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Thomas George
Achyut K. Dutta
M. Saif Islam
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Introduction

The 2015 Micro- and Nanotechnology (MNT) Sensors, Systems, and Applications VII conference was, once again, fortunate to have an exciting program that spanned all 5 days (Monday through Friday) of the SPIE Defense and Security Symposium, held in Baltimore, Maryland, 20–24 April 2015.

True to its established tradition, a total of 21 Conference Sessions were successfully concluded within this conference on a broad spectrum of exciting topics ranging from: future trends in flexible, stretchable and transient electronics; bio-modulation achieved via low-intensity ultrasound and laser energy delivery; next generation graphene, transition metal chalcogenide and black phosphorous 2D materials and devices; surface-enhanced spectroscopies for ultrasensitive sensing; MNT-sensors and materials for oil and gas applications; harsh environment sensors for energy applications; micro-autonomous systems technology; novel beam control optics; ultra-fast bandgap photonics; terahertz and mid-IR photonics; quantum cascade lasers (QCLs) and their application to standoff chemical detection. Of particular interest was a new session on the emerging field of MNT Origami: fusing art and science to create novel devices and structures.

Successful joint sessions were conducted with the Sensors for Extreme Harsh Environments conference (9491), the Unmanned Systems Technology conference (9468), the Open Architecture/Open Business Model Net-Centric Systems and Defense Transformation conference (9479), the Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) Sensing conference (9455), and the Advanced Environmental, Chemical, and Biological Sensing Technologies conference (9486).

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
Achyut Dutta