

PROCEEDINGS OF SPIE

# ***Infrared Sensors, Devices, and Applications IX***

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**14–15 August 2019**  
**San Diego, California, United States**

*Sponsored and Published by*  
SPIE

**Volume 11129**

Proceedings of SPIE 0277-786X, V. 11129

SPIE is an international society advancing an interdisciplinary approach to the science and application of light.

Infrared Sensors, Devices, and Applications IX, edited by Paul D. LeVan,  
Priyalal Wijewarnasuriya, Ashok K. Sood, Proc. of SPIE Vol. 11129, 1112901  
© 2019 SPIE · CCC code: 0277-786X/19/\$18 · doi: 10.1117/12.2551562

Proc. of SPIE Vol. 11129 1112901-1

The papers in this volume were part of the technical conference cited on the cover and title page. Papers were selected and subject to review by the editors and conference program committee. Some conference presentations may not be available for publication. Additional papers and presentation recordings may be available online in the SPIE Digital Library at SPIEDigitalLibrary.org.

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Author(s), "Title of Paper," in *Infrared Sensors, Devices, and Applications IX*, edited by Paul D. LeVan, Priyalal Wijewarnasuriya, Ashok K. Sood, Proceedings of SPIE Vol. 11129 (SPIE, Bellingham, WA, 2019) Seven-digit Article CID Number.

ISSN: 0277-786X  
ISSN: 1996-756X (electronic)

ISBN: 9781510629516  
ISBN: 9781510629523 (electronic)

Published by

**SPIE**

P.O. Box 10, Bellingham, Washington 98227-0010 USA  
Telephone +1 360 676 3290 (Pacific Time) · Fax +1 360 647 1445  
SPIE.org

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## Introduction

This proceedings volume is a collection of papers of invited and contributed presentations at Infrared Sensors, Devices, and Applications X, held on 14-15 August 2019 at the San Diego Convention Center as part of SPIE Optics + Photonics 2019.

The Infrared Sensors, Devices, and Applications conference has roots going back several decades, to when the SPIE San Diego conference venue was the Town and Country Hotel. Major breakthroughs in cryogenically-cooled semiconductor detector technology go back to the decades following its inception. This marks the tenth year of the Infrared Sensors, Devices, and Applications conference in its present form, as revamped by an earlier conference committee under Dr. Dereniak's leadership. The scope of the conference has since been extended to include numerous applications of infrared for medical diagnostics, as well as structural health monitoring, remote sensing, surveillance, and a variety of other civil and military applications.

Infrared Sensors, Devices, and Applications X proved to be an interesting conference this year. A total of 20 papers (including one invited presentation and several posters) were presented on a variety of interesting topics. Highlights run the gamut and include presentations on a novel delta-doped nBn (n-type, Barrier, n-type semiconductor architecture) approach that emphasized growth architectures that maintain strong conduction band blocking efficiency for higher levels of sensitivity. Our invited presentation described new goals for strained layer superlattice sensor arrays that will result in higher operating temperature to accommodate small satellite flight opportunities. The conference was well attended, and the inevitable last-minute cancellations were accommodated without excessive disruption to the overall conference flow.

The manuscripts included in this proceedings volume cover wide-ranging achievements in the current fields of both infrared technologies and the widespread employment of the infrared for a range of applications. We hope that readers find these proceedings stimulating, as well as helpful for their future research and development endeavors.

We look forward to continuing Infrared Sensors, Devices, and Applications as part of SPIE Optics + Photonics 2020. To keep this conference topical and the levels of interest high, we are developing a new session for 2020 on the potential of infrared technology to ameliorate global climate change.

Finally, we would like to express our sincere gratitude to the committee members and all of the presenters and attendees of the conference, as well as to the SPIE staff for their contributions.

**Paul “Wije” Ashok**