

PROCEEDINGS OF SPIE

***Chemical, Biological,  
Radiological, Nuclear, and  
Explosives (CBRNE) Sensing IX***

**Augustus Way Fountain III  
Patrick J. Gardner**  
*Editors*

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## Introduction

This year at the SPIE Defense and Security Symposium in Orlando, Florida, USA, we held our ninth annual conference for chemical and biological sensing, and due to a continuing interest in general threat detection, we expanded the 2008 conference to also include sensing of radiological, nuclear, and explosives materials. Over the last nine years, we have seen continuous advancement in capabilities for the detection and identification of threat agents. While agent sensitivity and selectivity continues to improve, system cost and complexity show downward movement.

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, there are a small number of passive or active methods at infrared frequencies for chemical detection; however, standoff detection and identification of explosives and biological agents at operationally significant ranges continues to be a difficult problem to solve.

The strength and importance of the SPIE Defense and Security 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 learn as much as we did by reading and editing each of these papers. Our hope is that you, the reader, will find value as well in the proceedings from this year's conference.

**Augustus W. Fountain III**  
**Patrick J. Gardner**

