PROGRAM

The 2025 US WORKSHOP on II-VI AND INFRARED MATERIALS

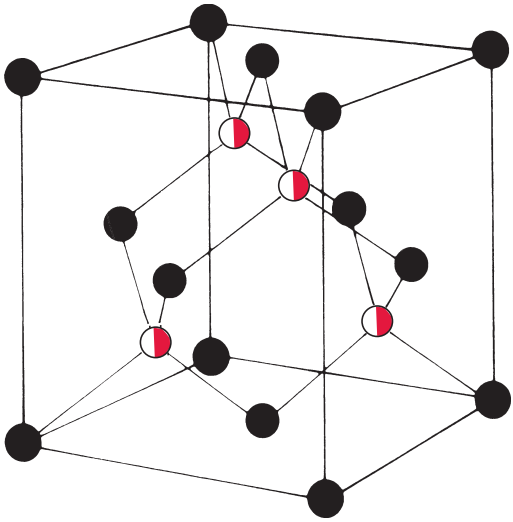
Embassy Suites Chicago
Downtown Magnificent Mile, Chicago, IL
September 29 – October 2, 2025

IR Detectors and Materials

- II-VI and III-V Materials
- UV
- Gamma-Ray and X-Ray
- Superlattices
- Focal Plane Arrays
- Photovoltaic
- CdZnTe
- HgCdTe
- ZnO and ZnS
- Substrates
- History of IR Detectors

Sessions

- Industrial Overviews
- III-V Alloys and Superlattices
- Avalanche Photodiodes
- Systems and Devices
- Defects and Doping
- Radiation
- Emerging Infrared Materials
- Heteroepitaxy
- Modeling



Participating Organizations

Air Force Research Laboratory
National Renewable Energy Laboratory
US Army C5ISR Center
US Army DEVCOM Army Research Laboratory
NASA Goddard
US Naval Surface Warfare Center (NSWC)

Endorsed by

The American Physical Society

Supported by

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www.ii-vi workshop.org

Promotional Partners and Exhibitors

The 2025 II-VI Workshop would like to express sincere thanks to our supporting organizations and for the contriutions from our very generous corporate sponsors.

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Welcome

In the 44 years since the first MCT Workshop was held in 1981, the technology of II-VI and infrared devices, including those based on HgCdTe and III-V semiconductor alloys and superlattices, has significantly matured and broadened. Sophisticated electro-optic systems exploiting properties of these materials are critical to many fields including national security, medicine, industrial process monitoring, scientific instrumentation, astronomy, space-based earth observation, and energy production. The II-VI and Infrared Materials Workshop plays a vital role in this technological evolution. It provides the principal open forum for the exchange of information relative to theory and experiment, synthesis, and analysis, and it brings together university, governmental, and industrial research in a highly interactive manner. In addition, because other infrared materials are now a large portion of our community's research, we have renamed the conference to reflect this area of content focus.

- To encourage in-depth discussion and audience participation, the Workshop combines conventional oral presentations with sufficient time allocated for questions and answers.
- To broaden exposure without sacrificing depth, invited speakers offer insight into areas relevant to II-VI and infrared materials.
- To ensure dissemination of results, submitted peer-reviewed full-length papers will appear in the *Journal of Electronic Materials.*

The Workshop will focus on fundamental research on the major scientific problems in II-VI and infrared materials. Its primary goal is to promote an understanding of the relationship among the physical and chemical properties and leverage this understanding into manufacturing and performance improvements.

Informal discussions among participants are strongly encouraged and ample time for paper discussion and individual interactions has been scheduled. To foster these interactions, lunch will be provided on Tuesday and Wednesday of the Workshop, while a Wine and Cheese Reception has been scheduled for Tuesday evening.

INVITED SPEAKERS

The 2025 II-VI Workshop is pleased to welcome this year's invited speakers:

Plenary Speaker:
Vincent Cowan, *Air Force Research Laboratory*
"Detector Material, ROIC, & FPA Development/Qualification for National Security Space Applications"

Invited Speakers:
Fikri Aqariden, *Leonardo DRS*
"LWIR and MWIR HgCdTe-based Focal Plane Arrays Using High Density Vertically Integrated Photodiode (HDVIP) Technology"

Burak Asici, *ASELSAN, Inc.*
"Optimization of FPA-Dewar Integration Process of HgCdTe Infrared Detectors"

Peter Burke, *Lockheed Martin*
"Sensitivity Uniformity Comparison of High Performance III-V and II-VI Semiconductors for Long Wavelength Infrared Sensing"

Mike Carmody, *Teledyne Imaging Sensors*
"HgCdTe IR Technology at Teledyne: A Production Perspective"

Debashis Chanda, *University of Central Florida*
"MCT-Graphene Heterostructure for Room Temperature LWIR Imaging"

Kevin Doyle, *Raytheon Vision Systems*
"Uniform HgCdTe Growth on Large Area Substrates by Molecular Beam Epitaxy"

Olivier Gravrand, *CEA-Leti*
"Cooled IR Imaging Developments at CEA-LETI and Associated Characterizations"

Michael Grzesik, *HRL*
"Antimonide Based Avalanche Photodiodes"

Anderson Janotti, *University of Delaware*
"Advances in II-V and III-V Semiconductors: Band Engineering, Doping Limits, and Nanoparticle-Induced Electronic Modifications"

Brian Korgel, *University of Texas Austin*
"Application of HgTe Colloidal Quantum Dots in Infrared Photodetectors"

Julie Logan, *Air Force Research Laboratory*
"Experimental Evaluation of the Proton Non-Ionizing Energy Loss in II-V and III-V Materials"

Kunal Mukherjee, *Stanford University*
"Epitaxial integration of IV-VI semiconductors towards mid-IR light emitters and phase change devices"

John Prineas, *University of Iowa*
"Towards Higher Power/Efficiency Multispectral Mid-Infrared Type-II III-V Superlattice LEDs"

Madhu Reddy, *Raytheon Vision Systems*
"Advanced MBE for High Volume Production of Large-Area HgCdTe Wafers"

Johan Rothman, *CEA-Leti*
"Linear Mode Photon Counting with HgCdTe APDs : The Scalable Solution for Quantum Optics and Deep Space Communications"

Laurent Rubaldo, *Lynred*
"HOT and Small Pitch Infrared Detectors Development at LYNRED"

Xiaoli Sun, *NASA*
"HgCdTe APD Arrays for Spectroscopic Lidars from Short to Mid Wave Infrared Wavelengths"

Eric Tervo, *University of Wisconsin-Madison*
"Emerging Energy Applications of Infrared Optoelectronic Devices"

Silviu Velicu, *EPIR, Inc.*
"Current Status of HgCdTe Infrared Technology at EPIR"

James Wilson, *Leonardo*
"Infrared Detector Development at Leonardo, UK"

Tutorial

Monday, September 29, 2025
5-6 pm
Enrico Bellotti, *Boston University*
"Numerical Modeling of Infrared Detectors: State of the Art and Open Problems"

WORKSHOP CO-CHAIRS

Siva Sivananthan
Sivananthan Laboratories, Inc.

Borzoyeh Shojaei
Teledyne Imaging Sensors

Eric Piquette
Teledyne Imaging Sensors

PROGRAM COMMITTEE

Tony Almeida, *U.S. Army CCDC C5ISR NVESD*
Fikri Aqariden, *Leonardo DRS Electro-Optical Infrared Systems (EOIS)*
Jose M. Arias, *CACI /U.S. Army CCDC C5ISR NVESD*
Enrico Bellotti, *Boston University*
Joseph Burns, *Air Force Research Laboratory*
Nibir Dhar, *Virginia Commonwealth University*
Chad Fulk, *HRL Laboratories LLC*
Tim Gessert, *National Renewable Energy Laboratory*
Scott Johnson, *Senior Member*
Dan Lofgreen, *RTX*
Pradip Mitra, *Leonardo DRS, Electro-Optical and Infrared Systems (EOIS)*
Jill Nolde, *Naval Research laboratory*
Joe Pellegrino, *Army NVESD*
Marion Reine, *Infrared Detectors*
Jonathan Schuster, *DEVCOM Army Research Laboratory*
Silviu Velicu, *EPIR, Inc.*
Priyalal Wijewarnasuriya, *Raytheon Vision Systems*

WORKSHOP COORDINATOR

Palisades Convention Management
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590 Territorial Drive, Unit H
Bolingbrook, IL 60440

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WORKSHOP PARTICIPATING ORGANIZATIONS

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National Renewable Energy Laboratory

US Army C5ISR Center

US Army DEVCOM Army Research Laboratory

NASA Goddard

US Naval Surface Warfare Center (NSWC)

Endorsed by
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WORKSHOP PARTICULARS

LOCATION AND DATE

The 2025 II-VI and Infrared Materials Workshop will be held September 29 to October 2, 2025, at the Embassy Suites by Hilton Chicago Downtown Magnificent Mile.

WORKSHOP CHECK-IN

Attendees arriving on Monday, September 29, will be able to pick up their badge and Workshop material at the II-VI Registration Desk between 4:00 and 6:30 pm.

Please see below for registration hours for the rest of the week:

Attendees can pick up their Workshop materials at the II-VI Registration Desk:
Tuesday, September 30, 2025..... **7:30 am – 6:00 pm**
Wednesday, October 1, 2025..... **7:30 am – 4:30 pm**
Thursday, October 2, 2025..... **8:00 am – 12:00 pm**

LUNCHES

Lunches will be served in a section of the hotel on Tuesday and Wednesday. To keep the Workshop on schedule, attendees are encouraged to participate.

WINE AND CHEESE/TABLETOP DISPLAYS

Following the presentations on Tuesday, a Wine and Cheese Reception will take place from 5:00 to 6:30 pm to help promote informal discussion and attendee interaction. The Wine and Cheese Reception will be accompanied by several tabletop displays from commercial vendors showing products of interest to the II-VI community. The tabletops will also be on view during the day on Tuesday, Wednesday, and Thursday.

EXHIBIT HOURS:

Tuesday, September 30, 2025..... **12:00 pm – 6:30 pm**
Wednesday, October 1, 2025..... **9:00 am – 4:30 pm**
Thursday, October 2, 2025..... **9:00 am – 12:30 pm**

Please visit our supporting exhibitors in the area near registration during the above times.

BOOK OF EXTENDED ABSTRACTS

A copy (digital or soft cover) of the *Extended Abstracts* will be distributed to all attendees at the Workshop. The Extended Abstracts will contain summaries of all oral papers presented at the Workshop.

WORKSHOP PROCEEDINGS

The II-VI and Infrared Materials Workshop papers will be published in a special issue of the *Journal of Electronic Materials*. The Proceedings will contain full-length refereed versions of papers presented at the Workshop. A copy of the *Workshop Proceedings* (electronic version) is included with the registration fee.

All authors are recommended to submit a manuscript of their work for peer review and publication in the Proceedings.

INSTRUCTIONS TO AUTHORS PLANNING TO SUBMIT FULL-LENGTH MANUSCRIPTS

Submit your 2025 U.S. Workshop on II-VI and Infrared Materials paper to the *Journal of Electronic Materials*. We are asking all authors to submit their full II-VI and Infrared Materials Workshop manuscripts for online peer review using the link provided by the *Journal of Electronic Materials* (JEM).

The online manuscript submission will close on **November 28, 2025.**

Go to www.editorialmanager.com/jems/ and be sure to select the article type SI: 2025 U.S. Workshop on Physics and Chemistry of II-VI Materials from the dropdown menu.

Manuscripts will be evaluated according to the same high standards as would be applied to any article published in the journal. Authors are encouraged to read carefully and comply with the Instructions for Authors on the JEM website. Manuscripts submitted after the deadline may not be considered for the collection; however, late submissions may still be considered for publication in another issue of the journal as an original article.

PROGRAM

MONDAY, SEPTEMBER 29, 2025

4:00 – 6:30 pm	Workshop Registration Check-In
5:00 – 6:00 pm	Tutorial by **Enrico Bellotti,** *Boston University*

TUESDAY, SEPTEMBER 30, 2025

7:30 – 6:00 pm	Registration
7:30 – 9:30 am	Continental Breakfast
8:30 – 8:45 am	Welcoming Remarks
8:45 – 9:15 am	Plenary Address by **Vincent Cowan,** *Air Force Research Laboratory*
9:15 – 10:15 am	Session 1: Industrial Overview I
10:15 – 10:30 am	**BREAK**
10:30 – 12:00 pm	Session 2: III-V Alloys and Superlattices
12:00 – 1:15 pm	**LUNCH**
1:15 – 3:15 pm	Session 3: Avalanche Photodiodes
3:15 – 3:30 pm	**BREAK**
3:30 – 5:00 pm	Session 4: Systems and Devices
5:00 – 6:30 pm	**TABLETOP EXHIBITS WITH WINE & CHEESE RECEPTION**

WEDNESDAY, OCTOBER 1, 2025

7:30 – 4:30 pm	Registration
7:30 – 9:30 am	Continental Breakfast
8:30 – 8:45 am	Welcoming Remarks
8:45 – 9:45 am	Session 5: Industrial Overview II
9:45 – 10:00 am	**BREAK**
10:00 – 11:30 am	Session 6: Defects and Doping
11:30 – 1:15 pm	**LUNCH**
1:15 – 2:30 pm	Session 7: Radiation
2:30 – 2:45 pm	**BREAK**
2:45 – 4:15 pm	Session 8: Emerging Infrared Materials
4:15 – 4:30 pm	**BREAK**
4:30 – 5:45 pm	Session 8 Emerging Infrared Materials (cont.)

THURSDAY, OCTOBER 2, 2025

8:00 – 12:00 pm	Registration
7:30 – 9:30 am	Continental Breakfast
8:30 – 8:45 am	Welcoming Remarks
8:45 – 9:45 am	Session 9: Industrial Overview III
9:45 – 10:45 am	Session 10: Hetereoepitaxy
10:45 - 11:00 am	**BREAK**
11:00 – 11:30 am	Session 10: Hetereoepitaxy (cont.)
11:30 – 12:30 pm	Session 11: Modeling
12:30 pm	**CASSELMAN/SPICER BEST STUDENT PAPER AWARD**

MONDAY, SEPTEMBER 29, 2025
Ballroom ABCD

Workshop Registration Check-In **(4:00 - 06:30 PM)**

TUTORIAL
5:00 - 6:00 PM

Numerical Modeling of Infrared Detectors: State of the Art and Open Problems
Enrico Bellotti, Boston University, Boston, MA, US

TUESDAY, SEPTEMBER 30, 2025
Ballroom ABCD

Workshop Registration Check-In **(7:30 AM - 6:00 PM)**

Welcome by 2025 Workshop Co-Chairs **(8:30 - 8:45 AM)**

Siva Sivananthan,
Sivananthan Laboratories, Inc., Bolingbrook, IL, US
Borzoyeh Shojaei,
Teledyne Imaging Sensors, Camarillo, CA, US
Eric Piquette,
Teledyne Imaging Sensors, Camarillo, CA, US

PLENARY SESSION
8:45 - 9:15 AM

P.1:
Detector Material, ROIC, & FPA Development/Qualification for National Security Space Applications

Vincent Cowan
Air Force Research Laboratory, Kirtland, NM, US

Session 1: Industrial Overview I
9:15 - 10:15 AM

Chair: *Siva Sivananthan, Sivanathan Laboratories, Inc.*

1.1:
Invited Paper: HgCdTe IR Technology at Teledyne – A Production Perspective (9:15 AM)
Mike Carmody
Teledyne Imaging Sensors, Camarillo, CA, US

1.2:
Invited Paper: Current Status of HgCdTe Infrared Technology at EPIR (9:45 AM)
Silviu Velicu
EPIR, Inc, Bolingbrook, IL, US

BREAK (10:15 - 10:30 AM)

Session 2: III-V Alloys and Superlattices
10:30 AM - 12:00 PM

Chair: *Chad Fulk, HRL Laboratories, LLC*

2.1:
Invited Paper: Sensitivity Uniformity Comparison of High Performance III-V and II-VI Semiconductors for Long Wavelength Infrared Sensing (10:30 AM)
Peter Burke, Ellen Chang, Nathaniel Wilson, David Browne, Gale Petrich, Robert Jones, Seth Bartman, Rick Roehl
Lockheed Martin, Goleta, CA, US

2.2:
Invited Paper: Towards Higher Power/Efficiency Multispectral Mid-Infrared Type-II III-V Superlattice LEDs (11:00 AM)
John Prineas
University of Iowa, Iowa City, IA, US

2.3:
Student Paper: EBIC Characterization of Vertical Transport of Minority Carriers in Gallium-Free Type-II Superlattices for Infrared Detectors (11:30 AM)
Baptiste Gonon-Mathie, Cyril Cervera, Nicolas Baier, Romuald Contie, Olivier Gravrand
CEA-LETI. Grenoble, France
Nicolas Péré-Laperne
LYNRED, Veurey-Voroize, France
Axel Evirgen
III-V Lab, Palaiseau, France
Philippe Christol
ES, University Montpellier, Montpellier, France

2.4: Auger Recombination in Type-II Superlattices: a Nonequilibrium Green's Function Study (11:45 AM)
Jesus Gonzalez Montoya, Alberto Tibaldi, Michele Goano, Francesco Bertazzi
Politecnico di Torino, Turin, Italy
Enrico Bellotti
Boston University. Boston, MA, US

LUNCH (12:00 – 1:15 PM)

Session 3: Avalanche Photodiodes
1:15 - 3:15 PM

Chair: *Pradip Mitra, Leonardo DRS, Electro-Optical and Infrared Systems (EOIS)*

3.1:
Invited Paper: HgCdTe APD Arrays for Spectroscopic Lidars from SWIR to MWIR (1:15 PM)
Xiaoli Sun, Daniel Cremons
NASA Goddard Space Flight Center, Greenbelt, MD, US

3.2:
Invited Paper: Linear Mode Photon Counting with HgCdTe APDs : The Scalable Solution for Quantum Optics and Deep Space Communications (1:45 PM)
Johan Rothman, Arthur Charrier, Timothée Guerra, Julie Abergel, Antoine Coquiard, Cederic Rostaing, Amoury Mavel, Sebastien Renet, Frederic Berger, Aurelie Vandeneynde, Sandy Brunet-Manquat, Jean-Alain Nicolas, Jean-Marc Moro
CEA-Leti, Grenoble, France

3.3:
Invited Paper: Antimonide Based Avalanche Photodiodes (2:15 PM)
Michael Grzesik, Minh Nguyen, Ryan Cottier, Evan Guo, Mary Chen
HRL, Malibu, CA, US

3.4: Monte Carlo Design of High-Performance HgCdTe Avalanche Photodiode (APD) (2:45 PM)
Timothy Guerra, Arthur Charrier, Julie Abergel, Johan Rothman
CEA-Leti, Grenoble, France

3.5: Characterization of High Speed SAPHIRA HgCdTe Avalanche Photodiodes for Space Lidar Applications (3:00 PM)
Guangning Yang, Xiaoli Sun, Wei Lu
NASA Goddard Space Flight Center, Greenbelt, MD, US
Ian Baker, Matthew Hicks
Leonardo UK, Southampton, United Kingdom
Sachidadanda Babu
NASA Earth Science Technology Office, Greenbelt, MD, US

BREAK (3:15 – 3:30 PM)

Session 4: Systems and Devices
3:30 - 5:00 PM

Chair: *Priyalal Wijewarnasuriya, Raytheon Vision Systems*

4.1:
Invited Paper: Optimization of FPA-Dewar Integration Process of HgCdTe Infrared Detectors (3:30 PM)
Burak Asici, Berna Barutcu Ercan, Hasan Sagdic
ASELSAN, Ankara, Turkey

4.2:
A Thermal Stress-Aware Framework forIRFPA Packaging (4:00 PM)
Sushant Sonde, Yong Chang, Silviu Velicu
EPIR, Bolingbrook, IL, US
Kiran Sasikumar
Argonne National Laboratory, Lemont, IL, US
Vineet Kumar, Subramanian Sankaranarayan
University of Illinois, Chicago, IL. US

4.3:
Student Paper: Toward Scalable 3D IRFPA Design: Optimized Meshing and Structural Stress Control in MoDiBI-Integrated MCT-Based IRFPAs (4:15 PM)
Vineet Kumar, Subramanian Sankaranarayan
University of Illinois, Chicago, IL, US
Kiran Sasikumar
Indian Institute of Technology, Gandhinagar, India
Sushant Sonde, Yong Chang, Silviu Velicu
EPIR, Bolingbrook, IL, US

4.4:
Student Paper: Laplace DLTS Studies and Trap Assisted Tunneling in HgCdTe MWIR RED Photodiodes (4:30 PM)
Nicolas Morisset, Alexandre Brunner. Laurent Rubaldo
Lynred, Veurey-Voroize, France
Maeva Franco, Quentin Rafhay
University Grenoble Alpes, Grenoble, France

4.5:
Production of LWIR 1280x480 pixel HgCdTe Focal Plane Arrays at Teledyne Imaging Sensors (4:45 PM)
Matthew Chrysler
Teledyne Imaging Sensors, Camarillo, CA, US

TABLETOP EXHIBITS/
WINE & CHEESE RECEPTION (5:00 – 6:30 PM)

WEDNESDAY, OCTOBER 1, 2025
Ballroom ABCD

Workshop Registration Check-In (7:30 AM - 4:30 PM)

Welcome by 2025 Workshop Co-Chairs (8:30 - 8:45 AM)
Siva Sivananthan, *Sivananthan Laboratories, Inc., Bolingbrook, IL, US*
Borzoyeh Shojaei, *Teledyne Imaging Sensors, Camarillo, CA, US*
Eric Piquette, *Teledyne Imaging Sensors, Camarillo, CA, US*

Session 5: Industrial Overview II
8:45 - 9:45 AM

Chair: *Eric Piquette, Teledyne Imaging Sensors*

5.1:
Invited Paper: LWIR and MWIR HgCdTe-based Focal Plane Arrays Using High Density Vertically Integrated Photodiode (HDVIP) Technology (8:45 AM)
Fikri Aqariden
Leonardo DRS, Bolingbrook, IL, US

5.2:
Invited Paper: HOT and Small Pitch Infrared Detectors Development at LYNRED (9:15 AM)
Laurent Rubaldo, Nicolas Morisset, Cécile Grezes, Nicolas Péré-Laperne, Alexnadre Brunner, Jocelyn Berthoz, Pierre Jenouvrier
Lynred, Veurey-Voroize, France
Clément Lobre, Olivier Gravrand, Cyril CerveraJean
CEA/Leti, Grenoble, France
Luc Reverchon, Axel Evirgen
III-V Lab, Palaiseau, France

BREAK (9:45 – 10:00 AM)

Session 6: Defects and Doping
10:00 AM - 11:30 AM

Chair: *Madhu Reddy, Raytheon Vision Systems*

6.1:
WITHDRAWN

6.2:
Residual Defect Characterization in Arsenic-Doped HgCdTe via FIB-SEM Nano-Tomography (10:00 AM)
Clement Lobre, Florian Marmonier, Pierre-Henri Jouneau
CEA/Leti, Grenoble, France

6.3:
Study of Trapping - Detrapping Events on MWIR T2SL Focal Plane Array Using Electrical Stimulation (10:15 AM)
Titouan Le Goff, Olivier Gravrand, Cyril Cervera;
Alexandre Ferron;Quentin Durlin
CEA – LETI, Grenoble, France
Nicolas Pere Laperne
Lynred, Veurey-Voroize, France
Jean-Luc Reverchon
III-V Lab, Palaiseau, France

6.4:
Student Paper: Electrical and Physicochemical Study of the Metal / p-HgCdTe Interface for MCT-Based nfrared Detectors (10:30 AM)
Alexandra Colas—Reuilon, Clément Lobre, Sarah Petit,
Marc Veillerot, Eugénie Martinez, Steven Bel, Olivier Gravrand
CEA-Leti, Grenoble, France

6.5:
Student Paper: II-VI Surface Passivation via Sub-Stoichiometric Native Oxides (10:45AM)
Noah Kamm, Arashdeep Thind, Robert Klie
University of Illinois in Chicago. Chicago, IL, US
Anthony Nicholson, Amit Munshi
Colorado State University, Fort Collins, CO, US
Zheng Ju, Xin Qi, Yong-Hang Zhang
Arizona State University, Tempe, AZ, US
D. Bruce Buchholz
Northwestern University, Evanston, IL, US

Session 6: Defects and Doping (cont.)
10:00 AM - 12:00 PM

6.6:
Characterization of Hg1-xCdxTe on (211) Cd1-yZnyTe by High-Resolution X-Ray Diffraction (11:00 AM)
Anthony Edgeton, Bo Shojaei, Mitchell Dreiske, Jon Ellsworth, Aristo Yulius, Michael Carmody
Teledyne Imaging Sensors, Camarillo, CA, US

6.7:
Student Paper:
Hole Mobility and Scattering Mechanisms in CdTe Solar Cells (11:15 AM)
Timur Sukhanov
University of Illinois at Chicago, Chicago, IL, US
Eric Colegrove, Matthew Reese
National Renewable Energy Laboratory, Golden, CO, US
Sivalingam Sivananthan
Sivananthan Laboratories, Bolingbrook, IL, US

LUNCH (11:30 – 1:15 PM)

Session 7: Radiation
1:15 - 2:30 PM

Chair: *Eric Piquette, Teledyne Imaging Sensors*

7.1:
Invited Paper: Experimental Evaluation of the Proton Non-Ionizing Energy Loss in II-V and III-V Materials (1:15 PM)
Julie Logan, Diana Maestas, Rigo Carrasco, Christian Morath, Preston Webster
Air Force Research Lab, Kirtland AFB, NY, US

7.2:
Student Paper: Study of Proton Radiation-Induced Dark Current Degradation on HgCdTe P-on-N LWIR and VLWIR Image Sensors (1:45 PM)
Thibaud Friess, Antoine Claret, Nicolas Baier, Eric De Borniol, Olivier Gravrani
CEA Leti, Grenoble, France
Cécile Grezes
Lynred, Veurey-Voroize, France
Alexandre Le Roch, Anne Rouvie
CNES, Toulouse, France
Vincent Goiffon
ISAE Supaero, Toulouse, France
Serena Rizzolo
Airbus Defence & Space, Toulouse, France

7.3:
Monte Carlo Transport Simulation and Displacement Damage Analysis for HgCdTe Material and Devices (2:00 PM)
Yong Chang, Sushant Sonde, Isaac Chang, Silviu Velicu
EPIR, Bolingbrook, IL, US
Zhenyu Ye
Lawrence Berkeley National Laboratory. Berkeley, CA, US

7.4:
Student Paper: Study of RTS Characteristic on a FPA Under Proton Radiation Stress in the LWIR and VLWIR Spectral Range (2:15 PM)
Antoine Claret, Nicolas Baier, Eric De Borniol, Cyril Cervera, Olivier Gravrand
CEA Leti, Grenoble, France
Thibaud Friess
CNES, Toulouse, France
Cécile Grezes
Lynred , Veurey-Voroize, France
Vincent Goiffon
ISAE Supaero, Toulouse, France

BREAK (2:30 – 2:45 PM)

Session 8: Emerging Infrared Materials
2:45 - 5:45 PM

Chair: *Bo Shojaei, Teledyne Imaging Sensors*

8.1:
Invited Paper: Emerging Energy Applications of Infrared Optoelectronic Devices (2:45 PM)
Eric Tervo, Titilope Dada, Morgan Turville-Heitz, Yuting Li, Vida Nooshnab, Alec Marshall, Jeremy Kirch, Luke Mawst
University of Wisconsin-Madison, Madison, WI, US

8.2:
Invited Paper: Epitaxially Integrated IV-VI Semiconductors on GaAs for Infrared Optoelectronics (3:15 PM)
Kunal Mukherjee
Stanford University, Stanford, CA, US

8.3:
Invited Paper: MCT-Graphene Heterostructure for Room Temperature LWIR Imaging (3:45 PM)
Debashis Chanda
University of Central Florida, Orlando, FL, US

BREAK (4:15 – 4:30 PM)

8.4:
Invited Paper: Application of HgTe Colloidal Quantum Dots in Infrared Photodetectors (4:30 PM)
Brian Korgel
University of Texas Austin, Austin, TX, US

8.5:
Student Paper: HgTe/ZnS and HgTe/ZnS/ZnTe Core/Shell Colloidal Quantum Dots for Room Temperature SWIR Photodetection (5:00 PM)
Shea Sanvordenker, Brian Korgel
The University of Texas at Austin, Austin, TX, US
Jamie Howell, , Zaheer Ahmad, Rich Pimpinella
Sivananthan Laboratories Inc., Bolingbrook, IL, US

8.6:
Student Paper: Effect of Shape and Polar Exchange onHgTe Mid IR Quantum Dots Photoconductors Performance (5:15 PM)
Jinlei Feng
University of Chicago. Chicago, IL, US

8.7: Long-Wave Infrared HgTe Quantum Dot Photoconductors with Optical Enhancement (5:30 PM)
Ji Yang, Philippe Guyot-Sionnest
EPIR, University of Chicago. Chicago, IL, US

THURSDAY, OCTOBER 2, 2025
Ballroom ABCD

Workshop Registration Check-In (8:00 AM - 12:00 PM)

Welcome by 2025 Workshop Co-Chairs (8:30 - 8:45 AM)
Siva Sivananthan, *Sivananthan Laboratories, Inc., Bolingbrook, IL, US*
Borzoyeh Shojaei, *Teledyne Imaging Sensors, Camarillo, CA, US*
Eric Piquette, *Teledyne Imaging Sensors, Camarillo, CA, US*

Session 9: Industrial Overview III
8:45 - 9:45 AM

Chair: *Bo Shojaei, Teledyne Imaging Sensors*

9.1:
Invited Paper: Cooled IR Imaging Developments at CEA-LETI and Associated Characterizations (8:45 AM)
Olivier Gravrand
CEA-LETI, Grenoble, France

9.2:
Invited Paper: Infrared Detector Development at Leonardo, UK (9:15 AM)
James Wilson
Leonardo, Southampton, UK

Session 10: Heteroepitaxy
9:45 - 11:30 AM

Chair: *Fikri Aqariden, DRS Electro-Optical & Infrared Systems (EOIS)*

10.1:
Invited Paper: Uniform HgCdTe Growth on Large Area Substrates by Molecular Beam Epitaxy (9:45 AM)
Kevin Doyle, Madhu Reddy, Jeffrey Peterson, Xiaojun Jin, Fausto Torres, Andreas Hampp
Raytheon Technologies Exchange, Goleta, CA, US

10.2:
Invited Paper: Advanced MBE for High Volume Production of Large-Area HgCdTe Wafers (10:15 AM)
Madhu Reddy
Raytheon Technologies Exchange, Goleta, CA, US

BREAK (10:45 – 11:00 AM)

Session 10: Heteroepitaxy
9:45 - 11:30 AM

10.3:
Studies of Epitaxial Regrowth of Hg1-xCdxTe (11:00 AM)
Bo Shojaei, Eric Piquette, Pete Dreiske, Michael Carmody
Teledyne Imaging Sensors, Camarillo, CA, US

10.4:
II-VI Compound Crystals from Vertical Bridgman Technique for Diverse Applications (11:15 AM)
Magesh Murugesan, Jing Shang, John McCloy
Washington State University, Pullman, WA, US
Benjamin Montag
Radiation Detection Technologies, Manhattan, KS, US

Session 11: Modeling
11:30 AM - 12:30 PM

Chair: *Enrico Bellotti, Boston University*

11.1:
Invited Paper: Advances in II-V and III-V Semiconductors: Band Engineering, Doping Limits, and Nanoparticle-Induced Electronic Modifications (11:30 AM)
Anderson Janotti
University of Delaware, Newark, DE, US

11.2: Modeling Temperature and Field Dependent Charge Transport in Colloidal Quantum Dot Solids (12:00 PM)
Zaheer Ahmad, Jamie Howell, Rich Pimpinella
Sivananthan Laboratories Inc., Bolingbrook, IL, US
Dustin Guidry
University of Illinois at Chicago, Chicago, IL, US
Shea Sanvordenker
University of Texas at Austin, Austin, TX, US

11.3: Modeling of Radiation Damage in Unipolar Barrier Devices (12:15 PM)
Anthony Ciani, Zhi-Gang Yu, Christoph Grein
Sivananthan Laboratories, Inc., Bolingbrook, IL, US

CASSELMAN/SPICER
BEST STUDENT PAPER AWARD (12:30 PM)