

PROGRAM

*The 2022 U.S. WORKSHOP on the PHYSICS
and CHEMISTRY of II-VI MATERIALS*

Tampa Airport Westshore Hilton Hotel

Tampa, FL, US

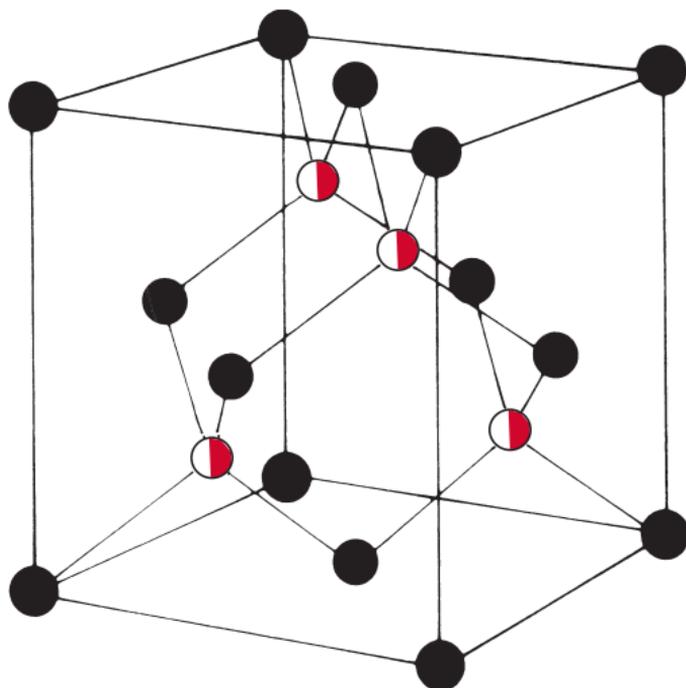
October 24–27, 2022

II-VI Detector Materials

- IR
- UV
- Gamma-Ray
- X-Ray
- Photovoltaic
- CdZnTe
- HgCdTe
- ZnO
- ZnS
- History of IR Detectors

Sessions

- Industrial Overview
- Materials
- Devices
- Modeling and Simulation
- Superlattice
- Substrates



Participating Organizations

U.S. Army DEVCOM C5ISR RTI

U.S. Army Research Laboratory

U.S. Army SMDC

U.S. Navy Electro-Optics Center

Penn State University

Office of Naval Research

Air Force Research Laboratory

Army Research Office

The Minerals, Metals & Materials Society

Endorsed by

The American Physical Society

www.ii-viworkshop.org

Promotional Partners and Exhibitors

The 2022 II-VI Workshop would like to express sincere thanks to our supporting organizations and for the contributions from our generous corporate partner.

Bronze Partner



5N PLUS

Tabletop Exhibitors



JX Nippon Mining & Metals

Pulse Instruments

2022 II-VI WORKSHOP

Welcome

In the 41 years since the first Workshop was held in 1981, the technology of HgCdTe and related devices has significantly matured and broadened. The 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.

- 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 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 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 all three days of the Workshop, while a Wine and Cheese Reception has been scheduled for Tuesday evening.

The 2022 II-VI Workshop Brings Together Industrial Leaders!

We are excited to announce this year's invited speakers:

Keynote Speakers:

Monday: Dr. Whitney Mason, DARPA

“DARPA Imaging Microsystems Technology”

**Tuesday: Dr. Michael Groenert, US Army Night Vision
and Electronic Sensors**

“Army Imaging Sensor Priorities”

Invited Speakers:

Oğuz Altun, ASELSAN Inc.

“Annealing Studies for Quality Improvement of CdZnTe
Crystals”

Michael Carmody, Teledyne Imaging Sensors

IR Focal Plane Technology at Teledyne

Debashis Chanda, University of Central Florida

“MCT Graphene Heterostructure for Room Temperature
LWIR Imaging”

Heinrich Figgemeier, AIM Infrarot-Module GmbH

“Status and Future of IR Technology at AIM”

Kelly Jones, Raytheon

“Raytheon Industry Overview”

Philip Klipstein, SCD

“K.P Theory of Topological Edge States in HgTe/CdTe and
InAs/GaSb/AlSb WIDE Barrier Superlattices”

Tuvy Markovitz, SCD

“IR Sensing at SCD: From Space Systems to Soldier
Applications”

Chris Maxey, Leonardo(UK)

“Current State of IR Detectors at Leonardo”

Sara Modni, CEA-Leti

“TEM/STEM Characterization of Precipitates in CdZnTe
Crystals Made by the VGF Method”

Philip Perconti, Leonardo DRS

“Integrated Sensing”

Laurent Rubaldo, LYNRED

“Multibands and Multimaterials IR Technologies
Development at LYNRED”

Featured Presentation

Bernard Rauscher, *NASA GSFC*

“The James Webb Space Telescope and its HgCdTe Near Infrared Array Detectors”

Tutorial

Mike Kelly, *Radiant Vision Systems*

“Bulk Growth of CdTe and CdZnTe”

WORKSHOP CO-CHAIRS

Enrico Bellotti, *Boston University*

Eric Piquette, *Teledyne Imaging Sensors*

PROGRAM COMMITTEE

Tony Almeida, *U.S. Army CCDC C5ISR NVESD*

Fikri Aqariden, *Leonardo DRS*

Jose M. Arias, *CACI / U.S. Army CCDC C5ISR NVESD*

Ishwara Bhat, *Rensselaer Polytechnic Institute*

Joseph Burns, *Air Force Research Laboratory*

Roger DeWames, *MTEQ / U.S. Army C5ISR NVESD*

Nibir K. Dhar, *U.S. C5ISR Center NVESD*

Tim Gessert, *National Renewable Energy Laboratory*

Ralph James, *Savannah River National Lab*

Scott Johnson, *Raytheon Vision Systems*

Dan Lofgreen, *Raytheon Vision Systems*

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

Thomas Myers, *Texas State University – San Marcos*

Jill Nolde, *Naval Research Laboratory*

Joe Pellegrino, *C5ISR Center NVESD*

Marion Reine, *Consultant, Infrared Detectors*

Jonathan Schuster, *DEVCOM Army Research Laboratory*

Sivalingam Sivananthan, *University of Illinois at Chicago*

Honnavalli Vydyanath

Priyalal Wijewarnasuriya, *Teledyne Imaging Sensors*

WORKSHOP COORDINATOR

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WORKSHOP PARTICIPATING ORGANIZATIONS

U.S. Army DEVCOM C5ISR RTI

U.S. Army Research Laboratory

U.S. Army SMDC

U.S. Navy Electro-Optics Center

Penn State University

Office of Naval Research

Air Force Research Laboratory

Army Research Office

The Minerals, Metals & Materials Society

Endorsed by

The American Physical Society

WORKSHOP PARTICULARS

LOCATION AND DATE

The 2022 II-VI Workshop takes place from October 24–27 at the Tampa Airport Westshore Hilton Hotel.

WORKSHOP CHECK-IN

Attendees arriving on Monday, October 24, will be able to pick up their Workshop material at the II-VI Registration Desk located in the Ballroom Prefunction Foyer of the hotel between 5:00 and 6:30 pm. Attendees may also pick up their materials at the registration desk during the hours listed below:

Monday, October 24	5:00–7:00 pm
Tuesday, October 25	7:30 am–6:00 pm
Wednesday, October 26	7:45 am–4:30 pm
Thursday, October 27	8:00 am–12:00 pm

LUNCHES

Lunches will be served in a section of the hotel on all three days of the Workshop. To keep the Workshop on schedule, attendees are encouraged to participate.

WINE AND CHEESE/TABLETOP DISPLAYS

Following the presentations on Tuesday afternoon, a Wine and Cheese Reception has been scheduled to help promote informal discussion and attendee interaction. The Wine and Cheese Reception will be accompanied by several Tabletop Displays from commercial vendors displaying products of interest to the II-VI community. The tabletops will be on view during the Tuesday evening reception as well as during the day on Wednesday and Thursday in the Ballroom Prefunction Foyer.

WORKSHOP MEETING ROOMS

The Workshop presentations will be held in the Gasparilla Ballroom. The Wine and Cheese Reception, tabletop displays, and refreshment breaks will all take place in the Ballroom Prefunction Foyer.

EXHIBITS

Please visit our supporting exhibitors in the Ballroom Prefunction Foyer:

Galaxy Compound Semiconductors, Inc./IQE
JX Nippon Mining & Metals USA
Pulse Instruments

EXHIBIT HOURS:

Tuesday, October 25	12:00 pm–6:00 pm
Wednesday October 26	9:00 am–5:00 pm
Thursday October 27	9:00 am–12:00 pm

BOOK OF EXTENDED ABSTRACTS

A copy of the *Book of Extended Abstracts* will be distributed to all attendees at the Workshop. The *Extended Abstracts* will contain summaries of most oral presentations at the Workshop.

WORKSHOP PROCEEDINGS

The II-VI 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 (printed soft-cover and electronic versions available) is included with the registration fee.

INSTRUCTIONS TO AUTHORS PLANNING TO SUBMIT FULL-LENGTH MANUSCRIPTS

We are asking all authors to submit their manuscripts to II-VI workshop for online peer review using the link provided by *Journal of Electronic Materials* (JEM) <http://www.editorialmanager.com/jems/>. Please click on “submit manuscript” at the top of the page. The online manuscript submission will close on **December 16, 2022**.

II-VI Paper Submission

- Authors who presented their work at the Workshop can submit their manuscripts either by going to the JEM’s editorial web page at <http://www.editorialmanager.com/jems/> or via II-VI workshop’s website, <http://www.ii-viworkshop.org/>. Information on manuscript submissions can be found by clicking “2022 JEM Submission Instructions” under the “Important Updates and Links” menu on the II-VI homepage. Submissions via e-mail will not be accepted.
- New users will need to create an account. During the submission process, authors will be asked to enter additional information.
- The type of paper is “Special Issue” and the category is “2022 U.S Workshop on Physics and Chemistry”.
- All submissions require an abstract of 200 words or less, a keywords line, a transfer of copyright form, and electronic file. Papers are reviewed by two qualified referees to determine suitability. The editors’ decision to accept or reject a paper, based on referees’ comments, is final. Please employ the following guidelines when submitting a paper for review:
- Manuscripts, written in English, should be in a single column and formatted to fit on a 22 × 28-cm sheet. Should manuscripts contain too many grammatical errors or awkward passages, the papers will be returned without review. Assistance of a professional proofreader (such as www.journalexerts.com) or qualified native speaker of English is recommended under these circumstances and may not only accelerate the review process but also allow for an early publication date.

- The title of the article and abstract should be separate from the text. References, figure captions, and tables should also be on separate pages.
- The work's significance and its relation to the work of others should be detailed in the Introduction. Major assumptions should be stated and procedures adequately outlined.
- References should be cited by Arabic numbers as superscripts. Include the names of all authors, standard abbreviated name of journal (see, for example, <http://library.caltech.edu/reference/abbreviations/>) the volume number, initial page number, and year of publication in parenthesis. For books, include city of publication and publisher.
- Measurements should be given in metric units, including common abbreviations for time such as h, min, and s.
- Figures may be published online in color with no charge, but color figures in the print version of the *Journal* carry a mandatory fee.

To avoid delays, please:

1. Define all acronyms upon first use, including in the abstract, in this style: scanning electron microscopy (SEM).
2. All micrographs must have scale markers. All plots must have both axes labeled with the variable name (units).
3. Contact author e-mail address and keywords must be included on the abstract page.

For detailed guidelines on artwork and the copyright issue please visit:

<http://www.springer.com/materials/optical+%26+electronic+materials/journal/11664#>

PROGRAM

MONDAY, OCTOBER 24, 2022

- 5:00 – 7:00 pm Workshop Registration Check-In
Welcome, Keynote, and
Tutorial by **Dr. Whitney Mason, DARPA**

TUESDAY, OCTOBER 25, 2022

- 7:30 – 6:00 pm Registration
7:30 – 9:30 am Continental Breakfast
8:45 – 9:00 am Welcoming Remarks
9:00 – 9:30 am Keynote Address: **Michael Groenert,**
*US Army Night Vision & Electronic
Sensors*
9:30 – 10:30 am Session 1: Industrial Overview I
10:30 – 10:45 am **BREAK**
10:45 – 12:15 pm Session 2: Materials
12:15 – 1:30 pm **LUNCH**
1:30 – 3:30 pm Session 3: Devices I
3:30 – 3:45 pm **BREAK**
3:45 – 5:00 pm Session 4: Modeling and Simulation I
5:00 – 6:30 pm **TABLETOP EXHIBITS**
WINE & CHEESE RECEPTION

WEDNESDAY, OCTOBER 26, 2022

- 7:45 – 4:30 pm Registration
7:30 – 9:30 am Continental Breakfast
8:45 – 9:00 am Welcoming Remarks
9:00 – 9:30 am Featured Presentation:
Bernard Rauscher, NASA GSFC
9:30 – 11:15 am Session 5: Industrial Overview II
10:30 – 10:45 am **BREAK**
11:15 – 12:15 pm Session 6: Superlattice
12:15 – 1:30 pm **LUNCH**
1:30 – 3:15 pm Session 7: Devices II
3:15 – 3:30 pm **BREAK**
3:30 – 4:30 pm Session 8: Substrates

THURSDAY, OCTOBER 27, 2022

- 8:00 – 12:00 pm Registration
7:30 – 9:30 am Continental Breakfast
9:15 – 9:30 am Welcoming Remarks
9:30 – 10:30 am Session 9: Industrial Overview III
10:30 – 10:45 am **BREAK**
11:15 – 12:30 pm Session 10: Modeling and Simulation II
12:30 pm **SPICER/CASSELMAN AWARD**

MONDAY, OCTOBER 24, 2022

Gasparilla Ballroom

(5:00 – 7:00 pm)

Workshop Registration Check-In (5:00–7:00)

Welcome by II-VI 2022 Workshop Co-Chairs (5:45)

Enrico Bellotti, *Boston University*

Eric Piquette, *Teledyne Imaging Sensors*

KEYNOTE ADDRESS

6:00 pm

Dr. Whitney Mason

DARPA

“DARPA Imaging Microsystems Technology”

TUTORIAL

6:30 pm

Kelly Jones

Raytheon Vision Systems

“Bulk Growth of CdTe and CdZnTe”

TUESDAY, OCTOBER 25, 2022

Gasparilla Ballroom

(7:30 am – 6:30 pm)

Workshop Registration Check-In (7:30–6:00)

Welcome by II-VI 2022 Workshop Co-Chairs (8:45)

Enrico Bellotti, *Boston University*

Eric Piquette, *Teledyne Imaging Sensors*

KEYNOTE ADDRESS

9:00 am

Mike Groenert

*U.S. Army Night Vision and Electronic Sensors,
Fort Belvoir, VA*

“Army Imaging Sensor Priorities”

Session 1: Industrial Overview I
9:30 – 10:30 am

Chair: Enrico Bellotti
Boston University, Boston, MA, US

1.1:

***Invited Presenter:* Multi-Bands and Multi-Materials (9:30)**
IR Technologies Development at LYNRED

*Laurent Rubaldo, Yohan Fourreau, Vincent Destefanis,
Alexandre Brunner, Nicolas Pere-Laperne, Jocelyn Berthoz,
Nicolas Jamin, Lilian Martineau, Frederic Salvetti, Laurent
Baud, Pierre Jenouvrier, David Billon-Lanfrey
LYNRED, Veurey-Voroize, France*

*Timotée Journot, Olivier Gravrand
CEA-Leti, Grenoble, France*

1.2:

***Invited Presenter:* IR Sensing at SCD – (10:00)**
From Space Systems to Soldier Applications

*Tuvy Markovitz
SCD*

BREAK (10:30–10:45)

Session 2: Materials
Tuesday, October 25 / 10:45 am - 12:15 pm

Chair: Tony Almeida
US Army C5ISR RTI, Fort Belvoir, VA, US

2.1:
Thermo-Mechanical Stress Profiling for 3D (10:45)
Integration of IRFPA Hybridization

Sushant Sonde, Yong Chang, Silviu Velicu
EPIR, Inc., Bolingbrook, IL, US

Kiran Sasikumar

Argonne National Laboratory, Lemont, IL, US

Subramanian KRS Sankaranarayanan

Argonne National Laboratory, Lemont, IL, US and
University of Illinois, Chicago, IL, US

2.2:
Student Presenter: DLTS Study of Defects in (11:00)
HgCdTe Heterostructure Photodiodes

Kinga Majkowycz, Krzysztof Murawski, Tetjana Manyk,
Jaroslav Rutkowski, Malgorzata Kopytko, Piotr Martyniuk
Military University of Technology, Warsaw, Poland

2.3:
Developments and Process Improvements Leading (11:15)
to High Quality and Large Area HgCdTe LPE
Detectors

Mauro F. Vilela, Jack Hogan, Kelly Jones, Gregory M. Venzor,
Paul M. Goetz, Michael Seas,
Andreas Hampp, Raytheon Vision Systems, Goleta, CA, US

2.4:
Student Presenter: Determination of Elasto-Plastic (11:30)
Properties of Hg_{1-x}Cd_xSe (0 ≤ x ≤ 1) Using
Nanoindentation

Zekai Zhang, Wenwu Pan, Wen Lei, Mariusz Martyniuk,
Shuo Ma, Lorenzo Faraone,
The University of Western Australia, Crawley, Australia

2.5:
Student Presenter: Non-Contact Characterization (11:45)
of Carrier Mobility and Ultrafast Dynamics in
Long-Wave Infrared HgCdTe Films Using
Time-Resolved Terahertz Spectroscopy

Nils B. Refvik, David N. Purschke, Charles E. Jensen,
Howe R. J. Simpson, Frank A. Hegmann
University of Alberta, Edmonton, Alberta, Canada

Wenwu Pan, Wen Lei, Renjie Gu, Jarek Antoszewski,
Gilberto A. Umana-Membreno, Lorenzo Faraone
The University of Western Australia, Perth, Australia

2.6

***Student Presenter:* Probing Carrier Multiplication (12:00) in Long-WaveE Infrared HgCdTe with Intense Terahertz Pulses**

*David N. Purschke, Hannah Louis, Nils B. Refvik,
Charles E. Jensen, Howe R. J. Simpson, Frank A. Hegmann
University of Alberta, Edmonton, Alberta, Canada*

*Wenwu Pan, Wen Lei, Renjie Gu, Jarek Antoszewski, Gilberto
A. Umana-Membreno, Lorenzo Faraone
The University of Western Australia, Perth, Australia*

LUNCH

(12:15–1:30)

Session 3: Devices I
Tuesday, October 25 / 1:30 – 3:30 pm

Chair: Dan Lofgreen
Raytheon Vision Systems, US

3.1:
Excess Currents in HgCdTe-based LWIR Photovoltaic Sensor Chip Arrays Designed for Auger-Limited Performance (1:30)

Bo Shojaei, Priyalal Wijewarnasuriya, Donald Lee, Aristo Yulius, Michael Carmody
Teledyne Imaging Sensors, Camarillo, CA, US

3.2:
Rule-22: An Update to Rule-07 (1:45)

Majid Zandian
Teledyne Imaging Sensors, Camarillo, CA, US

3.3:
The Tobin Coefficient: A Relevant Photodetector Performance Metric for IR Imaging (2:00)

Alexandre Kerlain, Diane Sam-Giao
Lynred, Veurey-Voroize, France
Olivier Gravrand
CEA, Grenoble, France

3.4:
***Student Presenter:* Propagation Delay in Multi-Channel SWS-CMOS Based Inverters Using II-VI Gate Insulator** (2:15)

Abdulmajeed Almalki, Raja H. Gudlavalleti, John Chandy, Faquir Jain
University of Connecticut, Storrs, CT, US
Bander Saman
College of Engineering, Taif University, Taif, Saudi Arabia
Evan Heller
Synopsys Inc., Ossining, NY, US

3.5:
***Student Presenter:* Experimental Determination of the Dependence Between Spectral Response and Current-Voltage Characteristics for MWIR HgCdTe Detectors Grown on GaAs** (2:30)

Andrzej Kowalewski, Pawel Madejczyk, Piotr Martyniuk
Military University of Technology, Warszawa, Poland

3.6:
At 60 K Performance of Very Long Wavelength Focal Plane Arrays of 18 mm Pixel Size (2:45)

Priyalal Wijewarnasuriya, Bo Shojaei, Kenneth Cante, Eric Holland, Bill Christian, Howard Bar, Hung Tcheou, Dora Servin, Ray Boe, Connie Elizarraraz, Brian Starr, Justin Eakins, Michael Carmody
Teledyne Imaging Sensors, Camarillo, CA, US

3.7:
Characterization of HgCdTe Heterostructures for Infrared Detectors Operating Up to 8 μm (3:00)

Krzysztof Murawski, Kinga Majkowycz, Piotr Martyniuk, Magoryata Kopytko
Military University of Technology, Warsaw, Poland

3.8:
Ultimate Performance of n-on-p Infrared Photodetectors Fabricated by RIE Process (3:15)

Nima Dehdashti Akhavan, Gilberto Umana Membreno, Renji Gu, Jarek Antoszewski, Lorenzo Faraone
University of Western Australia, Crawley, Australia

BREAK (3:30–3:45)

Session 4: Modeling and Simulation I
Tuesday, October 25 / 3:45 – 5:00 pm

Chair: **Jonathan Schuster**
*U.S. Army DEVCOM Army Research
Laboratory (ARL), Adelphi, MD, US*

4.1:
***Invited Presenter:* K.P Theory of Topological Edge States in HgTe/CdTe and InAs/GaSb/AlSb Wide Barrier Superlattices** **(3:45)**

Philip Klipstein
Semiconductor Devices, Haifa, Israel

4.2:
Device Optimization of HgCdTe APDs through Comprehensive Device Modeling **(4:15)**

Mike Zhu, Enrico Bellotti
Boston University, Boston, MA, US

4.3:
First-Principles Study of Coherency Strain Effects on the Phase Diagrams and Critical Temperatures for InAs_{1-x}Sb_x Alloys **(4:30)**

Masahiko Matsubara, Alexandros Kyrtos, Enrico Bellotti
Boston University, Boston, MA, US

4.4:
***Student Presenter:* HgCdTe Detector and Focal Plane Array Device Physics Simulation Using DevSim, an Open-Source Device Simulation Tool** **(4:45)**

Katerina Zirou
EPIR Inc., Bolingbrook, IL, US, and University of Illinois at Chicago, Chicago, IL, US
Yong Chang, Sushant Sonde, Silviu Velicu
EPIR Inc., Bolingbrook, IL, US

RECEPTION **(5:00–6:30)**

Wednesday, October 26, 2022
Gasparilla Ballroom
(7:45 am – 4:30 pm)

Workshop Registration Check-In (7:45–4:30)

Welcome by II-VI 2022 Workshop Co-Chairs (8:45)

Enrico Bellotti, *Boston University*

Eric Piquette, *Teledyne Imaging Sensors*

Featured Presentation on The James Webb Space (9:00)

Telescope and Its HgCdTe Near-Infrared Array Detectors

by *Bernard Rauscher, NASA GSFC*

Session 5: Industrial Overview II
Wednesday, October 26 / 9:30 – 10:30 am

Chair: **Eric Piquette**
Teledyne Imaging Sensors, Camarillo, CA, US

5.1:

Invited Presenter: Status and Future of IR (9:30)
Technology at AIM

Heinrich Figgemeier

AIM Infrarot-Module GmbH, Heilbronn, Germany

5.2:

Invited Presenter: Raytheon Industry Overview (10:00)

Kelly Jones

Raytheon, Goleta, CA, US

BREAK (10:30–10:45)

Session 5: Industrial Overview II (CONT.)
Wednesday, October 26 / 10:45 – 11:15 am

Chair: **Eric Piquette**
Teledyne Imaging Sensors, Camarillo, CA, US

5.3:

Invited Presenter: Current State of IR Detectors (10:45)
at Leonardo

Chris Maxey, James Wilson, Ian Baker, Adam Greenen

Leonardo, Southampton, UK

Session 6: Superlattice
Wednesday, October 26 / 11:15 am – 12:15 pm

Chair: Enrico Bellotti
Boston University, Boston, MA, US

6.1:
Demonstration of T2SLs InAs/InAsSb Based Interband Cascade Detector Supported by Immersion Lens for LWIR (11:15)

Waldemar Gawroni

*Military University of Technology, Warsaw, Poland and
VIGO System S.A, Mazowiecki, Poland*

*Łukasz Kubiszyn, Krystian Michalczewski,
Jarosław Jureńczyk, Józef Piotrowski
VIGO System S.A, Mazowiecki, Poland*

Piotr Martyniuk

Military University of Technology, Warsaw, Poland

6.2:
The Role of Carrier Localization in Determining the Temperature Dependence of the Mid-Wavelength Infrared InAs/InAsSb Type-II Superlattice Energy Gap (11:30)

*Krzysztof Murawski, Tetiana Manyk, Malgorzata Kopytko
Military University of Technology, Warsaw, Poland*

6.3:
Photo-Hall Characterisation of Lateral & Vertical Electronic Transport in InAs/GaSb Type-II Superlattices (11:45)

*Gilberto Umana-Membreno, Nima Akhavan,
Jaroslaw Antoszewski, Lorenzo Faraone*

*The University of Western Australia, Crawley WA,
Australia*

6.4:
Mobility Extraction from Quantum Transport Calculations of Type-II Superlattices (12:00)

John Glennon, Enrico Bellotti

Boston University, Boston, MA, US

LUNCH (12:15–1:30)

Session 7: Devices II
Wednesday, October 27 / 1:30 – 3:15 pm

Chair: Jill Nolde
Naval Research Laboratory, US

7.1:
Invited Presenter: MCT-Graphene Heterostructure (1:30)
for Room Temperature LWIR Imaging

Debashis Chanda

University of Central Florida, Orlando, FL, US

Srinivas Krishnamurthy

Sivananthan Laboratories, Bolingbrook, IL, US

Silviu Velicu

EPIR Inc., Bolingbrook, IL, US

7.2:
Improving HDVIP Performance at Leonardo (2:00)
DRS Using Photonic Crystal Resonances

Patrick Anderson, Justin Wilks, Christina Poole,
Sameer Ajmera, Pradip Mitra

Leonardo DRS - EOIS, Dallas, TX, US

7.3:
WITHDRAWN

7.4:
Electron Beam Induced Current (EBIC) Analysis (2:15)
of MWIR Fully Depleted Structures

J. David Benson

U.S. Army, Ft. Belvoir, VA, US

7.5:
Student Presenter: Dark Current Evolution (2:30)
in Irradiated MWIR HgCdTe Photodiodes

Ségolène Dinand

Airbus Defense and Space, Toulouse, France and
CEA-Leti, Grenoble, France and Université de Toulouse,
Toulouse, France

Nicolas Baier, Eric de Borniol, Olivier Gravrand
CEA-Leti, Grenoble, France

Clémentine Durnez

CNES, Toulouse, France

Vincent Goiffon

Université de Toulouse, Toulouse, France

Serena Rizzolo, Olivier Saint-Pé

Airbus Defense and Space, Toulouse, France

7.6:
Optimization and Measurement of MCT Planar Diode MTF with Small Pitch and High Operating Temperature (2:45)

Bustillos Vascos

CEA-Leti, Grenoble, France

7.7:
***Student Presenter:* Development of a Cryogenic Spot Scan Bench for the PSF Measurement on Mid-Infrared Detectors** (3:00)

Joris GOREE, Edouard Huard de Verneuil, Julien Jaeck, Jerome Primot, Sophie Derelle

Université Paris-Saclay, ONERA, Palaiseau, France

Olivier Gravrand

CEA-Leti, Grenoble, France

Olivier Boulade

CEA-IRFU, Gif-sur-Yvette, France

BREAK (3:15–3:30)

Session 8: Substrates
Wednesday, October 26 / 3:30 – 4:30 pm

Chair: **Fikri Aqariden**
Leonardo DRS, EOIS, Dallas, TX, US

8.1:
Invited Presenter: TEM/STEM Characterization (3:30)
of Precipitates in CdZnTe Crystals Made by the
VGF Method

Sara Modni

*Sorbonne University Paris 6, Paris, France and CEA Leti,
Grenoble, France*

Timotée Journot, Stéphanie Anceau
CEA Leti, Grenoble, France

Gilles Patriarche
C2N, Palaiseau, France

8.2:
Student Presenter: CdTe/InSb(211) Virtual (4:00)
Substrates for IR Detector Application

Tyler T. McCarthy, Zheng Ju, Allison McMinn,
Yong-Hang Zhang

Arizona State University, Tempe, AZ, US

Richard Kodama, Fikri Aqariden
Leonardo DRS, Bolingbrook, IL, US

Pok-Kai Liao, Pradip Mitra
Leonardo DRS, Dallas, TX, US

8.3:
Student Presenter: CdZnTe Crystal Quality (4:15)
Study by Cathodoluminescence Measurements

Valentin Léger, Thomas Bidaud, Stefano Pirota,
Stéphane Collin, Gilles Patriarche

Université Paris-Saclay, Palaiseau, France

Catherine Corbel

*Ecole Polytechnique, Institut Polytechnique de Paris,
Palaiseau, France*

Laurent Rubaldo

LYNRED, Veurey-Voroize, France

Thursday, October 27, 2022
Gasparilla Ballroom
(7:45 am – 4:30 pm)

Workshop Registration Check-In (8:00–12:00)

Welcome by II-VI 2022 Workshop Co-Chairs (9:15)

Enrico Bellotti, *Boston University*

Eric Piquette, *Teledyne Imaging Sensors*

Session 9: Industrial Overview III
Thursday, October 27 / 9:30 – 10:30 am

Co-Chair: **Eric Piquette**
Teledyne Imaging Sensors, Camarillo, CA, US

Co-Chair: **Enrico Bellotti**
Boston University, Boston, MA, US

9.1:
Invited Presenter: IR Focal Plane Technology (9:30)
at Teledyne

Michael Carmody

Teledyne Imaging Sensors, US

9.2:
Invited Presenter: Integrated Sensing (10:30)

Philip Perconti

US

BREAK (10:30–10:45)

Session 9: Industrial Overview III (CONT.)
Thursday, October 27 / 10:45 – 11:15 am

Co-Chair: **Eric Piquette**
Teledyne Imaging Sensors, Camarillo, CA, US

Co-Chair: **Enrico Bellotti**
Boston University, Boston, MA, US

9.3:
Invited Presenter: Annealing Studies for Quality (10:45)
Improvement of CdZnTe Crystals

*Yasin Ergunt, Merve Uysal, Burak Asici, Huseyin Eroglu,
Oguz Altun*

ASELSAN Inc., Ankara, Turkey

Session 10: Modeling and Simulation II
Thursday, October 27 / 11:15 am – 12:30 pm

Chair: Priyalal Wijewarnasuriya
Teledyne Imaging Sensors, Camarillo, CA, US

10.1:
Nuclear Physics Simulation of HgCdTe Detectors and Focal Plane Arrays Under High Energy Neutron Particles (11:15)

Yong Chang, Sushant Sonde, Silviu Velicu
EPIR Inc., Bolingbrook, IL, US

Thomas Kroc
Fermi National Accelerator Laboratory, Batavia, IL, US

10.2:
Growth Modeling of Strained HgCdTe Epilayers (11:30)

Anthony J. Ciani
Sivananthan Laboratories, Bolingbrook, IL, US

Christoph H. Grein
University of Illinois at Chicago, Chicago, IL, US

10.3:
A Computational Study of Radiation Damage in HgCdTe (11:45)

Jamal Mustafa, Chad Fulk, Michael Seas, David Rhiger
Raytheon Vision Systems, Goleta, CA, US

10.4:
Nonequilibrium Green's Function Modeling of Infrared Superlattice Photodetectors (12:00)

Alberto Tibaldia, Jesus Alberto Gonzalez Montoyaa,
Michele Goanoa, Francesco Bertazzia
Politecnico di Torino, Torino, Italy

10.5:
Building an Atoms-to-Systems Modeling and Simulation Platform for Optoelectronics (12:15)

Samiran Ganguly, Nibir K. Dhar
Virginia Commonwealth University, Richmond, VA, US

Avik W. Ghosh
University of Virginia, Charlottesville, VA, US

CASSELMAN/SPICER AWARD (12:30)

NOTES
