ICANS 28

4 - 9 August 2019 Ecole Polytechnique, Palaiseau, France

Conference programme / Outline of the week

Sunday, 4 August

9:45-11:15

K. Lips
ESR and DB Defects and Tail States

S. Baranovski
Theoretical treatment of charge transport in disordered semiconductors

11:15-11:30: Coffee Break

11:30-13:00

J. Schmitt & P. Roca
PECVD: From basics of Plasma Physics to Epitaxy and Industry

O. Isabella
Advanced Opto-Electrical Modelling of Solar Celles, Photovoltaic Modules and XIPV Systems

13:00-14:00: Lunch

14:00-15:30

J.P. Kleider & C. Longeaud
Photocurrent techniques for the study of transport and defects

P. Schulz
Surface Science For Halide Perovskite Semiconductors

15:30-16:00: Coffee Break

16:00-17:30

S. De Wolf
High-Efficiency Silicon Het. Solar Cells: Properties, Processing and Paths towards Ultra-High Efficiencies

T. Kamiya
Thin Film Transistors: Device Structures, Materials, Physics and Applications

17:30-19:30

Welcome Reception

Monday, 5 August

9:15-9:30: Opening

9:30 – 10:10 **Mott Lecture**
E. Fortunato

10:10 – 11:10 **Defects/ Transport 1**
Invited: N. Nickel
Amphi Gay Lussac

11:10 – 11:30 Coffee Break

11:30 – 13:10 **Interfaces 1**
Invited:
P. Schulz
S. De Wolf
Amphi Gay Lussac

13:10 – 14:30 Lunch Break

14:30 – 16:10 **Materials 1**
Invited: A. Fejfar
Amphi Gay Lussac

16:10 – 16:40 Coffee Break

16:40 – 18:20 **Characterization 1**
Invited: K. Lips
Amphi Gay Lussac

18:20 – 20:20 **Poster Session 1**
Food and Beverage

Tuesday, 6 August

Growth 1
Invited: M. Shiratani
Amphi Gay Lussac

Coffee Break

Devices 1
Invited: X. Pi
Amphi Gay Lussac

Lunch Break

Devices 2
Invited:
F. Finger
Amphi G. L.

Charac. 2
Invited:
C. Longeaud
Amphi Becquerel

Coffee Break

Modeling
Invited:
M. Topič
Amphi G.L.

Materials 2
Invited:
H. Hosono
Amphi Becquerel

Poster Session 2
Food and Beverage

Wednesday, 7 August

Staebler & Wronski
Invited:
R. Biswas/ A. Smets/
K. Morigaki/ K. Lips
M. Günes
Amphi Gay Lussac

Coffee Break

Devices 3
Invited:
M. Li
X. Zhang
Amphi Gay Lussac

Lunch

Horiba Visit (limited number)

Excursion to Château de Versailles

19:00-23:00: Gala dinner

Thursday, 8 August

Devices 4
Invited: R.A. Street
Amphi Gay Lussac

Coffee Break

Materials 3
Invited: R. Curry
Amphi Gay Lussac

Lunch Break
IAC meeting

Devices 5
Amphi G.L.

Interfaces 2
Amphi Becquerel

Coffee Break

Devices 6
Invited:
S. Kasap
Amphi G.L.

Growth 2
Invited:
A. Smets
Amphi Becquerel

Poster Awards & Student Awards
with live music, food and drinks

Friday, 9 August

Defects/ Transport 2
Invited: A. Nenashev
Amphi Gay Lussac

Coffee Break

Interfaces 3
Invited: J. Melskens
Amphi Gay Lussac

Closing Remarks

Lunch

Horiba or IPVF Visit (limited number)

ICANS 28

4 - 9 August 2019 Ecole Polytechnique, Palaiseau, France
Conference Detailed Programme

Monday, 5 August 2019

9:15-9:30	**Opening of the ICANS 28 Conference**	
9:30-10:10	**Plenary Session: Mott Lecture**	
	Metal Oxides vs Multifunctional Materials E. Fortunato	**Mo.Mott**
10:10-11:10	**Plenary Session: Defects and Transport 1**	
Chair Person: Philip Schulz	**Invited: Defect generation and stability of halide perovskites** N. Nickel	**Mo.Def1.O1**
	Defects in Metal Halide Perovskites: Thin Films versus Bulk Crystals M. Ledinský, A. Vlk, Z. Remeš, Zdeněk, T. Schönfeldová, J. Holovsky, Z. Hájková , L. Landová, E. Aidyn, S. De Wolf, A. Fejfar	**Mo.Def1.O2**
11:30-13:10	**Plenary Session: Interfaces 1**	
Chair Person: Sigurd Wagner	**Invited: Halide Perovskites: Interface Chemistry and Characterization** P. Schulz	**Mo.Int1.O1**
	Invited: Contact Passivation in Silicon and Perovskite Solar Cells S. De Wolf	**Mo.Int1.O2**
	Development and characterization of µc-Si tunnel junction for monolithic perovskite/silicon-heterojunction tandem solar cells A. Puaud, S. Berson, D. Munoz	**Mo. Int1.O3**
13:10-14:30	**Lunch Break**	

ICANS 28

4 - 9 August 2019 Ecole Polytechnique, Palaiseau, France
Conference Detailed Programme

Monday, 5 August 2019

14:30-16:10 — **Plenary Session: Materials 1**

Chair Person: Stefaan De Wolf

Invited: New Role of Thin Films in Advanced Photovoltaics — **Mo.Mat1.O1**
A. Fejfar, M. Ledinský

Tuneable Visible Photoluminescence in a-Si:H/nc-Si:H Superlattices — **Mo.Mat1.O2**
A. Yadav, P. Agarwal, R. Biswas

Highly Efficient Green Electroluminescence From a-SiN x :O Film Via Localized Surface Plasmon of Laser Annealed Ag Nanosphere Arrays — **Mo.Mat1.O3**
Z.Y. Ma, Q. Xu, L. Xu, J. Xu, W. Li, K. Chen, X. Huang, D. Feng

Fabrication of Poly-Si Thin Films from a-SiOx via Conventional and Inverted Aluminum-Induced Layer Exchange Processes — **Mo.Mat1.O4**
A. Zamchiy, E. Baranov, E. Maximovskiy, V. Volodin

16:40-18:20 — **Plenary Session: Characterization 1**

Chair Person: Antonín Fejfar

Invited: Characterization Of a-Si:H/c-Si Interfaces Using UHV Conductive AFM And ESR — **Mo.Ch1.O1**
M. Terferi, H. Malissa, C. Thi Trinh, A. B. Morales-Vilches, C. Williams, C. Boehme, K. Lips

Revision of the Nanostructure of Hydrogenated Amorphous Silicon using SAXS, SANS and ASAXS — **Mo.Ch1.O2**
E. Gericke, A. Hoell, K. Lips, J. Melskens, S. Raoux, K. Rademann

Temperature Variation of Radiative Recombination Rate of Electron-hole Pairs in Hydrogenated Amorphous Silicon — **Mo.Ch1.O3**
C. Ogihara

Athermal Photo-Induced Phase Transitions In Non-Crystallie Chalcogenides — **Mo.Ch1.O4**
S. N Yannopoulos

18:20-20:20 — **Poster Session**

with food and beverage

Tuesday, 6 August 2019

9:30-11:10	**Plenary Session: Growth 1**	
Chair Person: Erik Johnson	**Invited: Advanced Methods of Thin Film Fabrication using Plasmas** M. Shiratani	**Tu.Gr1.O1**
	Low-Temperature Plasma Processing: Nanowires, Passivation and Epitaxy W. Chen, P. Roca i Cabarrocas	**Tu.Gr1.O2**
	Synthesis and surface modification of light emitting silicon nanoparticles using non-thermal plasma techniques M. Müller, P. Galar, J. Khun, V. Scholtz, A. Fejfar	**Tu.Gr1.O3**
	Sensitivity of Germanium Content on Growth Conditions of Silicon-Germanium Nanoparticles in Nonthermal Capacitively-Coupled Plasmas Md. Seraj Uddin, V. Vijayan, J.K. Rath	**Tu.Gr1.O4**
11:30-13:10	**Plenary Session: Devices 1**	
Chair Person: Robert Street	**Invited: Photodetectors and optoelectronic synaptic devices based on silicon nanocrystals** X. Pi	**Tu.Dev1.O1**
	Solar-Blind Ultraviolet Detection based on Wide-Bandgap a-SiNx:O/p-Si Heterostructure H. Dong, K. Chen, Z. Lin, W. Li, J. Xu, L. Su, H. Lu, X. Huang	**Tu.Dev1.O2**
	Photodetectors Made of 2D Semiconductors in a Van Der Waals Heterostructure P. Alpuim, B. Sompalle, J. Rodrigues, J. Santos, B. Baumgartner, C.D. Liao, J. Borme, A. Capasso, S. Sadewasser	**Tu.Dev1.O3**
	Photosensitive Inverters and Light-to-Frequency Conversion Circuits Based on Transistion Metal Dichalcogenides FETs and Cu-I Loads S. Hun Jin, S. Gi Seo	**Tu.Dev1.O4**
13:10-14:30	**Lunch Break**	

Tuesday, 6 August 2019

14:30-16:10 *Parallel Sessions*

Devices 2

Chair Person: Linwei Yu

Invited: Amorphous and microcrystalline silicon based multi-junction solar cells applied in photovoltaic-electrochemical systems for the generation of solar fuels — Tu.Dev2.O1

F. Finger, S. Haas, V. Smirnov, F. Urbain, K. Welter, K. Wilken

Advances in III-V Nanowires on Silicon for Tandem Solar Cells — Tu.Dev2.O2

A. Cattoni, R. De Lepinau, F. Oehler, A. Scaccabarozzi, H-L. Chen, G. Patriarche, F. Glas, S. Collin, J.-C. Harmand

Silicon Nanowire Solar Cells With µc-Si:H and a-Si:H Absorbers For Tandem Radial Junction Devices — Tu.Dev2.O3

L. Dai, M. Foldyna, I. Maurin, J. Alvarez, W. Wang, E. Ngo, J.L. Maurice, T. Gacoin, J.P. Kleider, P. Roca i Cabarrocas

Toward Wafer Equivalent Silicon Thin Film Solar Cells Based on Liquid Phase Crystallized Silicon on Glass — Tu.Dev2.O4

C. Thi Trinh, S. Garud, D. Amkreutz

Characterization 2

Chair Person: Rodrigo Martins

Invited: Study Of Transport Parameters And Defect States In Thin Film Perovskites Under Different Environments -Air Or Vacuum- And After Light Soaking — Tu.Ch2.O1

C. Longeaud

Direct Formation Of Depletion Type MOSFET on SOI Substrate For 3D NAND Flash Memory — Tu.Ch2.O2

X. Yu, Z. Ma, D. Tan, J. You, Z. Shen, L. Chen, Y. Sun, W. Li, K. Chen, D. Feng

Electrical characterization of low temperature plasma epitaxial Si grown on highly doped Si substrates — Tu.Ch2.O3

C. Leon, S. Le Gall, M.E. Gueunier-Farret, J.P. Kleider, P. Roca i Cabarrocas

Hybrid Lead Iodide Perovskite CH3NH3PbI3 Thin Films Analysed As Mixed Conductors: Their Implication On Current-Voltage Curves Under Dark Conditions — Tu.Ch2.O4

H. Lee, P. Chapon, S. Gaiaschi, C. Dindault, D. Tondelier, Y. Bonnassieux, V. Dericke, J.E. Bourée, B. Geffroy

16:40-18:20 *Parallel Sessions*

Modeling

Chair Person: Alexey Nenashev

Invited: Advanced modeling of high-efficiency solar cells — Tu.Mod.O1

M. Topič

Carrier Transport And Density Of States In Methylammonium Lead Iodide Perovskite Single Crystals — Tu.Mod.O2

S. Reynolds, Z. Ferguson, D. J Keeble

Gap States in Models of the Phase-Change Memory Material, $Ge_2Sb_2Te_5$, Simulated using a Machine-Learned Interatomic Potential — Tu.Mod.O3

K. Konstantinos, F.C. Mocanu, T.H. Lee, S.R. Elliott

Charge Collection Efficiency and its Variance in Integrating Semiconductor Detectors under Small to Large Signals: Monte Carlo Calculations — Tu.Mod.O4

K. Ramaswami, R. Johanson, S. Kasap

Materials 2

Chair Person: Norbert Nickel

Invited: Amorphous Semiconductors For OLEDs And Halide Perovskite LEDs — Tu.Mat2.O1

H. Hosono

Photoluminescence and Resilience to Irradiation Defects in CH3NH3PbI3 and CH3NH3PbBr3 Perovskites — Tu.Mat2.O2

O. Plantevin, S. K. Gautam, D. Garrot, G. Trippé-Allard, F. Lédée, E. Deleporte

Metallic Pb Formation As A Cause Of Light-Induced Reversible Changes In Perovskite Layers And Solar Cells — Tu.Mat2.O3

J. Holovský, A. Peter Amalathas, L. Landová, B. Dzurnak, B. Conrad, M. Ledinský, O. Pop-Georgievski, J. Svoboda, T. Chien-Jen Yang, Q. Jeangros

Percolation Description of Charge Transport in Amorphous Oxide Semiconductors — Tu.Mat2.O4

A.V. Nenashev, J.O. Oelerich, S.H.M. Greiner, A.V. Dvurechenskii, F. Gebhard, S.D. Baranovskii

18:20-20:20

Poster Session

with food and beverage

ICANS 28

4 - 9 August 2019 Ecole Polytechnique, Palaiseau, France
Conference Detailed Programme

Wednesday, 7 August 2019

9:30-11:10

Chair Person:
Sigurd Wagner

Plenary Session: Staebler & Wronski

Theoretical Understanding of The Staebler-Wronski Effect — **Wed.SW.O1**
R. Biswas

The Staebler-Wronski Effect in Hydrogenated Amorphous Silicon: Multiple Defects In Its Nanostructure Obtained From The Improved Dual Beam Photoconductivity Method — **Wed.SW.O2**
M. Güneş, J. Melskens, A. H. M. Smets

Light-Induced Defect Creation Processes and Light-Induced Defects in Hydrogenated Amorphous Silicon — **Wed.SW.O3**
K. Morigaki

Looking for a needle in a haystack – light generated dangling bonds seen through the Electron Paramagnetic Resonance in hydrogenated amorphous silicon? — **Wed.SW.O4**
K. Lips

The Staebler-Wronski effect and its link to the a-Si:H nanostructure — **Wed.SW.O5**
J. Melskens, M. Fischer, M. Zeman, A. H. M. Smets

11:30-13:10

Chair Person:
Hideo Hosono

Plenary Session: Devices 3

Invited: Structure Design and Stability Study of Perovskite Solar Cells — **Wed.Dev3.O1**
P. Cui, J. Ji, D. Wei, H. Huang, H. Jiang, X. Liu, M. Li

Invited: Monolithic Perovskite/Silicon Heterojunction Tandem Solar Cells With Open-Circuit Voltage of Over 1.8V — **Wed.Dev3.O2**
F. Hou, L. Yan, B. Shi, Y. Zhao, X. Zhang

Chemical and Optoelectrical Modification of the Electron Transport Layer/Perovskite Interface Using Self Assembled Monolayers for Photovoltaic Devices — **Wed.Dev3.O3**
O. Fournier, C. Darin Bapaume, D. Messou, J. Alvarez, L. Lombez, S. Béchu, M. Bouttemy, P. Schulz, N. Schneider, J. Rousset

Lunch Break

13:30-15:00: Visit of Horiba Site (limited number/lunch included)

Thursday, 8 August 2019

9:30-11:10	**Plenary Session: Devices 4**	
Chair Person: Arno Smets	**Invited: Printed TFTs And Sensors for Flexible Electronics** R. A. Street	**Th.Dev4.O1**
	Invited: Three-Dimensional Integration of Silicon Nanowires For Ultra-High Density Stacked-Channel Field Effect Transistors X. Wu, H. Ma, H. Yin, L. Sun, J. Wang, L. Yu	**Th.Dev4.O2**
	Homojunction InGaZnO TFTs With Much Enhanced Performance and a Thorough Analysis C. Chen, K. Huang, C. Liu	**Th.Dev4.O3**
11:30-13:10	**Plenary Session: Materials 3**	
Chair Person: Safa Kasap	**Invited: Unknown knowns and known unknowns: The photo Seebeck effect in amorphous chalcogenide semiconductors** A. Gholizadeh, R. Curry	**Th.Mat3.O1**
	Laser-Induced Periodic Surface Structures (LIPSS) of Amorphous GST225 Thin Films Upon Femtosecond Laser Irradiation S. Kozyukhin, P. Lazarenko, M. Smayev, Y.Vorobyov, V. Glukhenkaya, Y. Sybina, V. Sigaev	**Th.Mat3.O2**
	Recent Progress On The Study Of Silver Photodiffusion Into Amorphous Chalcogenides Y. Sakaguchi, T. Hanashima, H. Aoki, A.A. Ahmed Simon, M. Mitkova	**Th.Mat3.O3**
	1/f Noise in Thin Sputtered Amorphous GeTe Films O. Güneş, O. Onumonu, A. Gholizadeh, R. Johanson, D. Hewak, C. Craig, S. Kasap, R. Curry	**Th.Mat3.O4**
13:10-14:30	**Lunch Break**	

ICANS 28

4 - 9 August 2019 Ecole Polytechnique, Palaiseau, France
Conference Detailed Programme

Thursday, 8 August 2019

14:30-15:50 *Parallel Sessions*

Devices 5

Chair Person: Xiaodong Pi

Thermally Robust Plasmonic And Cavity Resonances In Metal Nanoparticle Decorated Silicon Nanopillars For Strong Broadband Absorption — **Th.Dev5.O1**
G. Hou, Z. Wang, H. Ma, Y. Ji, L. Yu, J. Xu, K. Chen

Vertical Microcavity Containing A 3D Bromide Halide Perovskite Thin Film For Large Surface Polaritonic Applications — **Th.Dev5.O2**
P. Bouteyre, F. Lédée, H. Diab, G. Delport, G. Trippé-Allard, D. Garrot, H.S. Nguyen, C. Seassal, J.S. Lauret, F. Bretenaker, E. Deleporte

Nanomolded Buried Light-Scattering (BLiS) Back-Reflectors Using Dielectric Nanoparticles For Light Harvesting In Thin-Film Silicon Solar Cells — **Th.Dev5.O3**
D. Desta, R. Rizzoli, M. Bellettato, C. Summonte, R.N. Pereira, A. Nylandsted Larsen, P. Balling, S.K. Ram

Improving Photoelectrochemical Response of ZnO Nanowire Arrays by Coating with p-Type ZnO or ZnO-Resembling Metal–Organic Framework — **Th.Dev5.O4**
Y. Yang, Y. Cai, Q. Gao

Interfaces 2

Chair Person: Klaus Lips

State Passivation and Fermi Level Pinning in Solar Cells — **Th.Int2.O1**
J. Robertson, H. Lu

Junction Property in Solution-Processed Crystalline Silicon Heterojunction with Organic Thin-Layer (HOT) Solar Cells — **Th.Int2.O2**
A.T.M. Saiful Islam, E. Karim, Y. Nasuno, R. Ishikawa, H. Shirai

Laser Firing on SHJ-IBC Architecture for Polycrystalline Silicon Solar Cells on Glass — **Th.Int2.O3**
S. Garud, M. Bokalič, C. Trinh, D. Abou-Ras, B. Rech, M. Topič, D. Amkreutz

Determination of Effective Defects States by Varying the Thickness of Passivating (i)a-Si:H Layer in a-Si :H/c-Si Heterojunction Solar Cell Using Coplanar Conductance — **Th.Int2.O4**
A. Levtchenko, S. Le Gall, R. Brueggemann, M.E. Gueunier-Farret, J.P. Kleider

16:20-18:00 *Parallel Sessions*

Devices 6

Chair Person: Sergei Baranovskii

Invited: New Developments in a-Se Based Flat Panel X-ray Image Detectors for Medical Imaging — **Th.Dev6.O1**
S. Kasap, Z. Kabir, A. Reznik, W. Zhao, L. Laperriere, J. Rowlands

Bipolar Metal Oxide Thin Film Diodes — **Th.Dev6.O2**
Y. Jou Khong, K. Man Niang, S. Han, N. J. Coburn, A. J. Flewitt

Earth Abundant Film Zinc Phosphide Thin Films for Solar Cell Applications — **Th.Dev6.O3**
M. Zamani, E. Zsolt Stutz, S. Escobar Steinvall, R. Paul, J.B. Leran, A. Fontcuberta i Morral

Temperature Sensor Based on Phase Change in Chalcogenide Glasses; Material's Structure Dependence of Sensor's Performance — **Th.Dev6.O4**
A.A. Ahmed Simon, B. Badamchi, H. Subbaraman, Y. Sakaguchi, M. Mitkova

Growth 2

Chair Person: Friedhelm Finger

Invited: Processing Challenges in Advanced Photovoltaic and Photoelectrochemical Device concepts — **Th.Gr2.O1**
A. Smets

Inverted Cones in Crystalline Silicon through Etching after Low Temperature Epitaxial Breakdown — **Th.Gr2.O2**
H. Mohsin, D. Suchet, D. Daineka, W. Chen, P. Roca i Cabarrocas, E.V. Johnson

Process Optimization for the Sputter Deposition of Amorphous Zinc Oxynitride Thin Films — **Th.Gr2.O3**
A. Reinhardt, A. Welk, H. Von Wenckstern, M. Grundmann

In-situ Photoluminescence Study of the Crystalline Silicon Surface Passivation Under Ar-H2 Plasma Exposure — **Th.Gr2.O4**
M. Sreng, P. Roca i Cabarrocas, F. Silva

18:00-20:00 **Poster Awards and Student Awards**

with live music, food and drinks

Friday, 9 August 2019

9:30-11:10	**Plenary Session: Defects and Transport 2**	
Chair Person: Jean-Paul Kleider	**Invited: Effects of Strong Electric Field on Charge Transport in Amorphous Organic and Inorganic Semiconductors** A. Nenashev, A. Dvurechenskii, F. Gebhard, S. Baranovskii	**Fr.Def2.O1**
	Dangling-Bond Recombination in Amorphous Silicon Studied by Multifrequency Electrically Detected Magnetic Resonance J. Möser, H. Malissa, H. Popli, T. Hansika Tennahewa, W. Akhtar, J. Behrends, A. Schnegg, C. Boehme, K. Lips	**Fr.Def2.O2**
	Role of Excitons in the Charge-Generation Process in Amorphous Silicon J. Möser, J. Behrends, A. Schnegg, K. Lips	**Fr.Def2.O3**
	First Principles Calculations of Excitonic and Trionic Spin-Coupling in Amorphous Silicon U. Gerstmann, T. Biktagirov, W. Gero Schmidt	**Fr.Def2.O4**
11:30-12:50	**Plenary Session: Interfaces 3**	
Chair Person: Marie Gueunier-Farret	**Invited: Novel Oxide Nanolayers for Passivation of Crystalline Silicon Surfaces** J. Melskens, B. Macco, E. Kessels	**Fr.Int3.O1**
	Impact of PECVD Poly-Si on Tunnel Oxide for Passivating Contacts A. Desthieux, J. Posada, P.P. Grand, B. Bazer-Bachi, C. Broussillou, G. Goaer, E. Drahi, P. Roca i Cabarrocas	**Fr.Int3.O2**
	The Role of Illumination and Temperature on the Electronic Properties at the Front Surface Field Interface of Silicon Heterojunction Solar Cells L. Basset, J.P. Vilcot, W. Favre	**Fr.Int3.O3**
12:50 - 13:20	**Closing Remarks**	
	Lunch Break	**13:45-15:15: Visit of Horiba or IPVF Site (limited number/lunch included)**

ICANS 28

4 - 9 August 2019 Ecole Polytechnique, Palaiseau, France
Conference Detailed Programme

Monday, 5 August 2019

18:20-20:20 Poster Session

Materials

Effect of Sn ion implantation on the structural and optical properties of amorphous Ge2Sb2Te5 thin films — Mo.Mat.P1
P. Lazarenko, S. Kozyukhin, B. Eszter, A. Sitnikov, V. Glukhenkaya, F. Tamás, D. Seleznev, E. Kirilenko, A. Dedkova, A. Sherchenkov

Charge Exchange at Valence Alternation Pairs in Amorphous Selenium During Transient Optical Excitation and Photocurrent Decay — Mo.Mat.P2
J. Jacobs, S. Kasap, G. Belev, R. J. Curry

Optical properties of amorphous film composites TiO2<Ag>and C-TiO2<Ag> — Mo.Mat.P3
Y. Mukhametkarimov, O. Prikhodko, K. Dauitkhan, S. Mikhailova, U. Doseke, S. Maksimova, K. Tauassarov

Switching effect in thin Ge2Sb2Te5 films modified by silver impurity — Mo.Mat.P4
N. Almassov, S. Dyussembayev, A. Serikkanov, A. Kadirov, N. Guseinov, Z. Tolepov

Reorganization of Interface Porosity of Crystalline Silicon Grown by Low Temperature Plasma Epitaxy — Mo.Mat.P5
J. E. Hong, J. Ho Oh, K. H. Kim

Grain Agglomeration in Low Temperature (250℃) Wet Annealed In-Zn-O Films for use in Solution Processed Thin-film Transistors — Mo.Mat.P6
M. P. A. Jallorina, J. P. S. Bermundo, M. N. Fujii, Y. Ishikawa, Y. Uraoka

The Lateral Growth of GeSn Wires on Patterned Si Substrate — Mo.Mat.P7
Y. Zhao , X. Zhang, B. Cheng, S. Feng, Y. Wang, C. Li

Synthesis of Poly-Si Film by Al-Catalyzed Conversion of Silicon Oxide Films — Mo.Mat.P8
J. H. Yoon

Optical properties of nanoscale Ge2Sb2Te5 films modified with Ag and Bi — Mo.Mat.P9
O. Prikhodko, K. Turmanova, Z. Tolepov, A. Zhakypov, A. Sazonov, S. Maksimova, G. Ismailova, S. Mikhailova

High-conductivity P-doped hydrogenated amorphous silicon-germanium (a-SixGe1–x:H) thin-films for thermoelectric — Mo.Mat.P10
C. R. Ascencio-Hurtado, A. Torres, R. Ambrosio, M. Moreno, I. E. Zapata-De Santiago, A. Itzmóyotl

Characterization

Passivated Selective Contact Structure Characterization by C-AFM and KPFM of the Conduction by Pinholes — Mo.Ch.P1
C. Marchat, A. Morisset, J. Alvarez, R. Cabal, M .E. Gueunier-Farret, J. P. Kleider

Nanoscale Study of the Hole-selective Passivating Contacts for High-Efficiency Silicon Solar Cells Using C-AFM Tomography — Mo.Ch.P2
M. Hývl, G. Nogay, F. J. Haug, P. Loper, A. Ingenito, M. Ledinský, C. Ballif, A. Fejfar

Electroformed Silicon Nitride-Based Light Emitting Memory Device Investigated by SEM, EDX and Real-Time Optical Microscopy Analyses — Mo.Ch.P3
M. Anutgan, T. Anutgan, I. Atilgan

Investigation on Luminescent Quantum Efficiencies, Luminescent Stabilities and Ultrafast Radiative Recombination Processes in a-SiNxOy Systems — Mo.Ch.P4
P. Zhang, L. Zhang , F. Lv, R. Cheng, F. Liu, J. Zhang, Y. Li

Alternating Current Implementations of the Moving Photocarrier Grating Technique — Mo.Ch.P5
L. Koppio, F. Ventosinos, C. Longeaud, J. Schmidt

Photoluminescence Decay Mapping for the Inhomogeneities Imaging of Passivated Silicon — Mo.Ch.P6
D. Kudryashov, A. Gudovskikh, I. Morozov

Growth Kinetics of H2 Plasma Subjected a-Si:H Films: AFM Surface Morphology Studies — Mo.Ch.P7
V. Kanneboina, R. Madaka, P. Agarwal

The Interpretation of Infrared Spectra of Si-H and/or Si-H2 Groups on Si(111), Si(110) and Si(100) Surfaces — Mo.Ch.P8
J. Šebera, V. Sychrovský, J. Zemen, V. Jirásek, J. Holovský

Optical and Structural Properties of Amorphous Silicon-Carbon alloys thin films — Mo.Ch.P9
S. Nemmour, F. Kail, L. Chahed, P. Roca i Cabarrocas

a-SixGe1–x:H Thermoelectric Thin Film Schottky Diodes: Characterization and Applications — Mo.Ch.P10
I. E. Zapata-De Santiago, A. Torres, C. R. Ascencio-Hurtado, C. Reyes, M. T. Sanz, A. Itzmóyotl

Investigation of ZnO/BST Interface for Thin Film Transistor Applications — Mo.Ch.P11
K. Kandpal, N. Gupta, J. Singh, C. Shekhar

ICANS 28

4 - 9 August 2019 Ecole Polytechnique, Palaiseau, France
Conference Detailed Programme

Monday, 5 August 2019

18:20-20:20 Poster Session

Defects and Transport

Boron-hydrogen Complexes in Hydrogenated Crystalline Silicon Grown by Low Temperature PECVD — Mo.Def.P1
M. Chrostowski, J. Alvarez, A. Le Donne, S. Binetti, P. Roca i Cabarrocas

Complex Dopant-Bandgap-Electrical Conduction Relationship in High-Mobility W-Doped Indium Oxide Thin Films — Mo.Def.P2
I. G. Samatov, C. Summonte, A. Nylandsted Larsen, R. Rizzoli, P. Balling, S. K. Ram

Photoconductivity Kinetics of Indium Sulfofluoride Films — Mo.Def.P3
Y. Vygranenko, M. Fernandes, M. Vieira, G. Lavareda, C. Nunes de Carvalho

Defect Passivation in Perovskite Solar Cells Using Metal Sulfides — Mo.Def.P4
A. Nikolskaia, M. Vildanova, S. Kozlov, O. Karyagina, N. Tsvetkov, O. Shevaleevskiy, L. Larina

The C-V Hysteresis Direction Transition from Clockwise to Counterclockwise of the Nanocrystalline Silicon Floating Gate MOS Structure — Mo.Def.P5
J. You, Z. Ma, D. Tan, X. Yu, Z. Shen, L. Chen, Y. Sun, L. Xu, W. Li, K. Chen, D. Feng

On the Anomalous Electrical Properties of Amorphous Selenium Films — Mo.Def.P6
N. Qamhieh, S. Thomas, S. T. Mahmoud, G. J. Adriaenssens

Photothermal deflection spectroscopy of selenium films — Mo.Def.P7
T. Gotoh

Determination of Charge Centroid and Density of Holes Trapped in Metal-Oxide-Nitride-Oxide-Semiconductor-type Non-Volatile Memory Devices — Mo.Def.P8
K. Kobayashi

Devices

Stable Solution-Processed High Mobility p-type Halide Perovskites Thin Film Transistors — Mo.Dev.P1
S. Jana, E. Carlos, S. Panigrahi, R. Martins, E. Fortunato

Current Voltage Characteristics of Multi-Layer Amorphous Selenium-Alloy X-Ray Photoconductors and the Effect of X-Ray Irradiation — Mo.Dev.P2
J. Frey, K. P. C. Sadasivam, G. Belev, S. Kasap

Functionalization of Silicon Oxide Nanowires with Ag Nanoparticles for Surface Enhanced Raman Scattering — Mo.Dev.P3
S. Khmel, Y. Shukhov, S. Starinskiy, V. Volodin, A. Bulgakov

Study of Microcrystalline Silicon-Germanium for the Development of Thin Film Transistors — Mo.Dev.P4
A. Torres, M. Moreno, P. Rosales, M. Dominguez, A. Torres, A. Itzmoyotl, J. de la Hidalga, L. Hernandez

Bottom Gate ZnO TFT as a Dielectric Modulated Label Free Biosensor — Mo.Dev.P5
R. Goswami, K. Kandpal

Novel Surface Treatment Technology on Back Channel of Amorphous Quasi-two-dimensional Oxide Semiconductor Transistors — Mo.Dev.P6
S. H. Jung, H. K. Cho

Reduction of Residual Stress in Polymorphous Silicon Germanium Films and their Evaluation in Microbolometers — Mo.Dev.P7
R. Jimenez, M. Moreno, A. Torres, J. De La Hidalga, A. Heredia, R. Ambrosio

Modeling

PECVD Epitaxy for Low Temperature Processed c-Si solar cells: Modelling and Experiments — Mo.Mod.P1
P. Chatterjee, M. Chrostowski, P. Roca i Cabarrocas

Fluid Modeling of Electrically Asymmetric Capacitively Coupled Silane/Hydrogen Plasma Discharges — Mo.Mod.P2
T. Zhang , J. M. Orlach, V. Giovangigli, E. V. Johnson, P. Roca i Cabarrocas, T. Novikova

Ultra-Thin Perovskite/c-Silicon Four-Terminal Tandems: Interlayer and Intermediate Contacts Optimization — Mo.Mod.P3
M. Chapa, M. Alexandre, S. Haque, M. J. Mendes, H. Águas, E. Fortunato, R. Martins

Optimal Design of Luminescent Down-Shifting for High Efficiency and Stable Perovskite Solar Cells — Mo.Mod.P4
M. Alexandre, M. Chapa, S. Haque, M. J. Mendes, H. Águas, E. Fortunato, R. Martins

The Phase Diagram of High-Temperature Superconductors in Terms of the Model of Negative-U Centers — Mo.Mod.P5
E. Apushkinskiy, B. Popova, K. Tsendin , V. Saveliev, V. Sobolevskiy, L. Krukovskya

Computer Simulation Study About The Ddependence of Amorphous Silicon Photonic Waveguides Efficiency on the Material Defect Density — Mo.Mod.P6
A. Fantoni, J. Costa, P. Lourenço, M. Vieira

ICANS 28

4 - 9 August 2019 Ecole Polytechnique, Palaiseau, France
Conference Detailed Programme

Tuesday, 6 August 2019

18:20-20:20 Poster Session

Materials

Upscale of Perovskite Solar Cells: Impacts of Drying Processes on Growth Mechanisms and Layer Properties of the Absorber Layer — Tu.Mat.P1
S. Bernard, S. Jutteau, F. Sauvage, J. Rousset

Influence of Perovskites Thin Films Morphology on the Minority Carriers' Diffusion Length — Tu.Mat.P2
S. Mansurova, N. Korneev, M. Cuatecatl, I. Cosme, A. Seidenspinner, K. Meerholz

Investigation of Photoconductive Properties of Hybrid Organic-Inorganic PVK Semiconductors by Running Grating Technique — Tu.Mat.P3
M. Cuatecatl, N. Korneev, S. Mansurova, I. Cosme, A. Seidenspinner, K. Meerholz

CsPbBr Nanocystal Perovskites as X-Ray Sensitisors — Tu.Mat.P4
O. Woolland, C. Smith, C. A. Muryn, R. J. Curry

Halide Perovskite Thin Films Characterisation by Force Microscopy Techniques — Tu.Mat.P5
A. Bojar, C. Marchat, J. Alvarez, P. Schulz, J. P. Kleider

Perovskites vs. Amorphous Selenium for X-Ray Detection — Tu.Mat.P6
Y. Li, C. Koughia, E. Adeagbo, R. D. Pettipas, A. Mishchenko, S. Arnab, S. Kasap, T. Kelly

Optical and structural optimization of large grain halide perovskite thin film deposition — Tu.Mat.P7
L. Landová, Z. Hájková, L. Ondič, P. Bradshaw, N. Neykova, J. Holovský, A. Fejfar, M. Ledinský

Surface Passivation of Zinc Phosphide Thin Films and Nanowires — Tu.Mat.P8
E. Stutz, M. Koçak, N. Humblot, R. Paul, J. B. Leran, M. Zamani, S. Escobar Steinvall, A. Fontcuberta i Morral

A Study of the Effect of Morphology on the Optical and Electrical Properties of TiO2 Nanotubes for Gas Sensing — Tu.Mat.P9
A. Arenas-Hernandez, C. Zúñiga-Islas, J. C. Mendoza-Cervantes

Influence of Deposition Time on Morphology and Properties of Indium-Catalyzed Silicon Oxide Nanowires Prepared by Gas-Jet Plasma-Assisted Method — Tu.Mat.P10
A. Zamchiy, E. Baranov, E. Maximovskiy

Influence of Time, Pressure and Power on Self-Assembly In-Rich Nanostructures Grown by Hydrogen Plasma — Tu.Mat.P11
S. Vázquez y Parraguirre, I. Cosme, A. Olivares Vargas, A. Itzmoyotl Toxqui

Optical properties of copper sulfide dendrites — Tu.Mat.P12
T. Gotoh

Control of carrier density in InS films by heat treatment — Tu.Mat.P13
T. Gotoh

Tuning Material Properties of ZnON by Mg2+ Cationic Substitution — Tu.Mat.P14
A. Welk, A. Reinhardt, O. Herrfurth, H. Von Wenckstern, M. Grundmann

Solution-Processed Materials for Flexible Electronics — Tu.Mat.P15
M. A. Dominguez, J. L. Sosa-Sanchez, S. Alcántara, J. L. Pau

Structure Dependence Of InOx And ITO Thin Films Deposited By RF-PERTE On Deposition Temperature — Tu.Mat.P16
A. Amaral, G. Lavareda, C. Nunes de Carvalho, V. André, Y. Vygranenko, M. Fernandes, P. Brogueira

Dielectric Relaxation in Amorphous Molybdenum Disulfide Thin Films Produced by RF Magnetron Sputtering — Tu.Mat.P17
A. A. Kononov, R. A. Castro, D. D. Glavnaya, N. I. Anisimova, Y. Saito, P. Fons, J. Tominaga, A. V. Kolobov

Ultra-Broadband All-Optical Switch via Plasmon-Enhanced Cross-Phase Modulation (SXPM) in Antimonene Quantum Dots — Tu.Mat.P18
G. Zhao, C. Zhang, X. Lv, X. Hu, J. Xu

Interfaces

Interface Design for Three Terminal Selective Band Offset Tandems — Tu.Int.P1
J.P. Connolly, Z. Djebbour, J. P. Kleider, C. Leon, S. Le Gall, M. E. Gueunier-Farret

Understanding Recombination and Current Transport at a-Si/c-Si Heterojunctions on the Nanoscale using 2D-simulation — Tu.Int.P2
C. T. Trinh, L. Korte, K. Lips

Can the Hydrogen Content at the c-Si/a-Si:H Affect the Interface Properties of Silicon Heterojunction Solar Cell? — Tu.Int.P3
S. Pakhale, N. Wadibhasme, R. Dusane

Study of PEDOT:PSS/Amorphous Silicon Hybrid Frontal Interface for Solar Cells Applications — Tu.Int.P4
A. Olivares Vargas, I. Cosme, S. Mansurova, J. C. Carrillo, A. Itzmoyotl

Molecular Hydrogen and Blistering in Hydrogenated Crystalline Silicon Epitaxial Thin Films — Tu.Int.P5
H.Y. Jun, A. Foti, M. Chrostowski, R. Ossikovski, P. Roca i Cabarrocas

Electrical Study of Schottky Barrier Heights Between Silver Plane Contact and Amorphous Silicon Layer — Tu.Int.P6
A. Vetushka, M. Müller, M. Hladík, M. Hývl, M. Ledinský, A. Fejfar, J. Macháček, T. Baše

Si Surface Passivation by using Triode-Type Plasma-Enhanced CVD with Thermally-Energized Film-Precursors — Tu.Int.P7
C. Niikura, Y. Shiratori, S. Miyajima

ICANS 28

4 - 9 August 2019 Ecole Polytechnique, Palaiseau, France
Conference Detailed Programme

Tuesday, 6 August 2019

18:20-20:20 Poster Session

Growth

Transmission Electron Microscope Analysis of PECVD Grown Electroformed Silicon Nitride-Based Light Emitting Diode — **Tu.Gr.P1**
T. Anutgan, M. Anutgan, I. Atilgan

The Nanoparticles Integrated into Thin Layers of Hydrogenated Amorphous Silicon Carbide — **Tu.Gr.P2**
J. Stuchlik, T. H. Stuchlikova, Z. Remes, V. A. Volodin

Thermal Stability Analysis of Hydrogenated Amorphous Silicon Precursor Layers for Liquid Phase Crystallized Silicon — **Tu.Gr.P3**
H. Ali, S. Haas, M. Nuys, F. Finger, W. Beyer, U. Rau

AZO/PEDOT:PSS/a-Si:H Polymer Frontal Interface Deposited on Flexible Substrates for a-Si:H Photovoltaic Applications — **Tu.Gr.P4**
C. A. Ospina, I. Cosme, S. Mansurova, A. Kosarev, A. J. Olivares, H. E. Martinez

R.F. plasma prepared Si nanocrystals — **Tu.Gr.P5**
J. Stuchlík, M. Muller, P. Galář, J. Kočka

(103)-Oriented and (002)-Oriented Nanostructures in AZO thin films Deposited by RF magnetron Sputtering — **Tu.Gr.P6**
S. Vázquez y Parraguirre, I. Cosme, A. Olivares Vargas, A. Itzmoyotl Toxqui

Ultra-low Temperature Guided Growth of Highly Conductive Crystal Silicon Nanowires Directly upon Polyimide Film — **Tu.Gr.P7**
H. Ma, Y. Zhao, L. Yu

Effect of Substrate and Hydrogen Plasma Treatment Temperature on Silicon Nanowires Growth using Tin and Indium as Catalyst — **Tu.Gr.P8**
S. Djoumi, F. Kail, L. Chahed, P. Roca i Cabarrocas

Influence of laser fluence on Photoluminescence from nano structured ZnO Fabricated by Pulsed Laser Ablation in Water — **Tu.Gr.P9**
P. P. Dey, G. P. Bharti, A. Khare

Low Temperature Growth of GeSn Nanowires with 30 at.% via a Plasma-Assisted In-Plane Solid-Liquid-Solid Mechanism — **Tu.Gr.P10**
E. Azrak, W. Chen, S. Moldovan, S. Duguay, P. Pareige, P. Roca i Cabarrocas

Peculiarities of Doped GaP Layers Growth by Plasma Enhanced Atomic Layer Deposition — **Tu.Gr.P11**
A. S. Gudovskikh, A. I. Baranov, I. A. Morozov, A. V. Uvarov, D. A. Kudryashov, J. P. Kleider

Inter-Electrode Distance Dependent Chemical Dynamics in ICP-PECVD of a-Si:H — **Tu.Gr.P12**
P. Karar, G. Kumar, D. S. Patil, R. O. Dusane

Study of Selective PECVD of Silicon on Silicon Nitride and Aluminum Oxide — **Tu.Gr.P13**
G. Akiki, P. Bulkin, D. Daineka, D. Suchet, E. V. Johnson

Electrochemical and morphological study of films formed on stainless steel in alkaline medium — **Tu.Gr.P14**
H. Ramdane, N. E Benaioun, N.E Hakiki, M. Heireche, N. Moulayat, J. L. Bubendorff

Devices

Fabrication and Investigation of Thin Film Silicon Tandem Junction Solar Cells Towards Performance Improvement — **Tu.Dev.P1**
P. Calta, V. Vavruňková, J. Navrátil, P. Šutta, M. Netrvalová, R. Medlín

Tapping of the Infrared Light to Improve the Thin-Film-Solar-Cell Performance using Spectral-Upconverting Stickers — **Tu.Dev.P2**
P. Balling, D. Desta, R. Rizzoli, C. Summonte, A. Nylandsted Larsen, Sanjay K. Ram

Shape-Memory-Polymer-based Nano-Wrinkling for Photon Harvesting in Ultra-Thin Silicon Solar Cells — **Tu.Dev.P3**
R. Rizzoli, B. Falcao, D. Desta, E. Eriksen, H. Lakhotiya, M. Bellettato, B. R. Jeppesen, P. B. Jensen, C. Summonte, R. Pereira, A. Nylandsted Larsen, P. Balling, S. K. Ram

Investigation of Thermal Annealing Effects in Low Temperature Amorphous Silicon Films and Solar Cells — **Tu.Dev.P4**
K. Wilken, M. Güneş, V. Smirnov, F. Finger

Increment of the Short Circuit Current on Crystalline Silicon Solar Cells due to the Down Conversion Effect of Amorphous Silicon Carbide (a-SiC:H) — **Tu.Dev.P5**
M. Moreno, J. Martínez, P. Rosales, R. Ambrosio, I. Vivaldo, A. Torres, J. de la Hidalga, A. Itzmoyotl

Front Contact Light Trapping Structures by Design for Maximum Efficiency Enhancement of Thin Film Solar Cells — **Tu.Dev.P6**
H. Águas, M. J. Mendes, O. S. Sobrado, S. Haque, M. Alexandre, M. Chapa, T. Mateus, E. Fortunato, R. Martins

Reversible degradation of Perovskite Solar Cells Induced by Carrier Injection — **Tu.Dev.P7**
C. Yamamoto, T. Kaneko, M. Isomura, T. Katsumata, K. Tomita

Solution-Processed Monolithic Perovskite/Silicon Tandem Solar Cells — **Tu.Dev.P8**
Y. Nasuno, Y. Wasai, A.T.M. Saiful Islam, E. Karim, R. Ishikawa, H. Shirai

Fabrication of Kx{[CH(NH2)2]1-yCsy}1-xPbI3 Perovskite Thin Films Using a Simple One-Step Method for Hysteresis Less Planar-Structure Solar Cells — **Tu.Dev.P9**
R. Ishikawa, K. Ueno, H. Shirai

Nanostructured ZrO2- and HfO2-based Thin Films for Perovskite Solar Cells — **Tu.Dev.P10**
M. Vildanova, A. Nikolskaia, S. Kozlov, L. Larina, O. Shevaleevskiy