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Nanophotonics and Macrophotonics for Space Environments VIII

**Edward W. Taylor
David A. Cardimona**
Editors

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(United States)

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Gary B. Hughes, California Polytechnic State University, San Luis Obispo (United States)
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Michael D. Watson, NASA Marshall Space Flight Center
(United States)
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- 7 Advances in Detector Technologies I
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Introduction

The eighth Nanophotonics and Macrophotonics for Space Environment Conference (NMSE VIII) was very well attended and attracted international authors from various universities, major industries and manufacturers, the United States Department of Defense, NASA and small-business enterprises.

A large number of invited papers were presented, as well as an outstanding keynote presentation by past SPIE President Professor Richard B. Hoover of the University of Buckingham and Athens State University. His presentation dealt with "Microfossils and biomolecules in carbonaceous meteorites: implications to the possibility of life in water-bearing asteroids and comets". This presentation and the excellent extensive session on photonic "Technology for Planetary Defense" attracted much audience attention and discussion and potentially heralded the expansion of future conference topics towards new applications for advancing radiation hardened photonic components, systems and capabilities in harsh space environments.

The diversification of presented paper topics included reported advances in: biopolymer-based photonic materials; next-generation solar cells; efficient photon harvesting; radiation hardening and testing results of various new and emerging photodetectors, vertical cavity surface emitting laser arrays, photonic circuits, acoustical-optical devices, optical switches, fiber optic responses in harsh environments and embedded crystal fiber Bragg gratings for sensing applications in space structures and satellites.

As the requirement for ever increasing the efficiency and radiation hardness of photonic technologies necessary for advancing space applications is sought by DOD entities, commercial communication systems, planetary defense organizations, and as the exploration of our universe continues, we can expect that the scientific community will rise to meeting the challenge. Forums such as this SPIE conference will be pivotal and important in bringing like-minded individuals to the forefront for sharing their research and development achievements for the betterment of mankind.

We look forward to convening the next SPIE NMSE conference dealing with advances in nanophotonic and macrophtonic technologies and expansion of the new photonic topic areas we encountered at the NMSE VIII conference.

The chairs wish to thank the NMSE VIII program committee, co-chairs, session chairs, authors and especially the SPIE staff for their assistance and efforts to making the conference a success.

Edward W. Taylor
David A. Cardimona

