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# ***Micro- and Nanotechnology Sensors, Systems, and Applications XI***

**Thomas George**  
**M. Saif Islam**  
*Editors*

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# Contents

v	<i>Authors</i>
vii	<i>Conference Committee</i>
ix	<i>Introduction</i>

---

**SESSION 1**      **EXTREME PHOTON CONFINEMENT AND MANIPULATION FOR PROPAGATION, SENSING AND ENERGY HARVESTING**

---

10982 05	<b>Transfer of ordered and disordered Si nanowires onto alien substrates for the fabrication of third-generation solar cells (Invited Paper) [10982-4]</b>
----------	--

---

**SESSION 2**      **TOPOLOGICAL ROBUSTNESS IN ELECTRONIC AND PHOTONIC SYSTEMS AND DEVICES**

---

10982 06	<b>Topological spintronics and Majorana fermions (Invited Paper) [10982-5]</b>
----------	--

---

**SESSION 3**      **3D PRINTING OF FUNCTIONAL MATERIALS AND DEVICES**

---

10982 0B	<b>Additive manufacturing of catalytically active living material hydrogels (Invited Paper) [10982-10]</b>
10982 0C	<b>Multiscale additive manufacturing of electronics and biomedical devices (Invited Paper, Rising Researcher Paper) [10982-11]</b>

---

**SESSION 4**      **NANO/MICRO TECHNOLOGIES ENABLING SPACE SCIENCE MISSIONS**

---

10982 0F	<b>Future planetary instrument capabilities made possible by micro- and nanotechnology (Invited Paper) [10982-14]</b>
10982 0G	<b>Carbon nanotube-based radiometers demonstrated on the RAVAN CubeSat mission (Invited Paper) [10982-15]</b>
10982 0H	<b>Chip-scale optical phased arrays for inter-spacecraft communications (Invited Paper) [10982-16]</b>
10982 0I	<b>Undergraduate research and science mission opportunities with microtechnology enabled particle detectors (Invited Paper) [10982-17]</b>

---

**SESSION 5 APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN IMAGING AND SENSING**

---

- 10982 0J **Artificial intelligence approaches for modeling social terrain (Keynote Paper)** [10982-18]
- 10982 0L **Early detection of coronary artery blockage using image processing: segmentation, quantification, identification of degree of blockage and risk factors of heart attack (Invited Paper)** [10982-20]
- 10982 0N **The application of a unified Monte Carlo model in the training of artificial neural networks for the purpose of real-time *in-vivo* sensing of tissue optical properties (Invited Paper)** [10982-22]

---

**SESSION 6 PHASE CHANGE MATERIALS-BASED OPTICAL AND PHOTONIC APPLICATIONS**

---

- 10982 0Q **Reshaping light: reconfigurable photonics enabled by broadband low-loss optical phase change materials (Invited Paper, Rising Researcher Paper)** [10982-25]
- 10982 0T **The use of chalcogenide phase change materials for optical phase control and its plasmonic applications (Invited Paper)** [10982-28]
- 10982 0W **Application of phase change material in tunable optical filters and shutters (Invited Paper)** [10982-31]
- 10982 0X **Reconfigurable infrared spectral imaging with phase change materials (Invited Paper)** [10982-32]

---

**SESSION 7 FLEXIBLE ELECTRONICS FOR THE INDUSTRIAL INTERNET OF THINGS**

---

- 10982 10 **Low cost wireless accelerometer sensor platform with internet-of-things for manufacturing (IOT4MFG) applications (Invited Paper)** [10982-35]
- 10982 12 **Flexible electronics systems and advances (Invited Paper)** [10982-37]

---

**SESSION 8 ORGANIC-INORGANIC STRETCHABLE TECHNOLOGIES**

---

- 10982 13 **Advanced and nano manufacturing research at NSF (Keynote Paper)** [10982-38]
- 10982 14 **Design enabled stretchable electronics: gap mitigation, mirroring and reconfiguration (Invited Paper)** [10982-39]
- 10982 15 **Organic-inorganic heterostructures for stretchable electronics (Invited Paper)** [10982-40]
- 10982 16 **Freestanding electrospun nanofibrous materials embedded in elastomers for stretchable strain sensors (Invited Paper)** [10982-41]

---

**SESSION 9**      **CURRENT TRENDS, CHALLENGES, AND PROSPECTS FOR PHOTONIC MATERIALS, METAMATERIALS AND METASURFACES**

---

- 10982 1A      **Scalable low-power silicon photonic platform for all-solid-state beam steering (Invited Paper)** [10982-45]
- 10982 1D      **Material-dictated fundamental limits to nanophotonic response (Invited Paper)** [10982-48]
- 10982 1E      **Tunable nonlinear and active THz devices based on hybrid graphene metasurfaces (Invited Paper)** [10982-49]
- 10982 1F      **Ultrasensitive optical sensing based on non-Hermitian metasurfaces (Invited Paper)** [10982-50]
- 10982 1I      **Plasmonic and photonic isolators based on the spatiotemporal modulation of graphene (Invited Paper)** [10982-53]

---

**SESSION 10**      **NANO-ENGINEERED STRETCHABLE ELECTRODES: FUNDAMENTALS, FABRICATION AND APPLICATIONS**

---

- 10982 1K      **Energy autonomous eSkin (Invited Paper)** [10982-55]
- 10982 1N      **1D and 2D materials, and flexible substrates (Invited Paper)** [10982-58]
- 10982 1O      **Fully rubbery stretchable electronics, sensors, and smart skins (Invited Paper)** [10982-59]

---

**SESSION 11**      **BIODEGRADABLE ELECTRONICS AND SENSORS**

---

- 10982 1Q      **Fully organic, flexible, and biodegradable components for bioinspired electronics (Invited Paper)** [10982-61]
- 10982 1S      **Biodegradable piezoelectric force sensor (Invited Paper, Rising Researcher Paper)** [10982-63]
- 10982 1U      **Silicon transient electronics: bioresorbable to hardware-secure device (Invited Paper)** [10982-65]

---

**SESSION 12**      **FLYING TECHNOLOGY THAT YOU HAVE NOT FLOWN BEFORE...**

---

- 10982 20      **FIREBall-2: advancing TRL while doing proof-of-concept astrophysics on a suborbital platform (Invited Paper)** [10982-71]
- 10982 21      **The role of smallsats in scientific exploration and commercialization of space (Invited Paper)** [10982-72]

---

**SESSION 13    NON-DETERMINISTIC AUTONOMY: A HAWKING-MUSK-ESQUE NIGHTMARE?**

---

- 10982 22    **Rise of the machines: how, when and consequences of artificial general intelligence (Invited Paper)** [10982-73]
- 10982 23    **AI and the transcendence of true autonomy (Invited Paper)** [10982-74]
- 10982 24    **The abductive approach to synthetic autonomous reasoning (Invited Paper)** [10982-75]
- 10982 25    **Paths to non-deterministic autonomy: practical and qualitative considerations towards a Hawking-Musk-esque nightmare (Invited Paper)** [10982-76]

---

**SESSION 14    HUMAN MACHINE TEAMING**

---

- 10982 26    **Human perception and prediction of robot swarm motion (Invited Paper)** [10982-77]
- 10982 28    **Navigation and collision avoidance with human augmented supervisory training and fine tuning via reinforcement learning (Invited Paper)** [10982-79]
- 10982 29    **Adversarial aircraft diversion and interception using missile herding techniques (Invited Paper)** [10982-80]
- 10982 2A    **Experiments with sensorimotor games in dynamic human/machine interaction (Invited Paper)** [10982-81]
- 10982 2B    **Assessing multi-agent human-autonomy teams: US Army Robotic Wingman gunnery operations (Invited Paper)** [10982-82]

---

**SESSION 15    BRAIN-INSPIRED SELF-ORGANIZED CONTROL OF MULTI-AGENT SYSTEMS**

---

- 10982 2D    **Cognitive swarming: an approach from the theoretical neuroscience of hippocampal function (Invited Paper)** [10982-84]
- 10982 2E    **A review of swarmalators and their potential in bio-inspired computing (Invited Paper)** [10982-85]
- 10982 2G    **Centralized and decentralized application of neural networks learning optimized solutions of distributed agents (Invited Paper)** [10982-87]
- 10982 2H    **Relating information complexity and training in deep neural networks (Invited Paper)** [10982-88]

---

**SESSION 16 HARSH ENVIRONMENT SENSORS FOR ENERGY APPLICATIONS**

---

- 10982 2K **Study of molten zone profile and defect formation during laser heated pedestal growth (Invited Paper)** [10982-91]
- 10982 2M **Modeling of mechanisms for the creation of an internal clad in sapphire optical fiber using the  ${}^6\text{Li}(n,\alpha){}^3\text{H}$  reaction (Invited Paper)** [10982-93]
- 10982 2N **Single-mode sapphire fiber optic distributed sensing for extreme environments (Invited Paper)** [10982-94]

---

**SESSION 17 IMAGING, SENSING, AND DETECTION FROM MM-W TO THZ**

---

- 10982 2R **THz interconnect for inter-/intra-chip communication (Invited Paper)** [10982-98]
- 10982 2S **Flight of the ReckTangle (Invited Paper)** [10982-99]

---

**SESSION 18 TERAHERTZ ELECTRONICS FOR COMMUNICATIONS AND SENSING**

---

- 10982 2V **Terahertz light amplification of stimulated emission of radiation in current-injection graphene channel transistor (Invited Paper)** [10982-102]
- 10982 2X **3D-printed diffractive terahertz optical elements through computational design (Invited Paper)** [10982-104]

---

**SESSION 19 RECENT ADVANCES AND CURRENT CHALLENGES IN THZ IMAGING**

---

- 10982 2Y **THz photonic and plasmonic devices for sensing and communication applications (Invited Paper)** [10982-105]
- 10982 2Z **Terahertz plasmonic field effect transistors for imaging applications (Invited Paper)** [10982-106]
- 10982 31 **CMOS circuits for terahertz imaging (Invited Paper)** [10982-108]

---

**POSTER SESSION**

---

- 10982 33 **Piezoelectric characterization of boron nitride nanotube-polyurethane composites** [10982-116]
- 10982 34 **Incorporating quantum dots in a Magnesium Fluoride matrix to enable deep-UV sensitivity for standard silicon based imaging detectors** [10982-117]

- 10982 36 **A miniaturized optical fiber tip high-temperature sensor based on concave-shaped Fabry-Perot cavity** [10982-119]
- 10982 38 **Dielectrophoretic nanoparticle injector for photonic manipulator systems** [10982-121]
- 10982 39 **Capacitive micro-force sensor as a transfer standard for verification and calibration of nanoindentation instruments** [10982-122]
- 10982 3A **A MEMS IR optical chopper based on subwavelength structures** [10982-123]
- 10982 3G **Analysis of data-driven processing in inertial measurement systems for wireless optical communication applications** [10982-113]
- 10982 3H **Ion milled facet for direct coupling to optical waveguides** [10982-114]



## Authors

Numbers in the index correspond to the last two digits of the seven-digit citation identifier (CID) article numbering system used in Proceedings of SPIE. The first five digits reflect the volume number. Base 36 numbering is employed for the last two digits and indicates the order of articles within the volume. Numbers start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B...0Z, followed by 10-1Z, 20-2Z, etc.

Ahmad, Zeshan, 31  
Alam, Md. Ashraf, 0L  
Alcheikh, Nouha, 14  
Argyropoulos, Christos, 1E  
Augustin, Ramona, 20  
Bae, Jae-Young, 1U  
Baker, Anthony L., 2B  
Baker, Victor R., 24  
Balard, Philippe, 20  
Balthazor, R., 0I  
Balvin, Manuel A., 0F  
Banerji, Sourangsu, 2X  
Bedi, Vijit, 3G  
Bera, S., 2K  
Bettstetter, Christian, 2E  
Bhaskaran, Suraj, 34  
Birri, Anthony, 2M, 2N  
Blanchard, Patrick, 20  
Blue, Thomas E., 2M, 2N  
Bohlin, Bridget, 0Q  
Boubanga-Tombet, S., 2V  
Boulanger, Andrew J., 2N  
Bowman, Elizabeth K., 0J  
Bray, Nicolas, 20  
Brewer, Ralph W., 2B  
Brinckerhoff, William B., 0F  
Burden, Samuel A., 2A  
Boric, M., 2K  
Burt, Joe, 2I  
Byreddy, Pranith R., 31  
Cain, Matthew S., 26  
Canady, Jonroy, 2B  
Candia, Geovanni, 0X  
Carignano, Alberto, 0B  
Chang, You-Chia, 1A  
Chasnov, Benjamin, 2A  
Che, Xiaoyu, 06  
Chen, Pai-Yen, 1F  
Choi, Sung-Geon, 1U  
Choi, Wooyeol, 31  
Chorpening, B., 2K  
Chou, Jeffrey B., 0Q  
Chu, Sang-Hyon, 33  
Cooper, Khershed P., 13  
Cornish, Timothy, 0F  
Correas-Serrano, D., 11  
Crabill, Marty, 20  
Curry, Eli J., 1S  
Curtis, Jess W., 29  
Dahiya, Ravinder, 1K  
Damdam, Asrar, 14  
Deglau, David M., 0G  
Ding, Xuan, 2R  
Ding, Yichun, 16  
Doronin, Alexander, 0N  
Doucette, Emily A., 29  
Du, Qingyang, 0Q  
Elsila, Jamie, 0F  
Englund, Dirk, 3H  
Evrard, Jean, 20  
Fanto, Michael, 3H  
Farhat, Mohamed, 1F  
Fay, Catharine, 33  
Fellin, Christopher R., 0B  
Ferrance, Jerome, 0F  
Fink, Wolfgang, 25  
Flores, Elias, 0X  
Foster, Amy C., 0H  
Gain, Alex, 2H  
Ganel, Opher, 21  
Garcia Nunez, Carlos, 1K  
Getty, Stephanie A., 0F  
Gomes, Albert, 20  
Gomez-Diaz, J. S., 11  
Gonçalves, Claudia, 0Q  
Grange, Robert, 20  
Gross, Julia, 20  
Grubisic, Andrej, 0F  
Gu, Qun Jane, 2R  
Gu, Tian, 0Q  
Guller, Ozge, 05  
Guo, L. Jay, 0W  
Guo, Tianjing, 1E  
Hagopian, John, 0F  
Hamden, Erika T., 20  
Hess, Larry, 0F  
Hiller, Karla, 3A  
Hoadley, Keri, 20  
Hu, Juejun, 0Q  
Huang, Jie, 36  
Huang, Philip M., 0G  
Hughes, David H., 3G  
Humali, Eray, 05  
Hussain, Muhammad, 14  
Hwang, Grace M., 2D  
Islam, Saif, 05  
Jafari, Mohsen, 0W  
Jewell, April, 20

Ji, Xingchen, 1A  
 Jimenez Gordillo, Oscar A., 1A  
 Johnston, Trevor G., 0B  
 Jones, Joshua T., 2M, 2N  
 Kang, Myungkoo, 0Q  
 Kang, Seung-Kyun, 1U  
 Karaagac, Hakan, 05  
 Kim, Dae-Yeon, 3I  
 Knap, W., 2V  
 Knowles, Alexander, 34  
 Kong, Yong Lin, 0C  
 Kossey, Michael, 0H  
 Kotecki, Carl, 0F  
 Kott, Tomek, 0H  
 Kurfess, Thomas R., 10  
 Kurth, Steffen, 3A  
 Kyne, Gillian, 20  
 Lee, Dongwon, 33  
 Lee, Ju-Yong, 1U  
 Lee, Kangmu, 0X  
 Lee, Seung-Yeol, 0T  
 Li, Junying, 0Q  
 Li, Xiang, 0F  
 Liberman, Vladimir, 0Q  
 Licitra, Ryan A., 29  
 Lim, Lucy F., 0F  
 Limon, Michele, 20  
 Lingner, Nicole, 20  
 Lipson, Michal, 1A  
 Liu, B., 2K  
 Liu, Xiaoguang, 2R  
 Lorentz, Steven R., 0G  
 Lu, Tsung-Ju, 3H  
 Lyshevski, Sergey E., 3G  
 MacFarlane, Neil, 0H  
 Maldonado, C., 0I  
 Malowicki, John, 3G  
 Manjakkal, Libu, 1K  
 Martin, D. Christopher, 20  
 Maser, Jaykob, 38  
 Matuszewski, Matt, 20  
 Maxey, Christopher J., 28  
 McHarg, M., 0I  
 Meglinski, Igor, 0N  
 Meinig, Marco, 3A  
 Melso, Nicole, 20  
 Metcalfe, Jason S., 2B  
 Miller, Owen D., 1D  
 Miller, Steven A., 1A  
 Milliard, Bruno, 20  
 Mirc, Frédéri, 20  
 Mohanty, Aseema, 1A  
 Monaco, Joseph D., 2D  
 Montel, Johan, 20  
 Moon, Jeong-Sun, 0X  
 Mosavi, Nelofar, 0H  
 Neale, Andrew J., 29  
 Nelson, Alshakim, 0B  
 Newman, Jensen, 3I  
 Nguyen, Thanh D., 1S  
 Nikulin, Vladimir V., 3G  
 Nikzad, Shouleh, 20  
 Ninkov, Zoran, 34  
 O, Kenneth K., 3I  
 Ohanian, Osgar John, 2M, 2N  
 Ohodnicki, P., 2K  
 O'Keeffe, Kevin, 2E  
 Ong, Hwei Ru, 20  
 Onyilagha, Obiora, 16  
 Osiander, Robert, 0H, 0I  
 O'Sullivan, Donal, 20  
 Otsuji, T., 2V  
 Otto, Thomas, 3A  
 Pal, Ramendra K., 1Q  
 Pala, Nezh, 2Y, 2Z  
 Papadakis, Stergios J., 0G  
 Park, Cheol, 33  
 Parlak, Mehmet, 05  
 Parsa, Behnoosh, 2A  
 Pascal, Sandrine, 20  
 Patton, Debra, 2B  
 Paul, N. K., 1I  
 Pavel, Monirul Islam, 0L  
 Peksu, Elif, 05  
 Perot, Etienne, 20  
 Pham, Thai, 2I  
 Phare, Christopher T., 1A  
 Picouet, Vincent, 20  
 Pop, Eric, 0X  
 Popov, V. V., 2V  
 Pradhan, Sayantan, 1Q  
 Preble, Stefan, 3H  
 Prieto Rojas, Jhonathan, 15  
 Qaiser, Nadeem, 14  
 Rais-Zadeh, Mina, 0W  
 Ratliff, Lillian J., 2A  
 Richardson, Kathleen, 0Q  
 Rios, Carlos, 0Q  
 Rizk, Charbel, 0H  
 Roberts, Christopher, 0Q  
 Roberts, Samantha P., 1A  
 Robinson, Paul, 0Q  
 Robinson, Ross, 34  
 Rountree, Steven Derek, 2N  
 Rovey, Joshua, 38  
 Ryzhii, V., 2V  
 Saccoccio, Muriel, 20  
 Saleeby, Kyle S., 10  
 Satou, A., 2V  
 Schaefer, Kristin E., 2B  
 Schiminovich, David, 20  
 Schultz, Kevin M., 2D  
 Schwartz, David Eric, 12  
 Seifert, Mario, 3A  
 Sensale-Rodriguez, Berardi, 2X  
 Seo, Hwa-Chang, 0X  
 Serafini, John, 3H  
 Shaffer, Joshua A., 2G  
 Shaikh, Sohail, 14  
 Shakir, Mohsinul Bari, 0L

Shalaginov, Mikhail, 0Q  
Shamwell, E. Jared, 28  
Shao, Qiming, 06  
Shim, Hyunki, 1D  
Shin, Min Chul, 1A  
Shur, Michael, 2Y, 2Z  
Siegelmann, Hava, 2H  
Smiley, Brian, 20  
Smith, Allan W., 0G  
Son, K. Kay, 0X  
Soors, Xavier, 20  
Southard, Adrian E., 0F  
Steidle, Jeffrey, 3H  
Stern, Brian, 1A  
Swartz, William H., 0G  
Tang, Adrian, 2S  
Tapie, Pierre, 20  
Tarbell, Mark A., 23  
Terlemezoglu, Makbule, 05  
Terrile, Richard J., 22  
Thomas, Paul M., 3H  
Valinia, Azita, 2I  
Vibert, Didier, 20  
Wang, Kang, 06  
Watanabe, T., 2V  
Wecker, Julia, 3A  
Wendell, Dawn M., 26  
Williams, Scott, 34  
Wilson, Brandon A., 2M  
Wu, Hao, 06  
Xiang, Dan, 39  
Xu, Huan, 2G  
Xu, Meng, 1Q  
Xu, Zhiwei, 2R  
Yadav, D., 2V  
Yadavalli, Vamsi K., 1Q  
Yalon, Eilam, 0X  
Yamagami, Momona, 2A  
Yang, Eu-Hyeok, 1N  
Ye, Yu, 2R  
Yu, Bo, 2R  
Yu, Cunjiang, 1O  
Yu, Y., 2K  
Yuan, Fuh-Gwo, 33  
Zadka, Moshe, 1A  
Zenone, Isabelle, 20  
Zhang, Kechen, 2D  
Zhang, Qihang, 0Q  
Zhang, Yifei, 0Q  
Zhu, Chen, 36  
Zhu, Yukun, 31  
Zhu, Zhengtao, 16  
Zorrilla, Jose, 20



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- 2 Topological Robustness in Electronic and Photonic Systems and Devices  
**Carlos M. Torres Jr.**, Naval Information Warfare Center Pacific (United States)
- 3 3D Printing of Functional Materials and Devices  
**Michael C. McAlpine**, University of Minnesota, Twin Cities (United States)
- 4 Nano/Micro Technologies Enabling Space Science Missions  
**Romina Nikoukar**, Johns Hopkins University Applied Physics Laboratory, LLC (United States)  
**Robert Osiander**, Johns Hopkins University Applied Physics Laboratory, LLC (United States)
- 5 Applications of Artificial Intelligence in Imaging and Sensing  
**Christopher C. Wilcox**, Air Force Research Laboratory (United States)
- 6 Phase Change Materials-based Optical and Photonic Applications  
**Kyung-ah Son**, HRL Laboratories, LLC (United States)

- 7 Flexible Electronics for the Industrial Internet of Things  
**Benjamin J. Leever**, Air Force Research Laboratory (United States)
- 8 Organic-Inorganic Stretchable Technologies  
**Armando Arpys Arevalo Carreno**, Rochester Institute of Technology  
(United States)
- 9 Current Trends, Challenges, and Prospects for Photonic Materials,  
Metamaterials and Metasurfaces  
**Pai-Yen Chen**, University of Illinois at Chicago (United States)  
**Junsuk Rho**, Pohang University of Science and Technology  
(Korea, Republic of)
- 10 Nano-engineered Stretchable Electrodes: Fundamentals, Fabrication  
and Applications  
**Eui-Hyeok Yang**, Stevens Institute of Technology (United States)
- 11 Biodegradable Electronics and Sensors  
**Nezih Pala**, Florida International University (United States)
- 12 Flying Technology That You Have Not Flown Before...  
**Shouleh Nikzad**, Jet Propulsion Laboratory (United States)
- 13 Non-Deterministic Autonomy: A Hawking-Musk-esque Nightmare?  
**Wolfgang Fink**, The University of Arizona (United States)
- 14 Human Machine Teaming  
**William D. Nothwang**, U.S. Army Research Laboratory (United States)  
**Jamie Lukos**, Space and Naval Warfare Systems Command  
(United States)  
**Gregory M. Gremillion**, University of Maryland, College Park  
(United States)
- 15 Brain-Inspired Self-Organized Control of Multi-Agent Systems  
**Grace M. Hwang**, Johns Hopkins University Applied Physics  
Laboratory, LLC (United States)
- 16 Harsh Environment Sensors for Energy Applications  
**Michael P. Buric**, National Energy Technology Laboratory  
(United States)
- 17 Imaging, Sensing, and Detection from mm-W to THz  
**Adrian J. Tang**, Jet Propulsion Laboratory (United States)
- 18 Terahertz Electronics for Communications and Sensing  
**Michael S. Shur**, Rensselaer Polytechnic Institute (United States)

- 19 Recent Advances and Current Challenges in THz Imaging  
**Durdu O. Guney**, Michigan Technological University (United States)



## Introduction

The 2019 Micro- and Nanotechnology (MNT) Sensors, Systems, and Applications XI Conference within the SPIE Defense and Security Symposium, was held in Baltimore, MD, 14-18 April 2019.

This year was no different than the previous ten trend-setting years of this cutting-edge conference. Once again, thanks to the extraordinary efforts of our session chairs, a total of 19 Conference Sessions were successfully concluded showcasing the exciting breadth and depth of MNT. Exciting sessions captured emerging trends in: Extreme Photon Confinement and Manipulation for Propagation, Sensing and Energy Harvesting; Topological Robustness in Electronic and Photonic Systems and Devices; 3D Printing of Functional Materials and Devices; Nano/Micro Technologies Enabling Space Science Missions; Applications of Artificial Intelligence in Imaging and Sensing; Phase Change Materials-based Optical and Photonic Applications; Flexible Electronics for the Industrial Internet of Things; Organic-Inorganic Stretchable Technologies; Current Trends, Challenges, and Prospects for Photonic Materials, Metamaterials and Metasurfaces; Nano-engineered Stretchable Electrodes: Fundamentals, Fabrication and Applications; Biodegradable Electronics and Sensors; Flying Technology That You Have Not Flown Before...; Non-Deterministic Autonomy: A Hawking-Musk-esque Nightmare?; Human Machine Teaming; Brain-Inspired Self-Organized Control of Multi-Agent Systems; Harsh Environment Sensors for Energy Applications; Imaging, Sensing, and Detection from mm-W to THz; Terahertz Electronics for Communications and Sensing and Recent Advances and Current Challenges in THz Imaging.

It is our sincere hope that the papers within this proceedings volume will provide you, our reader, not only with a snapshot of the programmatic vision behind investments made in each MNT topic area but also its current state of scientific and technological development. Enjoy!

**Thomas George**  
**Saif Islam**

