needs and the support the TCs can provide, and how to bridge the gap so that more impactful NTC TAs can result in sustainable NTC growth.

On 17 Nov. 2022, the NTC TAW-Nanjing was held in Zhenbao Holiday Hotel in Nanjing, China. The workshop was chaired by Dr. Weiqiang Liu, NTC VP-Elect for Technical Activities and co-organized by Dr. Xiaoning Jiang, NTC VP for Technical Activities and Dr. Kremena Makasheva, NTC VP-Elect for Conferences. The workshop included two sessions. In the morning session, the current NTC officers presented an overview of NTC, starting with a



general description by Mr. Edward G. Perkins (NTC Secretary, remote), and followed by VP for Conferences (Dr. Jin-Woo Kim, remote), VP Technical Activities (Dr. Xiaoning Jiang, remote), VP for Educational Activities (Dr. Lixin Dong, remote), VP for Publications (Dr. Supriyo Bandyopadhyay, recorded), VP Finance (Dr. Malgorzata Chrzanowska-Jeske, recorded), and the NTC chapters (Dr. Lan Fu, recorded).



In the afternoon session, the chairs of TC02 Nano-biomedicine (Dr. Haibo Yu), TC09 Nano-Metrology and Characterization (Dr. Peng Li), TC13 Nano Energy, Environment and Safety (Dr. Zhan Yang), TC14 Nanoscale communications (Dr. Lin Lin) introduced their TCs in terms of the TC organization, the technical and educational activities.

Then, the Society representatives including Communications Society (Dr. Lingyang Song), Industrial Electronics Society (Dr. Yunjia Li), Computer Society (Dr. Weiqiang Liu) presented the overview of their Societies. The General Chair of IEEE NMDC 2022, Dr. Li Tao presented the preparation process of the conference and shared the experience of organizing a NTC conference. The EIC of NTC e-Newsletter, Dr. Ke Chen introduced the newsletter and related social media.

After all presentations, the attendees discussed some emerging topics for the coming NTC conference and publications. It was also suggested to form a multimedia team to manage all the NTC social media. It is expected to have a tightly coupled NTC ecology based on active TCs and Chapters to support NTC conferences, publications and educational activities.

The 2023 IEEE NTC TAW is being planned to be in conjunction with IEEE NANO 2023 in Jeju, Korea. TC Chairs and member Society representatives who missed the 2022 TAWs are warmly welcome to attend 2023 TAW.

The short-term outcome of NTC TAWs can be measured by increasing the number and the attendance of special sessions for NTC conferences such as NANO 2023, NMDC 2023, NANO 2024 and NMDC 2024, and special issues for NTC journals and

magazines. The long-term outcome will be measured by more impactful TAs associated with NTC educational activities, publication and conferences and the sustainable growth of NTC, keeping in that way the leadership of NTC in Nanotechnology field.

## YOUNG PROFESSIONALS

### NTC Young Professionals Update

Five Regional NTC YP LinkedIn pages have been established and are timely updated. The regional coordinators established cooperation with the regional NTC conference organizers in order to support and ensure presence of young professionals.

NTC YP LinkedIn:

- [Region 7 \(Canada\)](#)
- [Region 9 \(Latin America\)](#)
- [NTC YP India](#)
- [Region 8 \(Africa, Europe, Middle East\)](#)
- [Region 10 \(Asia and Pacific\)](#)



## CONFERENCES

### IEEE-NMDC 2023: Call for Papers



#### IEEE Nanotechnology Materials and Devices Conference Paestum, Italy | 22-25 October 2023

Website: <https://ieeenmdc.org/nmdc-2023>

IEEE NMDC is a flagship conference series of the IEEE Nanotechnology Council (NTC), focusing on research advances in the fields of nanoscience and nanotechnology.

The IEEE NMDC 2023 will be held in the pleasant environment of the ancient city of Paestum, one of the most important archeological sites of south Italy, UNESCO heritage since 1997.

#### Key Dates:

Paper Submissions Opening: 1 February 2023

Paper Submission Deadline: 1 May 2023

Acceptance Notification: 15 May 2023

Full Paper Submissions Opening: 20 May 2023

Full Paper Submission Deadline: 15 July 2023

Early Registration Deadline: 30 May 2023

### IEEE NANO 2023: Call for Papers



#### 23rd IEEE International Conference on Nanotechnology (IEEE-NANO 2023)

**2-5 July 2023, Jeju Island, Korea.**  
**Website: <https://2023.ieeenano.org/>**

IEEE-NANO is the flagship conference series of the IEEE Nanotechnology Council (NTC) since 2001, focusing on the promotion of advanced research in the fields of nanoscience and nanotechnology. Recent conferences were held in Palma de Mallorca (Spain, 2022), Montreal (Canada, 2021), Virtual (2020), Macau (China, 2019), Cork (Ireland, 2018), Pittsburgh (USA, 2017), Sendai (Japan, 2016), Rome (Italy, 2015), Toronto (Canada, 2014), etc.

**Key Dates:**

Paper Submissions Opening: 15 January 2023

Deadline for Paper Submissions: 15 March 2023

Notification of Acceptance: 15 April 2023

Camera-Ready Submission: 15 May 2023

Accepted full papers for IEEE-NANO will be submitted for inclusion into IEEE *Xplore* as well as other Abstracting & Indexing (A&I) databases.

NOTE: Only full papers (4 to 6 pages) submitted by 15 March 2023 will be considered for inclusion in IEEE *Xplore* with their acceptance.

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## **EIPBN 2023: Call for Abstracts**



**266th International Conference on Electron, Ion, and Photon Beam  
Technology and Nanofabrication**

**Website: <https://eipbn.org/>**

**30 May – 2 June 2023, Hilton San Francisco Union Square, San Francisco,  
California**

The International Conference on Electron, Ion and Photon Beam Technology and Nanofabrication (EIPBN), affectionately known as “3-Beams,” is the premier gathering of scientists and engineers who are dedicated to electron, ion and photon lithography, imaging, and analysis; atomically precise fabrication; nanofabrication process technologies; related emerging technologies; and their applications in a broad spectrum of fields. This is the 66th meeting of the EIPBN, where top researchers from academia, government laboratories, and industry from around the world meet to present and discuss recent trends and future directions in these technologies. IEEE NTC is a technical sponsor of EIPBN.

**Abstract Submission**

Details: <https://eipbn.org/abstracts-submissions/>

The deadline for abstract submission is **Sunday, 15 January 2023.**

Authors will be notified of acceptance by Sunday, 2 April 2023.

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## **IEEE-NEMS 2023 Call for Papers**



**Website: <https://ieeenems2023.org/>**

## Download CFP (PDF)

The 18th IEEE Int'l Conference on Nano/Micro Engineered & Molecular Systems (IEEE-NEMS 2023) will be held from 14-17 May 2022 at the Ramada Plaza Hotel Jeju, Jeju Island, South Korea.

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. The IEEE-NEMS Conference typically attracts over 600 attendees with participants from more than 20 countries and regions worldwide.

This event will take place in Jeju Island where you can enjoy the wonders of nature and Korean cultural heritages. Located in the southwest of the Korean Peninsula, Jeju Island is a popular tourist destination among domestic and international travelers alike for its beautiful and pristine natural scenery. Jeju Island is a unique place worldwide, holding the honors of the natural science area such as UNESCO World Biosphere Reserve [2002], UNESCO World Natural Heritage Site [2007] and UNESCO World Geoparks Network [2010]. We have prepared social activities to support participants' interests with one another and relish the beauty of Jeju. We hope you will take part in this conference to broaden your horizon!

### Key dates:

21 Jan 2023: Abstract Submission Deadline

28 Feb 2023: Acceptance Notification

31 Mar 2023: Full Paper Submission Deadline

31 Mar 2023: Early Registration Deadline

## PUBLICATIONS

### IEEE Transactions on Nanotechnology

View the full current issue of IEEE T-NANO

For additional information, visit the [IEEE Xplore website](#).

To learn how to submit to T-NANO, [click here](#).



**T-NANO, VOLUME 21**

### IEEE Open Journal of Nanotechnology

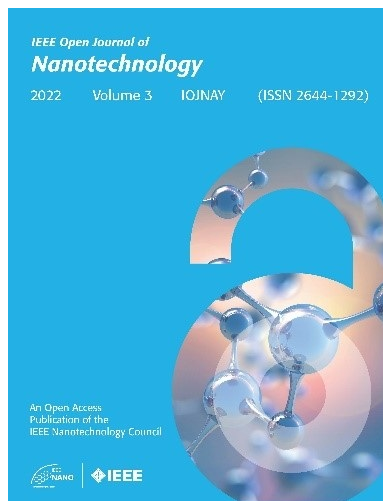
View the full current issue of IEEE OJ-NANO

For additional information, visit the [IEEE Xplore website](#).

To find how to submit to OJ-NANO, [click here](#).

The *IEEE Open Journal of Nanotechnology* (OJ-NANO) is dedicated to publishing articles on timely topics in the field of nanotechnology by making them available immediately, freely, and permanently available to all. All articles published in OJ-NANO are exposed to 5 million unique monthly users of the IEEE Xplore® Digital Library. Among numerous articles published so far, we've selected a few review articles to highlight [here](#).

**OJNANO, VOLUME 3**





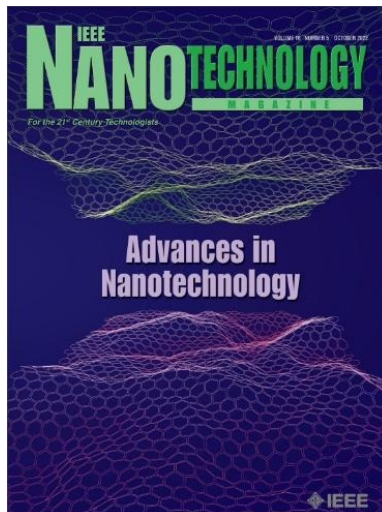
# IEEE Nanotechnology Magazine

View the full current issue of IEEE INM

For additional information, visit the [IEEE Xplore website](#).

To find how to submit to INM, [click here](#).

**INM, Volume 16, Number 5**



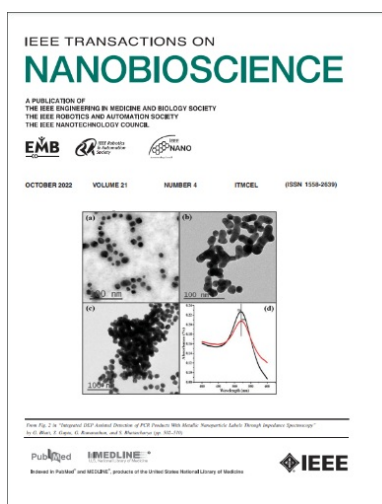
# IEEE Transactions on NanoBioscience

View the full current issue of IEEE T-NB

For additional information, visit the [IEEE Xplore website](#).

To find how to submit to T-NB, [click here](#).

**T-NB, Volume 21, Number 4**

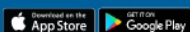


## LIST OF NANOTECHNOLOGY COUNCIL OFFICERS

2022	2023
President, Fabrizio Lombardi	President, Fabrizio Lombardi
Past-President, Jim Morris	Past-President, Jim Morris
	President-elect, Jin-Woo Kim
VP Conferences, Jin-Woo Kim	VP Conferences, Kremena Makasheva
VP Publications, Supriyo Bandyopadhyay	VP Publications, Supriyo Bandyopadhyay
VP Finances, Malgorzata Chrzanowska-Jeske	VP Finances, Malgorzata Chrzanowska-Jeske
VP Educational Activities, Lixin Dong	VP Educational Activities, Lixin Dong
VP Technical Activities, Xiaoning Jiang	VP Technical Activities, Xiaoning Jiang
Secretary, Edward Perkins	Secretary, Edward Perkins

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