



Sunday, October 8

– 18:30 **REGISTRATION**

18:30 – 20:30 **RECEPTION & WELCOME PARTY**

Monday, October 9

08:15 – 08:45 **PRESENTATION**

Session 1-A: Characterization Techniques (I)

Chairman: Anna Mogilatenko

08:45 – 09:15 **1A-I1, Invited**

TEM characterization of nitride quantum structures and devices

J. Smalc-Koziorowska¹, E. Grzanka¹, Ł. Marona¹, R. Czernecki¹, Cz. Skierbiszewski¹, T. Suski¹, M. Leszczyński¹, G. Dimitrakopoulos², J. Moneta³ and M. Albrecht³ (¹Institute of High Pressure Physics “Unipress”, Polish Academy of Sciences, Warsaw, Poland, ²Aristotle University of Thessaloniki, Thessaloniki, Greece, ³Leibniz Institute for Crystal Growth, Berlin, Germany)

09:15 – 09:30 **1A-O1**

Imaging the Dynamics and 3D Structure of Dislocation Arrangements in Semiconductor Wafers by Means of X-Ray Diffraction Laminography

S. Bode¹, M. Kabukcuoglu^{2,3}, S. Haaga^{2,3}, E. Hamann³, D. Hänschke³, L. Helfen^{3,4}, A. Danilewsky² and T. Baumbach^{1,3} (¹Laboratory for Applications of Synchrotron Radiation (LAS), Karlsruhe Institute of Technology (KIT), Eggenstein, Germany, ²Kristallographie, A.-Ludwigs-Universität Freiburg, Freiburg, Germany, ³Institute for Photon Science and Synchrotron Radiation (IPS/ANKA), Karlsruhe Institute of Technology (KIT), Eggenstein, Germany, ⁴European Synchrotron Radiation Facility (ESRF), Grenoble, France)

- 09:30 – 09:45 **1A-O2**
Structure of pseudomorphic Fe₃Si/Ge/Fe₃Si thin film stacks on GaAs(001)
B. Jenichen¹, M. Hanke¹, S. Gaucher¹, J. Herfort¹, U. Jahn¹, A. Trampert¹ and H.Kirmse² (¹Paul-Drude-Institut, Berlin, Germany, ²Department of Physics, Humboldt-University, Berlin, Germany)
- 09:45 – 10:00 **1A-O3**
The origin of compressive strain in surface damaged crystals
C. Ferrari¹, E. Rotunn¹ and C. Ghica², (¹IMEM Institute, National Research Council, Parma, Italy, ²National Institute of Materials Physics, Bucharest, Romania)
- 10:00 – 10:15 **1A-O4**
Identification of Extended Defect Atomic Configurations in Silicon through Transmission Electron Microscopy Image Simulation
M. Ruiz, M. Aboy, L.A. Marqués, I. Santos, P. López and L. Pelaz (Departamento de Electricidad y Electrónica, Universidad de Valladolid, Valladolid, Spain)
- 10:15 – 10:30 **1A-O5**
Atom-scale structural characterization of bismuth incorporation in GaAs/GaAs_{1-x}Bi_x/GaAs structures
N. Baladés^{1,2}, D.L. Sales^{1,2}, M. Herrera^{1,2}, C.H. Tan³, R. Roberts³ and S.I.Molina^{1,2} (¹Department of Material Science, Metallurgical Engineering and Inorganic Chemistry, University of Cádiz, Cádiz, Spain, ²Instituto Universitario de Investigación en Microscopía Electrónica y Materiales (IMEYMAT). Facultad de Ciencias. Universidad de Cádiz, Cádiz, Spain, ³Department of Electronic and Electrical Engineering, University of Sheffield, Sheffield, UK)
- 10:30 – 10:55 **COFFEE BREAK**

Session 1-B: Characterization Techniques (II)

Chairman: Salvador Dueñas

- 10:55 – 11:25 **1B-I1, Invited**
Using MIS structures to probe bulk traps: the case of ZnO
A. Hierro¹, A. Kurtz¹, J.M Chauveau² and E. Muñoz¹, (¹ISOM-Dept. Ing. Electronica, Univ. Politecnica de Madrid, Spain, Université Côte d'Azur, CNRS, CRHEA, Valbonne, France)
- 11:25 – 11:45 **1B-I2, Invited**
Towards atomic layer deposition of magnetoelectric thin films: Issues
K. Kukli (Institute of Physics, University of Tartu, Tartu, Estonia, and Department of Chemistry, University of Helsinki, Helsinki, Finland)

- 11:45 – 12:00 **1B-O1**
Two-dimensional imaging of MOS interface trap using local deep level transient spectroscopy based on scanning nonlinear dielectric microscopy
N. Chinone and Y. Cho (Research Institute of Electrical Communication, Tohoku University, Sendai, Japan)
- 12:00 – 12:15 **1B-O2**
Anisotropic Biaxial Strain Evaluation in MOCVD Grown $\text{Ge}_{1-x}\text{Sn}_x$ Mesa Patterned Structure by Oil-Immersion Raman Spectroscopy
T. Murakami, K. Takeuchi, R. Yokogawa, K. Suda, K. Yoshioka, S. Ishihara and A. Ogura (University of Meiji, Kawasaki, Japan)
- 12:15 – 12:30 **1B-O3**
SIRD and SIREX – Two Photo-elastic Measurement Systems for Defect Recognition and Evaluation in R&D and Industrial Production Control
M. Herms, G. Kupka and M. Wagner (PVA Metrology & Plasma Solutions GmbH, Jena-Maua, Germany)
- 12:30 – 12:45 **1B-O4**
Band-like behavior of mono-energetic trap in the attractive deformation potential of dislocation
A. Bondarenko and O. Vyvenko (Faculty of Physics, St. Petersburg State University, St. Petersburg, Russia)
- 12:45 – 13:00 **1B-O5**
Mechanical Stress in InP Structures Etched in an Inductively Coupled Plasma Reactor with Chlorine Chemistry
J.P. Landesman¹, D.T. Cassidy², E. Pargon³, C. Levallois⁴, M. Mokhtari¹, J. Jiménez⁵, and A. Torres⁵ (¹Institut de Physique de Rennes, Université Rennes, Rennes, France, ²McMaster University, Department of Engineering Physics, Hamilton, Canada, ³Univ. Grenoble Alpes, Grenoble, France, ⁴UMR FOTON, CNRS, INSA-Rennes, Rennes, France, ⁵GdS Optronlab, Dpto. Física de la Materia Condensada, Universidad de Valladolid, Valladolid, Spain)
- 13:00 – 13:15 **1B-C**
Correlative and High-resolution Confocal Raman Imaging for Semiconductor Characterization
E. Bailo, WITec GmbH
- 13:15 – 14:45 **LUNCH**

Session 1-C: Characterization Techniques (III)

Chairman: Ute Zeimer

- 14:45 – 15:15 **1C-I1, Invited**
Time-resolved Scanning Near-field Optical Spectroscopy: Application for InGaN Quantum Wells
S. Marcinkevičius (KTH Royal Institute of Technology, Department of Applied Physics)
- 15:15 – 15:30 **1C-O1**
Combining qualitative and quantitative X-ray Bragg diffraction imaging at the ESRF to study defects in semiconductors: the example of PV silicon.
T.N. Tran Thi¹, V.A. Oliveira², D. Camel², D. Caliste³, J. Härtwig¹ and J. Baruchel¹ (¹European Synchrotron Radiation Facility (ESRF), Grenoble, France, ²INES, CEA, Le Bourget du Lac, France, ³L Sim, MEM, UMR-E CEA/UGA, INAC, Grenoble, France)
- 15:30 – 15:45 **1C-O2**
Atom Probe and Cathodoluminescence study of Mg implanted layers in GaN.
T. Sekiguchi¹, T. Kimura¹, X. Luo¹, Y. Cho¹, K. Mitsuishi¹, T. Ohkubo¹, J. Uzuhashi¹, K. Hono¹, M. Edo² and S. Takashima² (¹National Institute for Materials Science, Tsukuba, Japan, ²Fuji Electric Co. Ltd., Hino, Japan)
- 15:45 – 16:00 **1C-O3**
W and X photoluminescence centers in c-Si: chasing candidates at atomic level through multiscale simulations
I. Santos, M. Aboy, P. López, L.A. Marqués and L. Pelaz (Departamento de Electricidad y Electrónica, Universidad de Valladolid, Valladolid, Spain)
- 16:00 – 16:15 **1C-O4**
Photoluminescent tomography of semiconductors by two-photon confocal microscopy technique
V.P. Kalinushkin, O.V. Uvarov, A.A. Gladilin, Prokhorov General Physics Institute RAS, Moscow, Russia
- 16:15 – 16:30 **1C-O5**
Spatial Mapping of Exciton Lifetimes in Single ZnO Nanowires
F. Güell¹, J.S. Reparaz², G. Callsen², M.R. Wagner², A. Hoffmann² and J.R. Morante^{1,3} (¹Departament d'Electrònica, Universitat de Barcelona, Barcelona, Spain ²Institut für Festkörperphysik, Technische Universität Berlin, Berlin, Germany ³IREC-Institut de Recerca en Energia de Catalunya, Sant Adrià de Besòs, Spain)

16:30 – 16:45 **1C-O6**

Accurate measurement of carbon concentration in silicon crystal down to 10^{14} cm⁻³ by the second generation infrared absorption spectroscopy

N. Inoue^{1,2} and Y. Kawamura² (¹Tokyo Univ. Agri. Technol., Koganei, Tokyo, ²Osaka Prefecture University, 1-2, Gakuencho, Nakaku, Sakai, Osaka, Japan

16:45 – 17:00 **COFFEE BREAK**

Session 2-A: Wide Band Gap Semiconductors (I)

Chairman: Hidekazu Tsuchida

17:00 – 17:30 **2A-I1, Invited**

Defect Induced Luminescence in Hydrogen Doped ZnO

M.R. Phillips, L. Zhu and C. Ton-That (School of Mathematical and Physical Sciences, University of Technology, Sydney)

17:30 – 17:45 **2A-O1**

Non-Destructive Detection of Screw Dislocations and the corresponding Defects Nucleated from them during SiC Epitaxial Growth and their effect on Device Characteristics

H. Das¹, S. Sunkari¹ and H. Naas² (¹ON Semiconductor, South Portland, USA, ²ON Semiconductor, Kista-Stockholm, Sweden)

17:45 – 18:00 **2A-O2**

Luminescence intensity enhancement in GaN-based heterostructures stimulated by low energy electron beam irradiation

Y.V. Kuznetsova and M.V. Zamoryanskaya (Loffe Institute, St.Petersburg, Russia)

18:00 – 18:15 **2A-O3**

Residual strain on epitaxial porous GaN grown by CVD characterized by optical and structural techniques

J.J. Carvajal¹, J. Mena¹, F. Díaz¹, M. Aguiló¹, O. Martínez², J. Jiménez², Z. Zubialeovich³ and P.J. Parbrook³ (¹Física i Cristal·lografia de Materials i Nanomaterials (FiCMA-FiCNA) and EMaS, Universitat Rovira i Virgili (URV), Tarragona, Spain, ²GdS-Optronlab group, Dpto. Física de la Materia Condensada, Univ. de Valladolid, Valladolid, Spain Vitaly, ³Tyndall National Institute, Lee Maltings, Dyke Parade, Cork, Ireland)

- 18:15 – 18:30 **2A-O4**
Cathodoluminescence study of pn junctions in GaN using oblique cutting method
Y. Cho, Y. Yao, X. Luo, T. Kimura, T. Sekiguchi (WPI Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science, Tsukuba, Japan)
- 18:30 – 18:45 **2A-O5**
Nanocharacterization collocated of defects and luminescence in InGaAs quantum well
J. Roque^{1,2}, N. Rochat¹, F. Bertin¹, N. Bernier¹, S.D.² and G. Beany² (¹Univ. Grenoble Alpes, F-38000 Grenoble, France CEA, LETI, MINATEC Campus, Grenoble, France, ²Univ. Grenoble Alpes, LTM, F-38000 Grenoble, France CNRS, LTM, F-38000 Grenoble, France)
- 18:45 – 20:00 **POSTER SESSION (I)**

Tuesday, October 10

Session 2-B: Wide Band Gap Semiconductors (II)

Chairmans: Adrián Hierro / Juan Jiménez

- 08:30 – 09:00 **2B-I1, Invited**
Characterization of AlN grown on sapphire substrate by hydride vapor phase epitaxy
X. Su, J. Huang, J. Wang and K. Xu (Suzhou Institute of Nano-tech and Nanobionics, Chinese Academy of Sciences, Suzhou, People's Republic of China)
- 09:00 – 09:30 **2B-I2, Invited**
Defect Characterization, Imaging, and Control in Wide Band Gap Semiconductors and Devices
L.J. Brillson (The Ohio State University, Columbus, USA)
- 09:30 – 09:45 **2B-O1**
Crystallographic Analysis of <c + a> Threading Mixed Dislocation Variants in a 4H-SiC Epilayer
J.P. Hadorn, R. Tanuma, I. Kamata and H. Tsuchida (Central Research Institute of Electric Power Industry (CRIEPI), JAPAN)

09:45 – 10:00 **2B-O2**

Strain Driven Σ 7-rotation in AlN Films on Sapphire by HVPE

J. Zhao¹, X. Su¹, J. Zhang¹, L. Shi¹, J. Huang¹, K. Wu¹, G. Zhu³, J. Zhang¹ and K. Xu^{1,2}
(¹Suzhou Institute of Nano-Tech and Nano-Bionics, Chinese Academy of Sciences, Suzhou, China, ²Suzhou Nanowin Science and Technology Co. Ltd., Suzhou, China, ³Center of Electron Microscopy, Zhejiang University, Hangzhou, China)

10:00 – 10:15 **2B-O3**

Observation of threading dislocations in ammono-thermal gallium nitride single crystal by using synchrotron X-ray topography

Y. Yao¹, Y. Ishikawa¹, Y. Sugawara¹, and K. Hirano² (¹Japan Fine Ceramics Center, Nagoya, Japan Yumiko Takahashi, ²High Energy Accelerator Research Organization (KEK), Tsukuba, Japan)

10:15 – 10:30 **2B-O4**

Investigating Local Variations in the Activation Energy of E_c-0.57 eV Traps in GaN

K. Galiano¹, J.I. Deitz¹, S.D. Carnevale¹, D.A. Gleason¹, Z. Zhang¹, S.A. Ringel¹, T.J. Grassman¹, A.R. Arehart¹, J.P. Pelz¹, B. McSkimming² and J.S. Speck² (¹The Ohio State University, Columbus, OH, USA, ²University of California, Santa Barbara, CA, USA)

10:30 – 10:45 **2B-O5**

Enhanced p-type doping in Al-rich AlGa_N using modified surface Engineering

J. Kang, W. Lin, S. Lu, H. Li, and S. Li, (Department of Physics, OSED, Fujian Provincial Key Laboratory of Semiconductor Materials and Applications, Xiamen University, China)

10:45 – 11:00 **2B-O6**

Radiation-induced alloy rearrangement in In_xGa_{1-x}N

V. Prozheeva¹, I. Makkonen¹, F. Tuomisto¹, R. Cuscó², L. Artús², A. Dadgar³ and F. Plazaola⁴ (¹Department of Applied Physics, Aalto University School of Science, Finland, ²Institut Jaume Almera (ICTJA-CSIC), Consejo Superior de Investigaciones Científicas, Barcelona, Spain, ³Institut für Experimentelle Physik, Otto-von-Guericke-Universität Magdeburg, Magdeburg, Germany, ⁴Elektrizitatea eta Elektronika Saila, UPV-EHU, Bilbao, Spain)

11:00 – 11:15 **2B-O7**

Defect Assisted Current Transport Mechanism in III-V Semiconductors for Thermoelectric Applications

A. Kumar¹, J. Dhillon¹, R.C. Meena¹, K. Asokan¹, D. Kanjilal¹ and R. Singh² (¹Inter University Accelerator Center, Aruna Asaf Ali Road, New Delhi, India, ²Department of Physics, Indian Institute of Technology Delhi, Hauz khas, New Delhi, India)

11:15– 11:45 **COFFEE BREAK**

Session 3-A: Device Characterization (I)

Chairman: Martina Baeumler

11:45 – 12:15 **3A-I1, Invited**

Time-dependent degradation mechanisms and defects in GaN lateral and vertical devices

E. Zanoni¹, A. Barbato¹, D. Bisi¹, M. Borga¹, C. De Santi¹, F. Rampazzo¹, I. Rossetto¹, M. Ruzzarin¹, N. Trivellin¹, G. Meneghesso¹, M. Meneghini¹, A. Chini² and G. Verzellesi² (¹Department of Information Engineering, University of Padova, Italy, ²University of Modena and Reggio Emilia, Italy)

12:15 – 12:30 **3A-O1**

Evaluation of Anisotropic Biaxial Stress Induced Around Trench Gate of Si Power Transistor using Water Immersion Raman Spectroscopy

T. Suzuki¹, R. Yokogawa², A. Ogura², K. Oasa², T. Nishiwaki², T. Hamamoto² (¹Meiji University, 1-1-1 Higashimita, Tama-ku, Kawasaki, Japan, ²Toshiba Corporation, 1-1-1 Shibaura, Minato-ku, Japan)

12:30 – 12:45 **3A-O2**

Observing E_c -0.57 eV Trapping in Cross-Sectioned AlGaIn/GaN Schottky Contacts Using Nanometer-Scale Scanning Probe-Deep Level Transient Spectroscopy with *In Situ* Biasing

D.A. Gleason¹, K. Galiano¹, J.P. Pelz¹, J.L. Brown², A.M. Hilton², E.R. Heller³, D.L. Dorsey³ (¹The Ohio State University, Columbus, Ohio, USA, ²KBRwyle Aerospace Group, Dayton, Ohio, USA, ³Materials and Manufacturing Directorate, Air Force Research Laboratory, Dayton, Ohio, USA)

12:45 – 13:00 **3A-O3**

Investigation of GaN MIS Interfaces by Electron-beam-induced Current

J. Chen, W. Yi, Y. Cho, T. Nabatame, T. Sekiguchi and T. Chikyo (International Institute for Materials Science, Tsukuba, Japan)

13:00 – 13:15 **3A-O4**

Photoconductivity of macroporous silicon with an ultra-thin oxide layers

K.P. Konin, V.E. Lashkaryov, N.I. Karas, D.V. Morozovskaya (Institute of Semiconductor Physics, Kyiv, Ukraine)

13:15 – 13:30 **3A-C**

Advanced Technics for Defects Localization in Semicon Industry on actual devices

J. Roux, Hamamatsu Photonics France

13:30 – 14:45 **LUNCH**

Session 3-B: Device Characterization (II)

Chairman: Jean Pierre Landesman

14:45 – 15:15 **3B-I1, Invited**

Defects in AlN bulk crystal substrates for UV LEDs and lasers

M. Bickermann, C. Hartmann, A. Dittmar, S. Sintonen, S. Kollowa, T. Schulz, K. Irmischer and J. Wollweber (Leibniz Institute for Crystal Growth (IKZ) Berlin, Germany)

15:15– 15:30 **3B-O1**

Crystal defect analysis in AlGaIn-based light emitters grown on bulk AlN

A. Mogilatenko¹, U. Zeimer¹, A. Knauer¹, M. Weyers¹, C. Hartmann², J. Wollweber², A. Dittmar², M. Bickermann², C. Kuhn³, T. Wernicke³ and M. Kneissl³ (¹Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik, Berlin, Germany, ²Leibniz-Institut für Kristallzüchtung, Berlin, Germany, ³Technische Universität Berlin, Institut für Festkörperphysik, Berlin, Germany)

15:30– 15:45 **3B-O2**

Buffer layers design for InGaAs/GaSb/GaAs photodiode structures

M. Gutiérrez¹, D. Araújo¹, P. Jurczak², J. Wu² and H.L. Yun² (¹Departamento de Ciencia de los Materiales e Ingeniería Metalúrgica. Universidad de Cádiz, Cádiz, Spain, ²Department of Electronic & Electrical Engineering, University College London. Torrington Place. London)

15:45– 16:00 **3B-O3**

Catastrophic Optical Damage of GaN-based diode lasers: Sequence of Events, Damage Pattern, and Comparison with GaAs-based Devices

J.W. Tomm¹, G. Mura², M. Vanzì², M. Hempel³ (¹Max-Born-Institut für Nichtlineare Optik und Kurzzeitspektroskopie, Berlin, Germany, ²Department of Electrical and Electronic Engineering, University of Cagliari, Cagliari, Italy, ³Paul Drude Institut, Hausvogteiplatz, Berlin, Germany)

16:00– 16:15 **COFFEE BREAK**

Session 3-C: Device Characterization (III)

Chairman: Jens W. Tomm

16:15 – 16:45 **3C-I1, Invited**

Gradual Degradation in III-V and GaN-Related Optical Devices

O. Ueda (Graduate School of Engineering, Kanazawa Institute of Technology, Tokyo, Japan)

16:45 – 17:00 **3C-O1**

Micro X-ray Computed Tomography of Semiconductor Devices

L. Kirste, M. Prescher, M. Baeumler, C. Schilling, O. Göhlich, and W. Bronner (Fraunhofer Institute for Applied Solid State Physics IAF, Freiburg, Germany)

17:00 – 17:15 **3C-O2**

Influence of Si-doping on the optical, structural and lasing properties of 240 nm lasers

U. Zeimer¹, J. Jeschke¹, A. Mogilatenko¹, C. Netzel¹, S. Hagedorn¹, A. Knauer¹, M. Weyers¹, M. Martens² and M. Kneissl² (¹Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik, Berlin, Germany, ²Institute of Solid State Physics, Technische Universität Berlin, Berlin, Germany)

17:15 – 17:30 **3C-O3**

Temperature induced degradation mechanisms of AlInAs/InGaAs/InP quantum cascade lasers

D. Pierścińska, K. Pierściński, G. Sobczak, A. Kuźmich, M. Płuska, P. Gutowski and M. Bugajski (Institute of Electron Technology, Warszawa, Poland)

17:30 – 17:45 **3C-O4**

Micro-PL and DOP characterization of vertical cavity surface emitting lasers for emission at 850 nm with Al oxide confinement layers

M. Mokhtari¹, Ph. Pagnod-Rossiaux¹, F. Laruelle¹, J.P. Landesman², A. Moréac², C. Levallois³ and D.T. Cassidy⁴, (¹3SP Technologies S.A.S, Nozay, France, ²Institut of Physics of Rennes, CNRS-Université de Rennes, Rennes, France, ³UMR FOTON, CNRS, INSA Rennes, Rennes, France, ⁴Department of Engineering Physics, McMaster University, Hamilton, Canada)

18:00– 20:00 **CITY TOUR**

Wednesday, October 11

Session 4-A: Photovoltaics: Silicon (I)

Chairman: Deren Yang

08:30 – 09:00 **4A-I1, Invited**

Photoluminescence Imaging on Multi-crystalline Silicon

M. Juhl, Z. Hameiri, D. Chung, B. Mitchell and T. Trupke (University of New South Wales, Sydney, Australia)

- 09:00 – 09:15 **4A-O1**
Phosphorus diffusion gettering efficacy in Upgraded Metallurgical Grade Solar Silicon
C. Cid, A. Peral, C. del Cañizo (Instituto de Energía Solar, Universidad Politécnica de Madrid, Madrid, Spain)
- 09:15 – 09:30 **4A-O2**
Determination of Low Carbon Concentration in Czochralski-Grown Si for Solar cells by Liquid-Nitrogen-Temperature Photoluminescence after Electron Irradiation
H. Kiuchi, M. Tajima, F. Higuchi, Y. Ishikawa, and A. Ogura (Meiji Univ., Higashimita, Kawasaki, Kanagawa, Japan)
- 09:30 – 09:45 **4A-O3**
Energy levels of defects created in silicon supersaturated with transition metals
H. García¹, H. Castán¹, S. Dueñas¹, E. García-Hemme², R. García-Hernansanz², D. Montero² and G. González-Díaz² (¹Department of Electronics, University of Valladolid, Spain, ²Dept. de Física Aplicada III (Electricidad y Electrónica), Univ. Complutense de Madrid, Spain)
- 09:45– 10:15 **COFFEE BREAK**

Session 4-B: Photovoltaics: Silicon (II)

Chairman: Carlos del Cañizo

- 10:15 – 10:45 **4B-I1**
Design and property of graphene-crystalline silicon solar cells
X. Yu, D. Xu, K. Huang, M. Zhong and D. Yang (State Key Lab of Silicon Materials Department of Materials Science and Engineering, Zhejiang University, Hangzhou, P. R. China)
- 10:45 – 11:00 **4B-O1**
Defect-related electroluminescence in the 1.2-1.7 μm range from boron-implanted silicon at room temperature
Y. Gao, D. Li and D. Yang (State Key Laboratory of Silicon Materials and School of Materials Science and Engineering, Zhejiang University, Hangzhou, China)

- 11:00 – 11:15 **4B-O2**
The use of electro-luminescence in the analysis of laser-induced damage in solar cell processing
A. Otaegi, V. Fano, R. Gutiérrez, J.C. Jimeno, N. Azkona, E. Cereceda, P. Rodríguez and F. Recart (Technological Institute of Microelectronics, University of the Basque Country, UPV/EHU, Bilbao, Spain)
- 11:15 – 11:30 **4B-O3**
Effect of germanium doping on the formation and evolution behaviors of divacancy complex in neutron irradiated Czochralski silicon
P. Dong¹, Y. Song¹, M. Li¹, G. Dai¹, J. Zhang¹, X. Yu² and D. Yang² (¹Microsystem & Terahertz Research Center, China Academy of Engineering Physics, Chengdu, China, ²State Key Laboratory of Si Materials and Department of Materials Science and Engineering, Zhejiang University, Hangzhou 310027, China)
- 11:30 – 11:45 **4B-O4**
Systematic Variation of Photoluminescence with Dopant Impurities in Highly Doped and Highly Compensated Si
M. Tajima¹, K. Nakagawa¹, H. Kiuchi¹, A. Ogura¹, T. Bartel² and F. Kirscht² (Meiji Univ., Kawasaki, Kanagawa, Japan, ²Silicor Materials Inc., Berlin, Germany)
- 11:45 – 12:00 **4B-O5**
Electro- and Photo- luminescence analysis of Si solar modules and plants by an innovative cost effective day-light system
S. Rodríguez-Conde¹, M. Guada¹, A. Moretón¹, O. Martínez¹, M.A. González¹, J. Jiménez¹, J. Pérez², M. Martínez³, J.A. Florez³, F. Domínguez³, A. Velasco³, L. Pérez³, V. Parra³ (¹GdS-Optronlab Group, Dpto. Física de la Materia Condensada, Univ. de Valladolid, Edificio LUCIA, Paseo de Belén 19, 47011 Valladolid, Spain, ²Dpto. Ingeniería Eléctrica, Escuela de Ingenieros Industriales, Univ. de Valladolid, Francisco Mendizábal 1, 47014 Valladolid, Spain, ³Enertis Solar, SL. Av. Bruselas 31, 1st floor, 28108 Alcobendas, Madrid, Spain)
- 12:00 – 13:15 **POSTER SESSION (I)**
- 13:15 – 14:45 **LUNCH**
- 15:30 – 23:00 **EXCURSION & CONFERENCE DINER**

Thursday, October 12

Session 5: Photovoltaics: Others Materials

Chairman: Takashi Sekiguchi

08:30 – 09:00 **5-I1, Invited**

Investigating Degradation Mechanisms in Si and Thin-Film PV Modules via Multi-Scale, Multi-Technique Defect Imaging

M. Al-Jassim, H. Guthrey, P. Hacke, S. Harvey, C. Jiang, S. Johnston, J. Moseley, H. Moutinho, A. Norman, and C. Xiao (National Renewable Energy Laboratory, Golden, CO, USA)

09:00 – 09:15 **5-O1**

Characterization of depth profile of impurity phase in widegap Cu(In,Ga)Se₂

S. Wang¹, M.M. Islam¹, H. Hagiya¹, T. Nazuka¹, Y. Takabayashi¹, K. Akimoto¹, T. Sakurai¹, S. Ishizuka², H. Shibata² and S. Niki² (¹Institute of Applied Physics, University of Tsukuba, Tsukuba, Japan, ²National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan)

09:15 – 09:30 **5-O2**

Impact of point defects on the vibrational properties of chalcogenide semiconductors: UV resonant Raman defect assessment of Cu₂ZnSnSe₂ photovoltaic absorbers

L. Arqués¹, F. Oliva¹, S. Giraldo¹, E. Saucedo¹, A. Pérez-Rodríguez^{1,2}, V. Izquierdo-Roca¹, (¹Catalonia Institute for Energy Research (IREC), Sant Adrià de Besòs, Spain; ²IN2UB, Department of Electronics, University of Barcelona, Spain)

09:30– 09:45 **5-O3**

The influence of Cu content on the performance of CIGS based solar cells

J.P. Leitão¹, J.P. Teixeira¹, M. Edoff², P.M.P. Salomé³ (¹Departamento de Física and I3N, Universidade de Aveiro, Aveiro, Portugal, ²Ångström Laboratory, Solid State Electronics, Ångström Solar Center, Uppsala University, Uppsala, Sweden, ³International Iberian Nanotechnology Laboratory, Braga, Portugal)

09:45– 10:00 **5-O4**

Effect of thin GaAs(SbN) capping layers on (un)coupled InAs/GaAs multi-quantum dot layers for enhanced solar cells.

D.F. Reyes¹, V. Braza¹, T. Ben¹, D. González¹, A.D. Utrilla², A. Gonzalo², and J.M. Ulloa² (¹University Research Institute on Electron Microscopy & Materials, (IMEYMAT) Universidad de Cádiz, Cádiz, Spain, ²Institute for Systems based on Optoelectronics and Microtechnology (ISOM), Universidad Politécnica de Madrid, Madrid, Spain.)

10:00– 10:15 **5-O5**

Photoluminescence Properties of InGaPN and GaAsPN Solar Cells

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10:15 – 10:45 **COFFEE BREAK**

Session 6: Nanostructures

Chairman: Junyong Kang

10:45 – 11:15 **6-11, Invited**

Free-standing semiconductor nanostructures: how crystal defects can modulate the final 3D morphology and properties

J. Arbiol (ICREA & Catalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC& BIST, Bellaterra, Barcelona, Spain)

11:15 – 11:30 **6-O1**

Plasma etching, defect formation and changes in the electronic and structural properties of InP/InAsP quantum wells

*J.P. Landesman¹, J. Jiménez², A. Torres², C. Levallois³, Y. Léger³ and C. Frigeri⁴
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11:30 – 11:45 **6-O2**

Super-resolved 3D surface characterization of nano-materials using microsphere-assisted Linnik interferometry

P.C. Montgomery, S. Lecler, S. Perrin, A. Leong-Hoi and P. Pfeiffer, (ICube Laboratory, University of Strasbourg-CNRS, Illkirch, France)

11:45 – 12:00 **6-O3**

Electromagnetic Field Enhancement on axially heterostructured NWs

J.L. Pura, A.J. Magdaleno, J. Souto and J. Jiménez (GdS Optronlab, Departamento de Física de la Materia Condensada, Ed. LUCIA, Universidad de Valladolid, Valladolid, Spain)

12:00 – 12:15 **6-04**

Photocatalytic Performance of Highly Crystalline ZnO Nanowires for H₂ Evolution from Ethanol(aq) in Vapor Phase

*A. C. Sola^{1,2}, P. Ramírez de la Piscina¹, P. R. Martínez-Alanis³, F. Güell³, N. Homs^{1,2},
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12:15 – 12:30 **6-05**

Optical properties of as-grown and annealed GaAs/GaAsBi single quantum well structures grown by Molecular Beam Epitaxy

*H. Alghamdi¹, M. Henini¹, D. Fan^{3,4}, Y.I. Mazur⁴, M.E. Ware^{3,4}, S.Q. Yu^{3,4} and G.J. Salamo⁴
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12:30 – 13:00 **CONCLUSIONS & REMARKS**

13:00 – 14:30 **LUNCH**