

Program

Sunday June 18

Tutorials (i)

Chair: **K. Tennakone**

- 4:30 PM QWIPs: Simple physics for practical applications.
K. K. Choi, Army Research Laboratory, USA
- 7:00 PM Welcome Reception (at the "Pool Terrace")

(Everyday breakfast will be served in "Rasa Wasala" From 6:30 – 9:30 AM)

Monday June 19

QWIP 2006 Conference Technical Sessions

(in the "Magul Maduwa")

- 8:45 AM Opening remarks, **A. G. U. Perera**, Georgia State University,
USA
Welcome address:

Infrared Device Physics

Chair: **K. K. Choi**

- 9:00 AM Advanced Space-Based Detector Research at the Air Force
Research Laboratory. **P. M. Alsing**, Air Force Research
Laboratory, USA
- 9:25 AM Autocorrelation Measurements of Free-Electron Laser
Radiation Using a Two-Photon QWIP. **H. Schneider**, Institute
of Ion-Beam Physics and Materials Research, Germany
- 9:50 AM Non-Gaussian dark current noise in a p-type quantum-well
infrared photodetectors. **Y. Paltiel**, Soreq NRC, Israel
- 10:15 AM Effect of ion implantation on quantum well infrared
photodetectors. **N. Hatefi-Kargan**, University of Leeds, UK
- 10:40 AM Tea/Coffee Break

Chair: **S. Gunapala**

- 11:15 AM Three generations of IR detectors development in Israel, **Gabby Sarusi**, V.P. Business & Technology Development, Israel
- 11:40 AM Van Hove singularities in intersubband transitions in multi-quantum well photodetectors. **J. L. Rouzo**, ONERA, France
- 12:05 AM The Study of Temperature Dependence of Photoelectron Transport in Superlattice and Quantum Wells. **J. H. Lu**, National Taiwan University, Taiwan
- 12:30 PM Normal incidence silicon-doped p-type GaAs/AlGaAs quantum well infrared photodetector on (111) A substrate. **T. Mei**, Nanyang Technological University, Singapore
- 1:00 PM Lunch

Chair: **Yossi Paltiel**

- 2:30 PM Optimization of corrugated-QWIPs for large format, high quantum efficiency, and multi-color FPAs. **K. K. Choi**, U.S. Army Research Laboratory, USA
- 2:55 PM Band Structure and Impurity Effects on Optical Properties of Quantum Well and Quantum Dot Infrared Photodetectors. **Y.-C. Chang**, Jet Propulsion Laboratory, USA
- 3:20 PM Characterization of GaAs/AlGaAs based QWIPs. **M. Thirumavalavan**, Bharat Electronics Limited, India
- 3:45 PM Tea/Coffee Break

Chair: **Antoni Rogalski**

- 4:15 PM Transport in quantum cascade detectors. **V. Berger**, University of Paris, France
- 4:40 PM Detection Wavelength Tuning and Dark current modeling for GaAs/AlGaAs Quantum Well Infrared Photodetectors using MATLAB. **S. Shah**, Bharat Electronics Ltd, India
- 5:05 PM Effect of conduction band non parabolicity on the dark current in a quantum well infrared photodetector. **Sudhira Panda**, Institute of Mathematics and Applications, India

Tutorials (ii)

- 5:30 PM QWIP Camera Development and Applications. **H. Schneider**, Institute of Ion-Beam Physics and Materials Research, Germany

Tuesday June 20

Physics of Q Dots

Chair: **V. Berger**

- 9:00 AM MDA next generation IR detector development.
Meimei Tidrow, Missile Defense Agency, USA
- 9:25 AM Inter-Dot Coupling and Electron Tunneling in Quantum Dot
Infrared Photodetector. **V. Apalkov**, Georgia State
University, USA
- 9:50 AM Room temperature intraband photodetection at 1.3-1.5 μm in
self assembled GaN/AlN quantum dots. **G. Bahir**, Technion-
Israel Institute of Technology, Isarael
- 10:15 AM Multi-Color Tunneling Quantum Dot Infrared Photodetectors
Operating at Room Temperature. **G. Ariyawansa**, Georgia
State University, USA
- 10:40 AM Tea/Coffee Break

Chair: **Paul Alsing**

- 11:15 AM Enhancing the performance of InAs/InGaAs quantum dots-in-
a-well infrared photodetectors. **P. Aivaliotis**, University of
Sheffield, UK
- 11:40 AM High density nanometer-scale InSb dots formation using
droplets heteroepitaxial growth by MOCVD for MWIR
detectors. **Y. Paltiel**, Soreq NRC, Israel
- 12:05 PM Infrared absorption of ordered quantum dot arrays.
W. Q. Ma, Chinese Academy of Sciences, China
- 12:30 PM Temperature dependence responsivity of quantum dot infrared
photodetectors. **S. Y. Wang**, Institute of Astronomy and
Astrophysics, Taiwan.
- 1:00 PM Lunch

Novel Directions (Multi / Broad Band Detectors)

Chair: **Manijeh Razeghi**

- 2:30 PM Broadband 8 – 12 μm quantum-well infrared photodetectors.
H. C. Liu, NRC, Canada
- 2:55 PM UV-IR Dualband Detectors. **A. G. U. Perera**, Georgia State
University, USA

3:20 PM Plasmonic enhancing nanoantennas for photo detection.
Prabath Hewageegana, Georgia State University, USA

3:45 PM Tea/Coffee Break

Chair: **H. C. Liu**

4:15 PM Electric and Magnetic Field Tunability of Quantum Dot
Infrared Photodetectors. **V. Apalkov**, Georgia State
University, USA

4:40 PM NIR, MWIR and LWIR Quantum Well Infrared Photodetector
using Interband and Intersubband Transitions. **F. Durante**,
ITA, Brazil

5:05 PM Long-Wavelength Infrared (LWIR) Quantum Dot Infrared
Photodetector (QDIP) Focal Plane Array.
S. D. Gunapala, Jet Propulsion Laboratory, USA

6:00 PM Traditional Sri Lankan Cultural Show (At the Hotel)

Wednesday June 21

7:30 AM **Excursion to Sigiriya & Dambulla** (meet at the Lobby)

(A hat, sunglasses and comfortable shoes for walking/climbing will be useful.)

Thursday June 22

Novel Directions (Terahertz Detectors)

Chair: **S. Bandara**

9:00 AM Terahertz Quantum Well Photodetectors. **H. C. Liu**, NRC,
Canada

9:25 AM THz range quantum well detector. **M. Patrashin**,
National Institute of Information and Communications
Technology, Japan

9:50 AM Resonant terahertz photomixing devices based on
integration of QWIP and HEMT utilizing plasma effects.
M. Ryzhii, University of Aizu, Japan

10:15 AM Si doped n-type GaAs/AlGaAs Terahertz Detectors.
A. Weerasekara, Georgia State University, USA

10:40 AM Tea/Coffee Break

Chair: **S. Sivananthan**

- 11:15 AM Focal Plane Development at NVESD. **Fenner Milton**,
Director, Night Vision & Electronic Sensors, Department of
the Army (NVESD), USA
- 11:40 AM Quantum Mechanical effects on the threshold of Internal
Photoemission (p-type) THz Detectors. **M. B. M. Rinzan**,
Georgia State University, USA
- 12:05 PM Characteristics of high responsivity 8.5 μm InGaAs/InP
QWIPs grown by metalorganic vapor phase epitaxy.
B. M. Arora, Tata Institute of Fundamental Research, India
- 12:30 PM Monolithically Integrated Near-Infrared and Mid-Infrared
Detector Array for Spectral Imaging. **S. V. Bandara**, Jet
Propulsion Laboratory, USA
- 1:00 PM Lunch

QWIP/QDIP Focal Plane Arrays

Chair: **E. Costard**

- 2:30 PM Multi-Color Megapixel QWIP Focal Plane Arrays for
Remote Sensing Instruments. **S. D. Gunapala**, Jet
Propulsion Laboratory, USA
- 2:55 PM Responsivity of small pixels (10-23 μm) for LWIR (9 μm)
QWIP FPAs. **Alexandru Nedelcu**, Thales Research And
Technology, France
- 3:20 PM Development of a 1K x 1K, 8-12 micrometer QWIP Array.
M. Jhabvala, NASA Goddard Space Flight Center, USA
- 3:45 PM Tea/Coffee Break

Chair: **Unil Perera**

- 4:15 PM QWIP vs. QDIP. **Manijeh Razeghi**, Northwestern
University, USA
- 4:40 PM LWIR/SWIR Switchable Two Color Imager based on
InP/InGaAs Integrated HBT/QWIP and SEE-SPOT
LWIR/NIR Technology Demonstrator.
N. Cohen, Hebrew University of Jerusalem, Israel
- 5:05 PM Thales Long Wave QWIP Thermal Imagers.
Eric Costard, Thales Research and Technology, France

- 5:30 PM A movie making use of a QWIP camera (20 minutes DVD movie + 15 minutes discussion). **V. Berger**, University of Paris and Thales Research and Technology, France
- 7:00 PM Banquet (at the “Magul Maduwa”)

**Error!
Bookmark
not
defined.**

Friday June 23

Other Detector Technologies

Chair: **Gail Brown**

- 9:00 AM 1/f Noise in Dye-sensitized Solar Cells and NIR Photon Detectors. **K. Tennakone**, Institute of Fundamental Studies, Sri Lanka
- 9:25 AM Effects of a p-n Junction on Heterojunction Far Infrared Detectors. **S. G. Matsik**, Georgia State University, USA
- 9:50 AM High Operating Temperature (HOT) Split-off Band IR Detectors. **P. V. V. Jayaweera**, Georgia State University, USA
- 10:15 AM Present Status of HgCdTe Material and Detectors and its Future Directions. **S. Sivananthan**, U. Illinois at Chicago, USA
- 10:40 AM Tea/Coffee Break

Chair: **M. Tidrow**

- 11:05 AM Design optimization of InAs/GaSb superlattices for mid-IR wavelengths. **Gail Brown**, Air Force Research Laboratory, USA
- 11:30 AM MBE Grown Type-II Superlattice Photodiodes. **C. J. Hill**, Jet Propulsion Laboratory, USA
- 11:55 AM Material considerations for third generation photon detectors including QWIPs, HgCdTe and type II superlattices. **Antoni Rogalski**, Military University of Technology Warsaw, Poland
- 12:20 PM Lunch

Tutorials (iii) & (iv)

Chair: **H. Schneider**

2:00 PM QWIP related processes and novel directions. **H. C. Liu**,
NRC, Canada

3:00 PM Photon Detection using Dye Sensitized semiconductor
heterostructures. **K. Tennakone**, IFS, Sri Lanka

4:00 PM Tea/Coffee Break

4:15 PM Detector Panel Discussion (moderator: **G. Sarusi**)

5:15 PM Collaboration Panel Discussion (moderator: **T. De Silva**)

Error!
Bookmark
not
defined.

Absentee Abstracts

A review of noise models for quantum well photodetectors.
Anna Carbone, Politecnico, Italy

Synthesis and Characterization of n+-p Doped Si/Ge
Nanowires for Near-infrared Applications. **Hsi-Lien Hsiao**,
Department of Physics, Tunghai University, Taiwan

320×256 photosensitive module based on quantum well IR
photodetectors. **D. G. Esaev**, Russian Academy of Sciences
Novosibirsk, Russia

**Saturday June 24th : After breakfast transportation to Colombo Airport. (via Kandy
City, Elephant Orphanage)**

Arriving at the Airport: 5:00 PM