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Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) Sensing X

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Editors

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Introduction

This year we held our tenth annual conference for Chemical, Biological, Radiological, Nuclear and Explosives (CBRNE) sensing at the SPIE Defense, Security and Sensing (DSS) Symposium in Orlando, Florida. In celebration of our tenth anniversary we had a topical keynote address to open each of the sensing domains.

Johnathan Kiel, of the Air Force Research Laboratory, gave a wonderful talk titled "Pathogenic ecology: Where have all the pathogens gone? Anthrax: a classic case", giving new insight into the lifecycle of natural anthrax outbreaks. Michael V. Henley, also of the Air Force Research Laboratory, discussed advances in modeling the atmospheric chemistry of TICs for chemical sensing. David S. Moore, of Los Alamos National Laboratory, elegantly described new advanced spectroscopic techniques and their application for the optimal dynamic detection of explosives at standoff. And finally, Harold R. McHugh, Department of Energy, discussed the current trends in radiation and nuclear sensing. While over the past decade we have seen continuous advancement in capabilities for the detection and identification of threat agents, these keynote talks point toward the advances we hope to see in the next decade.

Through the CBRNE Sensing Conference, we have seen exciting and promising technologies for point and standoff detection of CBRNE agents. For point detection, there are a variety of classical and emerging technologies, some of which promise affordability and reliability for combined CBE detection. For standoff detection, new sources like tunable quantum cascade lasers and non-linear spectroscopies offer the potential for greater standoff detection. However, the detection and identification of explosives at operationally-significant ranges continues to be a difficult problem to solve.

The strength and importance of the SPIE DSS Symposium is that it provides an unprecedented international forum for authors from government, industry, and academia to gather and address a wide variety of sensing issues and technologies. The authors in these conference proceedings represent nearly an equal one-third partition among those groups and are leaders in each of their respective fields. We want to take this time to particularly thank the members of the program committee for helping us plan, organize, and orchestrate this year's conference. They each work behind scenes all year long to make this conference not only possible, but truly a first rate affair. Whether they come from government laboratories, industry, or academia they bring a tremendous amount of energy and professionalism to help run this conference and make it successful.

We hope that each of you will find value in the proceedings from this year's conference.

Augustus W. Fountain III
Patrick J. Gardner