Newsletter | February 2024

Editor's Note

Welcome to the Feb 2024 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 youâ€™d like to see covered in the future. All future content submissions to the newsletter should be sent to the editors: Yijun Cui and Ke Chen.

Yijun Cui

Nanjing University of Aeronautics and Astronautics
Nanjing, China

Ke Chen

Nanjing University of Aeronautics and Astronautics
Nanjing, China

Contents:

PRESIDENT'S MESSAGE

I am very honored and humbled to become the 2024-2025 president of IEEE Nanotechnology Council (NTC). I am also very proud of the outstanding work done over the years by the multitude of volunteers who made the Council as vibrant as it currently is. I have had fortune to serve with and learn from my predecessors, whose careful and thoughtful guidance has brought us this far, as I operated in several capacities for the NTC over the years. I will seek to continue the sequence of capable and insightful NTC presidents by working with the leadership, other volunteers, and participants to do their best in furthering the goals of the NTC.

The NTC is one of the oldest Councils of IEEE and a multidisciplinary professional group focusing on the advancement and coordination of work in the field of nanotechnology. The NTC is currently the second largest IEEE council with more than 31,000 participants. It is currently made up of 22 member societies and has a very strong presence on different social media to connect its activities with our participating community. There are no membership requirements to join and participation in the NTC is free and open to everyone! More details on the NTC can be found at https://ieeenano.org/.

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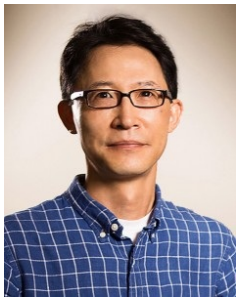


multidisciplinary professional group focusing on the advancement and coordination of work in the field of nanotechnology. The NTC is currently the second largest IEEE council with more than 31,000 participants. It is currently made up of 22 member societies and has a very strong presence on different social media to connect its activities with our participating community. There are no membership requirements to join and participation in the NTC is free and open to everyone! More details on the NTC can be found at https://ieeenano.org/.

As stated, the NTC has benefited from an insightful and diligent leadership for many years. It is held in high regard within the IEEE and appears aware of and adaptive to the challenges ahead. I am fortunate to be accompanied by very talented and enthusiastic volunteers. I am confident that we will accomplish our missions with the constructive collaboration of all current and future volunteers. You may find a snapshot of how I, as incoming president, lead the Council to better serve the NTC community and move the technical distinction of the Council to higher pinnacles in the February Issue of *IEEE Nanotechnology Magazine*.
I am deeply honored to have been given this opportunity and am look forward to working and learning from all of you! Please do not hesitate to contact me with suggestions and feedback. You can reach me by email at jwkim@uark.edu.

Jin-Woo Kim

BREAKING NEWS

Welcoming NTC 2024 Officers

Please join us in welcoming the new slate of officers:

Jin-Woo Kim, President
Jin-Woo Kim is a Director of Bio/Nano Technology Group at the Institute for Nanoscience & Engineering and a Professor of Biological Engineering, Biomedical Engineering, and Materials Science & Engineering at the University of Arkansas since July 2001. He was visiting professors at Harvard University, Brookhaven National Laboratory, and Pohang University of Science & Technology (POSTECH) and holds an adjunct professorship at the Department of Electrical Engineering of POSTECH. He was educated at Seoul National University (B.S.â€™86 in Chemical & Biological Engineering), University of Iowa (B.S.â€™91 in Microbiology), University of Wisconsin (M.S.â€™94 in Biology), and Texas A&M University (Ph.D.â€™98 in Biological Engineering). He served as NTC Vice President for Publications (2017-2019) and for Conferences (2021-2022) as well as organizing committees for several NTC-sponsored IEEE conferences, including IEEE-NANO, IEEE-NEMS, and IEEE-NANOMED. He is a fellow of IEEE and AIMBE, an NTC Nanotechnology Distinguished Lecturer (2017-2018), and an Editor-in-Chief of *IEEE Open Journal of Nanotechnology*.

Fabrizio Lombardi, Past-President
Prof. Fabrizio Lombardi, holds the International Test Conference (ITC) Endowed Chair at Northeastern University, Boston USA.
Fabrizio Lombardi graduated from the University of Essex (UK) with a B.Sc. (Hons.) in Electronic Engineering. He received the Master in Microwaves and Modern Optics (1978), the Diploma in Microwave Engineering (1978) and the Ph. D. from the University of London (1982). He is currently the holder of the International Test Conference (ITC) Endowed Chair at Northeastern University, Boston. At the same Institution during the period 1998-2004 he served as Chair of the ECE Department. He is a IEEE Fellow; he has been awarded the 2019 NTC Distinguished Service Award, the 2019 â€œSpirit of the CSâ€ Award and the 2021 T Michael Elliott Distinguished Service Certificate from the Computer Society. He has received many professional awards: the Visiting Fellowship at the British Columbia Advanced System Institute, Canada, twice the Texas Experimental Engineering Station Fellowship, the Halliburton Professorship and the Outstanding Engineering Research Award at Northeastern University, Boston and an International Research Award from the Ministry of Science and Education of Japan. He has won multiple Best Papers Awards from conferences as well as the recipient of the Initiation Award from the IEEE/Engineering Foundation and a Motorola Silver Quill Award.

Malgorzata Chrzanowska-Jeske, Vice President for Finances

Malgorzata Chrzanowska-Jeske is Professor of ECE and Director of VLSI & Emerging Technology DA Laboratory at Portland State University, where she was ECE Department chair from 2004 to 2010. Previously, she was with the Technical University of Warsaw and the Research and Production Center of Semiconductor Devices. She holds a Ph.D degree in EE from Auburn University. Her research interests include CAD for VLSI and 3DICs, nanotechnology and nano/bio systems, and design for emerging and renewable technologies. She has presented tutorial, keynote, and invited talks at international conferences, published 150+ technical papers, and serves as panelist/reviewer for the National Science Foundation, National Research Council Canada, and international journals and conferences. Her research has been supported by NSF and industry.

She received the 1990 Best Paper Award from Alabama Section of IEEE and IEEE CEDA 2008 Donald O. Pederson Best Paper Award in *IEEE Transactions on Computer-Aided-Design*.

Kremena Makasheva, Vice President for Conferences

Kremena Makasheva, is Senior Researcher at the French National Center for Scientific Research (CNRS), Laboratory on Plasma and Conversion of Energy (LAPLACE), Toulouse, France. Dr. Makasheva earned a Ph.D. degree on Plasma Physics from Sofia University, Bulgaria, 2002, for her work on Surface Wave Sustained Discharges. After a 4 year stay in the Groupe de physique des plasmas at UniversitÃ© de MontrÃ©al, QuÃ©bec, Canada she moved in 2007 to Toulouse, France to work in LAPLACE. Since 2009 she works on plasma deposition of nanostructures. Multifunctionality of silver nanoparticles (AgNPs) is in the heart of her research. In 2015 she and her colleagues proposed AgNPs-based blocking nanocomposite layer to control charge injection and transport in thin dielectrics. Her research activities are directed to study of reactive plasmas, design and study of plasma deposited nanostructured dielectric materials containing AgNPs for biomedical, optical, electrical engineering and space applications. She is the author and co-author of over 100 publications in international journals and conferences.

Her principal Nanotechnology Council activities include: Vice-President for Technical Activities (VP TA) and Chair of the NTC Technical Activity Committee (2020-2021), Member of the NTC Conference Committee (2021-onward), Program Chair of the 20th IEEE International Conference on Nanotechnology (IEEE NANO 20202 â€“ virtual), General Chair of the 11th IEEE Nanotechnology Materials and Devices Conference (IEEE NMDC 2016) in Toulouse, France and the 16th NMDC, Vancouver, Canada, and Coordinator for the co-located IEEE NMDC and CEIDP (Electrical Insulation and Dielectric Phenomena) conferences in 2021 in Vancouver, Canada.

John Yeow, Vice President-elect for Conferences

John T. W. Yeow is currently a Professor and a University Research Chair in the Department of Systems Design Engineering at University of Waterloo, Waterloo, ON, Canada. He is focused on the development of micro/nanodevices for a wide range of applications. He is a recipient of the Professional Engineers Ontario Engineering Excellence Award, Natural Science & Engineering Research Canada Innovation Challenge Award, Douglas R. Coltonâ€™s Medal of Research Excellence, Micralyne Microsystems Design Award, Ontario Ministry of Research and Innovationâ€™s Early Researcher Award, University of Toronto Alumni Association 7T6 Early Career Award, 2011 IEEE NANO Excellence Paper award and IEEE Canada Outstanding Engineer Award. He was a Canada Research Chair in Micro/Nanodevices (2004 â€“ 2019). He is a Fellow of the Canadian Academy of Engineering, the Engineering Institute of Canada, Engineers Canada, and a Member of College of New Scholars, Artists and Scientists of the Royal Society of Canada.

Luca Pierantoni , Vice-President for Educational Activities

Luca Pierantoni is Full Professor of Electromagnetic Fields at the UniversitÃ Politecnica delle Marche (UnivPM), Ancona, Italy. He received (1988) the Laurea Degree (summa cum laude) in Electronic Engineering and the PhD Degree (1993) in Electromagnetics from the University of Ancona, Italy. From 1996 to 1999, he worked at the Technical University of Munich, Germany, as Senior Research Scientist. His research interests are in the i) investigation of the combined Maxwell-quantum transport phenomena in nano-materials/-devices; ii) development of a computational techniques for the multi-physics modeling of nano-to-meso-scale devices/systems, including electrodynamics, quantum mechanics, thermal effects, spintronics and for applications that cover the areas of microwave, photonics, opto-mechanics, plasmonics, metamaterials, quantum computing; iii) atomistic (ab initio) simulations of novel and smart materials (e.g. ferroelectrics, phase change materials). UnivPM PI in the Europen Projects HiMMODA, GreEnergy, NANOEH, NANOPOLY, NANOSMART, NTX, PHENOMEN, NANO RF, MILESAGE. He is author/coauthor of about 300 papers in peer-reviewed journals and conferences. Thanks to European projects, it has obtained funding around 4 Million Euro, about US$4.6 Million.

Georgios Sirakoulis, Vice President for Publications

Prof. Georgios Ch. Sirakoulis is the Head (from 2020 till now) of Electrical and Computer Engineering Department of DUTH (Democritus University of Thrace) in Greece, Visiting Researcher/Professor in University of West England from 2014 and co-founder and research associate of Ulysses Ltd., Kavala, Greece (1999-2002). Georgios (Google Scholar â€“ h-index: 36, i-index: 122) has published more than 150 journal papers, more than 170 in international conference papers, 15 guest-editorials, 8 international books and 37 books chapters. He has participated as leader and principal investigator in more than 31 scientific programs and projects funded from the Greek Government, Industry, Third Parties and Countries and EU. He was and he is supervisor of 15 Ph.D. theses, 29 M.Sc. theses and 92 M.Eng. Theses. Three of his students have been awarded and one with best IEEE Greek Chapter Diploma Award. He has been involved in more than 142 Conferences (as PC member, Chair, etc.) and delivered 30 invited talks. See http://gsirak.ee.duth.gr.

Weiqiang Liu, Vice President for Technical Activities

Weiqiang Liu is currently a Professor and the Vice Dean of College of Electronic and Information Engineering/College of Integrated Circuits, Nanjing University of Aeronautics and Astronautics (NUAA), Nanjing, China. He received the B.Sc. degree in Information Engineering from NUAA and the Ph.D. degree in Electronic Engineering from Queenâ€™s University Belfast (QUB), Belfast, United Kingdom, in 2006 and 2012, respectively. His research interest mainly focuses on emerging computing nano ICs. He has published 2 research books by Springer and Artech House, over 190 leading IEEE journal and conference papers. His papers were selected as the Highlight Paper of *IEEE Transactions on Circuits and Systems I*: Regular Papers in the 2021 January Issue, the Feature Papers of *IEEE Transactions on Computers* in the 2017 December issue, and IET Computers & Digital Techniques Editorâ€™s Choice Award in 2021. He received the prestigious Excellent Young Scientists Fund from NSFC in 2020 and listed in the Stanford Universityâ€™s 2020 list of the top 2% scientists in the world.

We also would like to acknowledge and thank our outgoing officers. We are truly grateful for their commitment and continued support of our community.

President - Fabrizio Lombardi
Past-President - James (Jim) Morris
Vice President for Education - Lixin Dong
Vice President for Publications - Supriyo Bandyopadhyay
Vice President for Technical Activities - Xiaoning Jiang

NTC Announces Winners of the 2024 Individual Award

2024 Individual Awards will be presented at IEEE NANO 2024 in Gijon, Spain.

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.
Tony Heinz
Department of Applied Physics, Stanford University, Stanford, CA
Proposed Award Citation:
For seminal contributions to elucidating the optical and electronic properties of carbon nanotubes, graphene,2D semiconductors, and their heterostructures.

Early Career Award
The Early Career Award recognizes individuals who have made contributions with a major impact on the field of nanotechnology.
Wei Yan
Nanyang Technological University, Singapore
Proposed Award Citation:
For his pioneering and innovative contributions to nanotechnology enabled fiber, fabric and wearable electronics

Chapter of the Year Award
IIT Indore (Indian Institute of Technology-Indore IEEENTCl Student Branch Chapter, Bombay Section)
Chair: Mayank Dubey
Proposed Award Citation:
For exceptional dedication to advancing nanotechnology, fostering innovation, and promoting collaboration for the betterment of society.

2024 Fellows Evaluation Committee

NTC announces the 2024 Fellows Evaluation Committee.

Chair:
Tommy Tzeng, National Cheng Kung University, Taiwan
Email: Tzengyo@gmail.com

Members:
Barbara De Salvo, CEA-Leti, France
Hark Hoe Tan, Australian National University, Australia
Ning Xi, University of Hong Kong, Hong Kong
Yu Sun, University of Toronto, Canada
Xiuling Li, University of Texas, USA
Larry Nagahara, John Hopkins, USA
Andrea Alu, City University of New York, USA
Fil Bartoli, Lehigh University, USA
Zhigang Pan, University of Texas, USA
Robert Shull, NIST, USA

Call for Proposals for Future Site for IEEE NMDC 2026

Initial Proposal Deadline: 30 April 2024
The IEEE Nanotechnology Materials and Devices Conference (IEEE-NMDC) aims to develop critical assessment of existing work and future directions in nanotechnology research from every sector in the nanotechnology research field, with a special focus on materials and devices. NMDC 2024 will be held in Salt Lake City, Utah, USA. Past locations of the NMDC have been in Asia (Korea, Japan, Taiwan, Singapore), USA (California, Michigan, Hawaii, Alaska, Portland), Canada (Vancouver, BC) and Europe (Italy, France, Sweden). NMDC typically runs between mid-September and mid-October, with the later dates preferred since IEEE NANO runs in the first half of July.

We are now seeking proposals for IEEE-NMDC 2026 which is expected to run in **IEEE Region 8 (Europe, Africa/ Middle East)**. For conference history, visit https://ieeenano.org/nmdc.

Early indication of an intention to submit a proposal is strongly recommended. Candidates for NMDC 2026 will be expected to present a 5-10 minute â€œProposal in Preparationâ€ based on the initial proposal at the NTC ExCom and AdCom meetings in July 2024 held at IEEE-NANO 2024 in Gijon, Spain. Final proposals are due in October for presentation at the Fall NTC ExCom meeting.

PROPOSAL FORMAT:

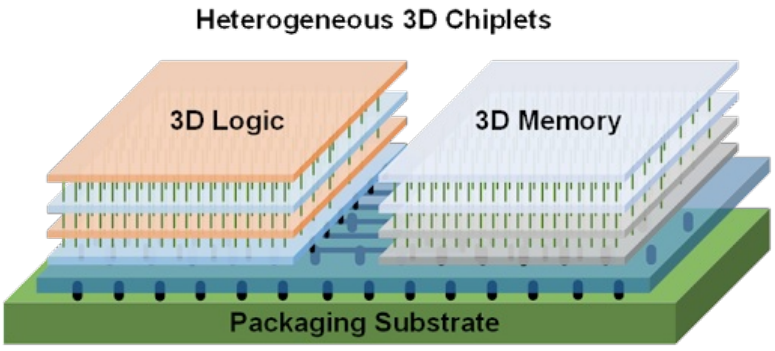
Initial proposals should be prepared in PowerPoint presentation format. **An NTC Conference Proposal Guidelines and a PPT template are available upon request.** Proposals should cover:

- **Venue:** City (or nearby city for rural locations); visitor access (e.g., daily flights,) with typical travel costs; hotel costs (including wi-fi, breakfast, etc.); tourist information
- **Facilities:** Hotel or campus venue if known (with verification of availability for formal proposals); lecture theater and meal capacities
- **Personnel:** General Chair(s), Program Chair(s), Treasurer, other volunteer personnel (e.g., program/advisory committees), and any administrative staff or management company
- **Budget information:**
    - *For informal proposals:* Target registration rates, estimated number of attendees, estimated income (registration, tutorials, exhibition, grants/donations, etc.), estimated expenses (meals/receptions/breaks, administrative costs, etc.), other features of interest. Please prepare and submit two version of the budget: one corresponding to the expected number of attendees (typically ~200 - 250) and a second one for 100 attendees less. This request is related to risk evaluation.
    - *For formal proposals:* As above, but with more detail covering all budgeted income and expenses in the required IEEE NetSuite spreadsheet format. Note that the (Income-Expense)/Expense ratio must be at least 20%, in accordance with IEEE policy.

Formal proposals must be e-mailed prior to the appropriate deadline to: NTC Vice-President for Conferences Kremena Makasheva (kremena.makasheva@laplace.univ-tlse.fr) with copies to Ed Perkins, NTC Secretary (e.perkins@ieee.org).

Contact Kremena Makasheva, (kremena.makasheva@laplace.univ-tlse.fr) with any questions.

CFP: *IEEE Journal on Exploratory Solid-State Computational Devices and Circuits* (JxCDC)



IEEE Journal on Exploratory Solid-State Computational Devices and Circuits
Special Topic on 3D Logic and Memory for Energy Efficient Computing

Guest Editor
Yu Cao, University of Minnesota, yucao@umn.edu
Jeff Zhang, Arizona State University, jeffzhang@asu.edu
Editor-in-Chief
Azad Naeemi, Georgia Institute of Technology, azad@gatech.edu

Aims and Scope
Monolithic microelectronic design is facing tremendous challenges in the growing need of computation memory bandwidth and latency, and the energy efficiency of computation which is limiting its performance and cost. Although recent advances (e.g., domain-specific acceleration, near-memory and in-memory computing techniques) try to address these issues, the scaling trend of monolithic design still lags behind the ever-increasing demand of AI algorithms, high-performance computing, high-definition sensing and other data-intensive applications. In this context, technological innovations, in particular 3D integration through packaging and monolithic methods, are critical to enabling heterogeneous integration (HI) and bringing significant performance, energy and cost benefits beyond traditional chip design. 3D logic and memory design allow heterogeneous functional macros (i.e. chiplets) to be flexibly produced and connected with higher interconnection density, length reduction and area utilization, opening new opportunities across the microelectronic design stack.

The paradigm shift to heterogeneous integration and monolithic 3D methods requires a tight collaboration between packaging and chiplet designs spanning the entire design cycle, including devices, circuits, architectures, and design automation tools. Logic and memory will be partitioned into various 3D modules. The designers need to customize each module and define the interface, and assess system-level tradeoffs in performance, data movement, and energy efficiency. Design and synthesis tools have to be aware of 3D integration and planning knowledge (e.g., power delivery, heat dissipation and reliability) to enable the packaging and chiplet co-design. Furthermore, early predictive modeling and analysis of the 3D HI circuits and systems are essential to minimize the iteration cost between 3D architecture definition and design implementation.

This special issue of the *IEEE Journal on Exploratory Computational Devices and Circuits* (JXCDC) aims to call for the recent research advances in the area of 3D logic and memory design spanning from monolithic 3D and advanced packaging technology to circuits and architectures. Papers on co-design and optimization across multiple domains are encouraged.

Topics of Interests
Prospective authors are invited to submit original works and/or extended works based on conference presentations on various aspects of 3D logic and memory design for energy efficient computing. Topics of special interest include but are not limited to:

- Technology perspectives of 3D heterogeneous integration
- Emerging monolithic 3D logic and memory devices to improve energy efficiency of computation.
- Advanced packaging for 2.5D and 3D integration to improve energy efficiency of computation.
- Logic design and partition for a 3D system
- Network topology for 3D data movement
- 3D memory design and architectures to reduce the power consumption of data movement.
- Signaling interface cross 3D modules
- Thermal cooling and management to address the increased power density of 3D integration.
- Power delivery, thermal management and reliability of 3D integrated circuits
- Power delivery, thermal management and reliability of 3D integrated circuits
- Architectural innovations for energy-efficient 3D HI
- Prototypes of multi-tier logic and memory macros
- EDA tools for multi-domain 3D integration

Information on submission guidelines can be found at the JxCDC page on the SSCS website.
Paper submissions must be done through the IEEE Author Portal website: https://ieee.atyponrex.com/journal/JXCDC.

Important Dates
Open for Submission: 15 February 2024
Submission Deadline: 31 May 2024
First Notification: 30 June 2024
Revision Submission: 15 July 2024
Final Decision: 31 July 2024
Publication Online: 15 August 2024

AWARDS

Best PhD Thesis Award in Nanotechnology Due 1 March 2024

This annual award recognizes a PhD thesis in nanotechnology with remarkable technology innovation or excellence which should have led to publications in NTC venues including journals and conferences. Any member with no conflict of interest (i.e. advisor-advisee relationship) with any member of the NTC ExCom, NTC Education Committee, or NTC Technical Committees can submit a nomination to the Award Committee for this award. Self-nominations are not allowed. Requires three references. Read more.

Technical Achievement Award(s) Due 1 March 2024

This annual award recognizes individuals with outstanding and innovative contributions to the different areas of nanotechnology that are represented by

technical committees (TCs) as organizational entities of the Nanotechnology Council (NTC), usually within the past 10 and not more than 15 years. Note: Nominations from any member of the NTC Technical Activities Committee within the last three years (including the nomination year) ONLY. No self-nominations. Up to 3 awards will be presented each year. Requires three reference letters. Read more.

Best Paper Award for the IEEE Nanotechnology Magazine Due 1 March 2024

This annual award recognizes a highly influential and impactful article of the highest quality published in the *IEEE Nanotechnology Magazine* (INM) in the preceding 2 calendar years. (For example, the 2023 award recognizes a paper published in 2021 or 2022.) Note: Nominations accepted from any current or past member of the INM Editorial Board within the last 3 years ONLY. No self-nominations. Requires three references. Read more.

Test of Time Publication Award Due 1 March 2024

This annual award recognizes a highly influential, widely visible, and impactful article of the highest quality which appeared in any Nanotechnology Council managed journal, magazine, or financially sponsored conference proceedings between 10 years and 25 years ago. Note: Nominations from any Editorial Board member of any NTC publication within the last 25 years ONLY. No self-nominations. Requires three reference letters. Read more.

Best Paper Award for the IEEE Transactions on Nanotechnology Due 1 March 2024

An annual best paper award to recognize a paper published in the *IEEE Transactions on Nanotechnology* (T-NANO) that is remarkable by its novelty, scientific merit, and potential impact. This award will encourage submission of excellent papers to the journal, and reward outstanding submissions. Note: Nominations by members of the T-NANO Editorial Board ONLY. Read more.

TECHNICAL ACTIVITIES

Newsletter for IEEE NTC Shanghai Chapter Nanotechnology Distinguished Seminar on Machine Learning

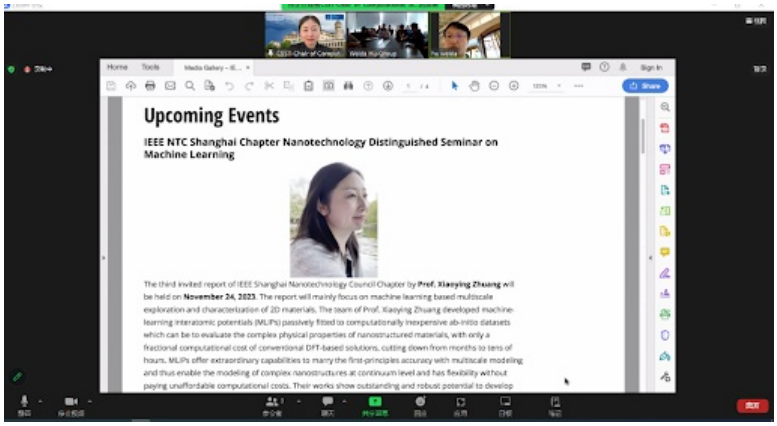
Shanghai, 24 November 2023 â€“ The IEEE Nanotechnology Council (NTC) Shanghai Chapter recently completed its Nanotechnology Distinguished Seminar (NDS), bringing together NTC Shanghai Chapter officers, Computational Science and Simulation Technology Chairs, and Shanghai Institute of Technical Physics (SITP), Chinese Academy of Science (CAS) representatives to advance IEEE NTC Shanghai Chapterâ€™s NDS Series and promote communication and commonality within the organization.

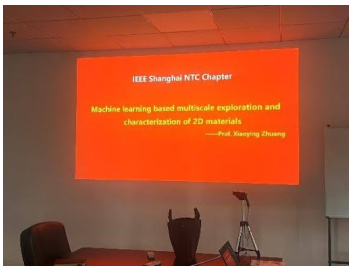
During the opening, Weida Hu, the Chair of IEEE NTC Shanghai Chapter, emphasized the importance of technology interconnection and clarified the important impact of the NDS Series on NTC Shanghai Chapter and NTC initiatives. The NDS aims to promote multi-scientific and technological cultural exchanges, break down information barriers, and ultimately achieve collaborative development within the organization.

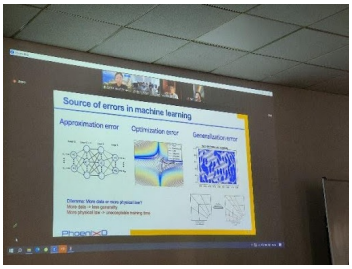
The seminar featured roundtable discussions and a detailed presentation from Xiaoying Zhuang, Weida Hu, 3 IEEE NTC Shanghai Chapter representatives, and 29 SITP representatives. Xiaoying Zhuang, from Leibniz University Hannover, who served as Chair of Computational Science and Simulation Technology, presented a detailed report focusing on machine learning based multiscale exploration and characterization of 2D materials. The team of Prof. Xiaoying Zhuang developed machine-learning interatomic potentials (MLIPs) passively fitted to computationally inexpensive ab-initio datasets which can be to evaluate the complex physical properties of nanostructured materials, with only a fractional computational cost of conventional DFT-based solutions, cutting down from months to tens of hours. MLIPs offer extraordinary capabilities to marry the first-principles accuracy with multiscale modeling and thus enable the modeling of

complex nanostructures at continuum level and has flexibility without paying unaffordable computational costs. Their works show outstanding and robust potential to develop fully automated platforms, to design, optimize, and explore various properties of 2D materials and structures at continuum level, and with inherent precision and robustness.

The IEEE NTC Shanghai Chapter Nanotechnology Distinguished Seminar on Machine Learning was a great success, making all participants rejoice in their contribution to the synergistic development within IEEE NTC Shanghai Chapter and future endeavors in the field of nanotechnology.







WIN ACTIVITIES

NTC WIN to Host a Special Session at NANO 2024

Connect with IEEE NTC WIN

Facebook Page:
IEEE NTC Women in Nanotechnology
https://www.facebook.com/IEEE-NTC-Women-in-Nanotechnology-107114981843398

LinkedIn:
IEEE Nanotechnology Council â€“ Women in Nanotechnology
linkedin.com/company/ieee-nanotechnology-council-women-in-nanotechnology

Hashtags: #ieeentcwin

YOUNG PROFESSIONALS

NTC Young Professionals Connections

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

NANO 2024 â€“ Call for Papers

The 24th IEEE International Conference on Nanotechnology (IEEE NANO

2024) will
be held from 8 - 11 July 2024, in GijÃ³n, Spain.
https://2024.ieeenano.org/
Download CFP (PDF)

Since its founding in 2001, IEEE NANO has been the flagship conference of the IEEE Nanotechnology Council (NTC). It promotes advanced research in nanoscience and nanotechnology.

IEEE NANO 2024 invites contributions from both academic and industry-based researchers in the field of nanotechnology. Authors should prepare a paper (4-6 pages) using the template in the IEEE style and submit it for review by **1 March 2024**.

Technical Categories

- Nanorobotics & Nanomanufacturing
- Nanofabrication
- Spintronics
- Nanosensors & Nanoactuators
- Nano-Metrology & Characterization
- Nanopackaging
- Nano-Energy, Environment, & Safety
- Nano-Acoustic Devices, Processes, & Materials
- Emerging Plasma Nanotechnologies
- AI in Nanotechnology
- Nanobiomedicine
- Nano-Optics, Nanophotonics, and Nano-Optoelectronics
- Nanoelectronics
- Nanomaterials
- Modeling & Simulation
- Nanomagnetics
- Nanoscale Communications
- Quantum, Neuromorphic, & Unconventional Computing
- Nanotechnology in Soft Electronics

Important Dates

- **Special Session & Forum Proposal Deadline** 1 February 2024, Decision 15 February 2024
- **Workshop Proposal Deadline** 15 February 2024, Decision 1 March 2024
- **Four-page Papers Submission Deadline** 1 March 2024, Decision 30 April 2024

Organizing Committee
General Chair
Montserrat Rivas (University of Oviedo, Spain)
General Co-Chairs
Kremena Makasheva (French National Center for Scientific Research (CNRS), France)
Valentine Novosad (Argonne National Laboratory, USA)
Program Committee
Giovanni Finocchio (University of Messina, Italy)
Jia Yan Law (University of Sevilla, Spain)
Vito Puliafito (Politecnico di Bari, Italy)

NEMS 2024 â€“ Call for Papers

The 19th IEEE International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS2024) will be held in Kyoto University of Advanced Science (KUAS), between 2 - 5 May 2024.
https://www.ieee-nems2024.org
Download CFP (PDF)

IEEE-NEMS: 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. Prior conferences were held in Jeju (Korea, 2023), Bangkok (Thailand, 2019), Singapore (2018), Los Angeles (USA, 2017), Matsushima and Sendai (Japan, 2016), Xiâ€™an (China, 2015), Hawaii (USA, 2014), Suzhou (China, 2013), Kyoto (Japan, 2012), Kaohsiung (Taiwan, 2011), Xiamen (China, 2010), Shenzhen (China, 2009),

Hainan Island (China, 2008), Bangkok (Thailand, 2007), Zhuhai (China, 2006).

Kyoto: IEEE-NEMS 2024 will be held in Kyoto. Kyoto served as Japanâ€™s capital and the emperorâ€™s residence from 794 until 1868. It is one of the countryâ€™s ten largest cities with a population of 1.5 million people and a modern face. The conference venue, the Kyoto University of Advanced Science (KUAS), with newly established Faculty of Engineering, accelerates the evolution of robots and automated machines, as well as drones and electric vehicles.
IEEE NEMS 2024 invites all interested MEMS, nanotechnology, and molecular technology fields professionals and academics to submit oral and poster. We welcome you to contribute to the most up-to-date research and latest developments from around the world. Abstracts will be reviewed by the Technical Committee and, if accepted, the author will be asked to submit the full paper (optional) which will be assigned to the appropriate session based on the authorâ€™s application and program requirements.

Conference Scope:
We invite contributions describing the latest scientific and technological research results in subjects including, but not limited to:
â€˜ Micro/Nano Electro-Mechanical Systems (M/NEMS)
â€˜ Micro/Nano/Molecular Fabrication
â€˜ Functional Nanomaterials and Devices
â€˜ Nanophotonics and Nanoscale Imaging
â€˜ Nanoscale Robotics, Assembly, and Automation
â€˜ Micro/Nano/Molecular Sensors, Actuators, and Systems
â€˜ Micro/Nano Fluidics and Devices
â€˜ Micro/Nano Mechanics
â€˜ Nanobiology/Nanomedicine/Microphysiological Systems (MPS)

Submission Deadlines
Two-Page Abstract Deadline: 18 December 2023
Notification of Acceptance: 29 January 2024
Full-Paper (IEEE Xplore) Submission Deadline: 26 February 2024
Early Bird Registration: 29 January 2024
Contact: nems_2024@ksys.me.kyoto-u.ac.jp

NMDC 2024 â€˜ Call for Papers

18th IEEE Nanotechnology Materials and Devices Conference (IEEE NMDC 2024)
22-25 October 2024, Salt Lake City, Utah, United States
Conference venue: Radisson Salt Lake City Downtown
https://ieeenmdc.org/nmdc-2024

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

Conference Scope:
The conference focuses on the latest scientific and technological advances related to

- Nanorobotics and nanomanufacturing
- Nano-biomedicine
- Nanofabrication
- Nano-Optics, Nanophotonics, and Nano-Optoelectronics
- Spintronics
- Nanoelectronics
- Nanoscale communications and
- Modeling and Simulation
- Nanopackaging
- Nanomagnetics
- Nanoenergy, Environment and Safety
- Nano-acoustic Devices, Processes & Materials
- Quantum, Neuromorphic & Unconventional Computing
- Emerging Plasma Nanotechnologies
- Emerging material and device challenges in futuristic systems

- Nanonetworks
- Nanosensors and Nanoactuators
- MEMS/NEMS
- Nanoelectronics
- Nano-fluidics and integrated bio-chips
- Nanomaterials
- DNA Nanotechnology
- Nanodiamond and nanocarbon structures: materials and devices
- Nanometrology and Characterization
- Education in nanotechnology
- Ethics in Nanotechnology
- Commercializing nanotechnology
- Fundamentals and applications of nanotubes, nanowires, quantum dots and other low dimensional materials

Key Dates:
Abstract Submission Date: **15 May 2024**
Full Paper Submission: 15 July 2024
Notification of Acceptance: 1 September 2024
Final Paper Submission: 1 October 2024
Accepted and presented full papers (4 to 6 pages) for IEEE NMDC 2024 will be included in IEEE *Xplore* as well as other Abstracting & Indexing (A&I) databases.

We are proud to announce that the 18th IEEE Nanotechnology Materials and Devices Conference (NMDC) will be held in lovely Salt Lake City, Utah, USA 22 - 25 October of 2024. You may recall the beautiful scenery broadcast during the 2002 Winter Olympics which were held in the Wasatch Mountains (Rocky Mountains). Utah still boasts being a wild western state; it is almost the size of Romania with roughly only 15% the population. Most of Utahâ€™s population lives along a corridor between the Great Salt Lake and the Wasatch Mountains. As the Utah population is condensed, our light rail system permits easy inexpensive travel from the Salt Lake International Airport to out conference hotel, the Radisson Downtown. In addition, there are many alternative hotels and many restaurants in walking distance or along the light rail lines.

IEEE NMDC 2024 will be the perfect stage to promote research from all across the world.

General Chair:
Daniel N Donahoe, 1000 kilometers LLC, USA
Co-Chairs:
Vice Chair: Randy J Jost, Utah State University, USA
Program Chair: Randy K Rannow, Silverdraft Supercomputing, USA
Treasurer: Lee Oien, MSEI, USA

3M-NANO 2024 Call for Papers

www.3M-NANO.org
Download CFP (PDF)

3M-NANO is the annual International Conference on Manipulation, Manufacturing and Measurement on the Nanoscale; it will be held on 29 July â€“ 2 August 2024 in Zhongshan, China. **The ultimate ambition of this conference series is to bridge the gap between nanosciences and engineering sciences**, aiming at technology opportunities and new markets. The advanced technologies for manipulation, manufacturing and measurement at nanoscale promise novel revolutionary products and methods in numerous areas of application. Scientists working in research fields related to 3M-NANO topics are invited to submit papers.

All accepted full papers (presented at the conference and following IEEE format) will be submitted in IEEE *Xplore* database and Ei Compendex.
Selected papers will be recommended for publication in the *IEEE Trans. on Automation Science & Engineering*, *Int. J of Nanomanufacturing*, *IFAC Mechatronics*, *Int. J of Optomechatronics*, *J of Micro-Bio Robotics*, *Journal of Bionic Engineering*, *Light (Science & Applications)*, *Optics and Precision Engineering*, *International Journal of Extreme Manufacturing*, *Material Today Bio*, and other SCI/EI journals.

Organizers:

Zhongshan Institute of Changchun University of Science and Technology, China
International Research Centre for Nano Handling and Manufacturing of China
Changchun University of Science and Technology, China
Aarhus University, Denmark
University of Warwick, UK
University of Bedfordshire, UK
Ministry of Education Key Laboratory for Cross-Scale Micro and Nano Manufacturing, China
International Society for Nano Manipulation, Manufacturing and Measurement
IEEE Nanotechnology Council

Topics: Specific topics include, but are not limited to

- Nanohandling robots and systems
- Nanofabrication and nanoassembly
  Nanometrology and nanocharacterization
- Nanopositioning and nanomanipulation
- Nanosensing and microscopy
- AFM and SEM for nanohandling
- Process automation at nanoscale
- Self-assembly at nanoscale
- Nanoscale robotics
- Nanolithography
- Nanoenergy
- Nanoscience for healthy foods
- 3D/4D printing and applications
- Nanomaterials and applications
- Graphene, 2D materials and applications
- Nanoparticles, nanowires and nanotubes
- Nanoelectronics and nanomagnetics
- Nanophotonics and plasmonics
- Nanomechanics and nanomechatronics
- NEMS and their applications
- Nanofluidics
- DNA detection and sequencing
- Bio-nano devices and applications
- Bio-nanoimaging and nanomeasurement
- Nanotech and environmental protection

High-profile keynote talks (20-24) on selected topics in manipulation, manufacturing and measurement on the nanoscale will be offered by **distinguished international experts**.

Social events: 3M-NANO aims at encouraging long-term partnerships and collaborative activities between experts in nanosciences and in engineering sciences. **Get-together events will be organized by 3M-NANO as part of this effort.**

Venue: Zhongshan City, formerly known as Xiangshan, is located in Guangdong Province, and it is the geometric center of the Guangdong-Hong Kong-Macao Greater Bay Area, with five international airports in Zhuhai, Shenzhen, Guangzhou, Hong Kong and Macao, as well as four deep-water ports, namely, Nansha Port, Yantian Port, Shekou Port and Gaolan Port, within a radius of 90 km.

Important Dates
Full paper submission: 1 May 2024
Proposals for special session (5-6 papers): 1 May 2024

MARSS 2024: Call for Papers

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

MARSS 2024 DELFT

Delft, Netherlands
July 01–05, 2024

Website: https://marss-conference.org
Download Call for Papers (PDF)

MARSS, the annual International Conference on Manipulation, Automation and Robotics at Small Scales, is a non-profit conference run by the microrobotic community and technically supported by IEEE-RAS and IEEE-NTC. MARSS2024 will be held **in-person** on **1 - 5 July 2024**, in **Delft, Netherlands**. The conference is the flagship forum to discuss cross-disciplinary activities on 1) manipulation, automation, measurement, and characterization at micro/nano scales, and 2) all kinds of small-scale robots (nm â€“ cm) and their applications.

Program: MARSS2024 offers 13-14 plenary talks and up to 36 technical sessions. The high-profile plenary talks (40 min) will be given by distinguished experts. All accepted papers (full and short) will be presented in the technical sessions (20 min, oral presentation) Accepted full papers will be submitted for inclusion into IEEE *Xplore*Â® subject to meeting IEEE *Xplore*Â®â€™s scope and quality requirements.

Awards: All presented full papers will contest for various . The Best Paper Awards Awards include a certificate and a cash prize. Additionally, MARSS2024 will

present Big-on-Small Award, along with a commemorative plaque and a cash prize. This Award is intended to promote upcoming talents in MARSS-related fields of research with excellent performance and international visibility.

Venue: MARSS2024 will be held on the main campus of Delft University of Technology (TU Delft). Delft enjoys a worldwide reputation due to its connection with Johannes Vermeer, Delft Blue earthenware and the Royal House. You will relive its glorious past as you wander along canals, churches and courtyards. This university town with medieval architecture also features canal tours, museums, and markets.

Full paper submission (5-6 pages):	31 March 2024 **(no extension possible!)**
Short paper submission (1-3 pages):	31 March 2024 (may be extended until 30 April, if slots are available
Notification of paper status:	Full paper: within 2 weeks after the submission Short paper: 2-3 days after the submission
Submission of camera-ready full papers:	30 April 2024
Registration for speakers of full papers:	30 April 2024
Early Bird registration (discounted):	30 April 2024
Special session proposals:	31 March 2024 (preliminary proposal, OPTIONAL) 30 April 2024 (final list of Session speakers)

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 23

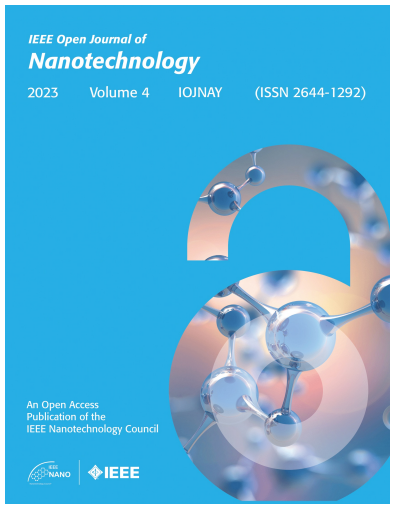
IEEE Open Journal of Nanotechnology

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 *XploreÂ®* Digital Library. Among numerous articles published so far, we've selected a few review articles to highlight here.



OJNANO, VOLUME 4

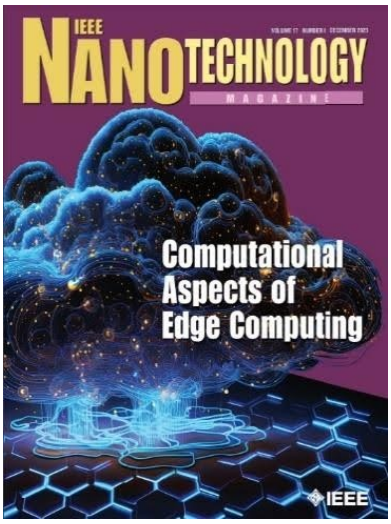
IEEE Nanotechnology Magazine

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 17, Number 6



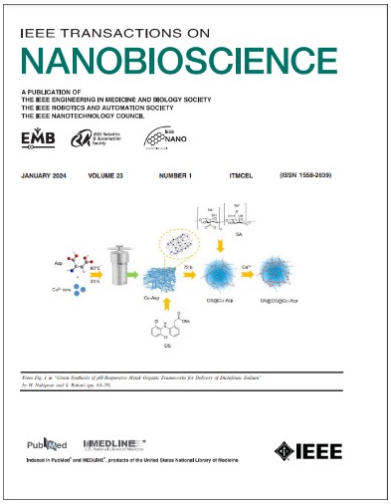
IEEE Transactions on NanoBioscience

View the full current issue of IEEE T-NB

For additional information, visit the IEEE *Xplore* website.

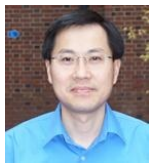
To find how to submit to T-NB, click here.

T-NB, Volume 23, Number 1



LIST OF NANOTECHNOLOGY COUNCIL OFFICERS (2023)

Position	Name	Position	Name
President	 **Fabrizio Lombardi**	**Past-President**	 **James Morris**
President-Elect	 **Jin-Woo Kim**	**Vice President for Conferences**	 **Kremena Makasheva**
Vice President for Educational Activities	 **Lixin Dong**	**Vice President-Elect for Educational Activities**	 **Luca Pierantoni**

Vice President for Finances	 **Malgorzata Chrzanowska-Jeske**	**Vice President for Publications**	 **Supriyo Bandyopadhyay**
Vice President-Elect for Publications	 **Georgios Sirakoulis**	**Vice President for Technical Activities**	 **Xiaoning Jiang**
Vice President-Elect for Technical Activities	 **Weiqiang Liu**	**Secretary**	 **Edward G. Perkins**

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