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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