## International Photovoltaic Science and Engineering Conference



TOP > PVSEC-18 (2009) / Kolkata, India PVSEC-18 (2009) / Kolkata, India	
	Message from General Chairperson
	A.K.Barua
	International PVSEC-18 Committees
	▲Back to TOP
Area 1 :	Crystatline Silicon Solar Cells and Technologies
1-1	Sergio Pizzini 1AUniversity of Milano-Bicocca, Milano(Italy) and NedSilicon Spa, Osimo(Ancona)Italy
	Road to Cost Effective Silicon PV
1-2	Ajeet Rohatgi <sup>1,2</sup> , Alan Ristow <sup>3,4</sup> , Arnab Das <sup>3</sup> , Saptharishi Ramanathan <sup>3</sup> 1Founder and CTO, Suniva Inc.,USA, 2Regent's Professor, Georgia Institute of Technology, USA, 3University Center of Excellence for Photovoltaics, Georgia Institute of Technology, USA, 4Photovoltech NV, Tienen, Belgium
	ANALYSIS OF PERFORMANCE LIMITING MATERIAL PROPERTIES OF MULTICRYSTALLINE SILICON
1-3	W. Warta, M. C. Schubert, H. Habenicht, M. Kasemann, W. Kwapil, P. Gundel, J. Schön Fraunhofer Institute for Solar Energy Systems, Germany
	DEFECT GENERATION DURING SOLIDIFICATION OF MULTICRYSTALLINE SILICON
1-4	Gaute Stokkan <sup>1</sup> , Birgit Ryningen <sup>2</sup> , Otto Lohne <sup>1</sup> , Eivind Øvrelid <sup>3</sup> , Marisa Di Sabatino <sup>3</sup> , Espen Olsen <sup>4</sup> and Arve Holt <sup>5</sup> 1Department of Materials Science and Engineering, NORWAY, 2Umoe Solar AS, Fornebuveien, NORWAY, 3SINTEF Materials and Chemistry, Dept. of Metallurgy, NORWAY, 4Department of Mathematical Sciences and Technology, NORWAY, 5Department of Solar Energy, Institute for Energy Technology, NORWAY
	HIGH EFFICIENCY HETEROJUNCTION SOLAR CELLS: FUNDAMENTAL AND PRACTICAL ASPECTS
1-5	Christophe Ballif, Sara Olibet, Stefaan De Wolf, Jérôme Damon-Lacoste, Luc Fesquet Institute of Microtechnology, Ecole Polytechnique Fédérale de Lausanne (EPFL), Neuchâtel
	INSIGHTS GAINED FROM COMPUTER MODELING OF HETEROJUNCTION WITH INSTRINSIC THIN LAYERS "HIT" SOLAR CELLS
1-6	A. Datta <sup>1</sup> , M. Rahmouni <sup>2</sup> , M. Nath <sup>1</sup> , P. Roca i Cabarrocas <sup>3</sup> and P. Chatterjee <sup>1</sup> 1Energy Research Unit, Indian Association for the Cultivation of Science, India, 2Laboratoire de Physique des Plasmas et Matériaux Conducteurs et leurs Applications, Algeria, 3Laboratoire de Physique des Interfaces et des Couches Minces, CNRS, Ecole Polytechnique, France.
	SANYO'S CHALLENGES FOR HIGH COST-PERFORMANCE THIN-FILM SILICON SOLAR CELLS
1-7	Makoto TANAKA Advanced Photovoltaics Development Center, Sanyo Electric Co., Ltd.
	Silicon quantum dots for solar cell applications
1-8	Chetan Singh Solanki Department of Energy Science & Engineering, IIT Bombay
	BORO DIFFUSIO EFFECTS O -TYPE mc-Si IGOTS GROW BY TWO DIFFERET METHODS
1-9	A. Uzum <sup>1</sup> , M. Dhamrin <sup>1</sup> , A. Ben Jaballah <sup>1,2</sup> , P. Supajariyawichai <sup>1</sup> , N. Ban <sup>1</sup> , L. G. Wei <sup>1</sup> , T. Saitoh <sup>1</sup> , K. Kamisako <sup>1</sup> , I. Yamaga <sup>3</sup> 1Tokyo Univ. of Agr. & Tech., Japan,, 2Research and Technology Centre of Energy, Laboratory of Photovoltaic and Semiconductors, Tunisia, 3Dai-ichi Kiden Corp., Japan

INFLUENCE OF THE AMORPHOUS/ CRYSTALLINE BAND DISCONTINUITY ON HOLE TRANSPORT IN P-a-Si:H/ N-c-Si FRONT HETEROJUNCTION SOLAR CELLS 1-10

	A. Datta <sup>1</sup> , M. Rahmouni <sup>2</sup> , P. Roca i Cabarrocas <sup>3</sup> , M. Labrune <sup>3</sup> and P. Chatterjee <sup>1</sup> 1Energy Research Unit, Indian Association for the Cultivation of Science, India, 2Laboratoire de Physique des Plasmas et Matériaux Conducteurs et leurs Applications, Algeria, 3Laboratoire de Physique des Interfaces et des Couches Minces, CNRS, Ecole Polytechnique, France
1-11	INFLUENCE OF REAR-SIDE PASSIVATION ON PERFORMANCE OF THE MULTICRYSTALLINE BLACK SILICON SOLAR CELL
	Ching-Hsi Lin <sup>1</sup> , Dimitre Z. Dimitrov <sup>1</sup> , Chen-Hsun Du <sup>1,2</sup> and Chung-Wen Lan <sup>1</sup> 11TRI/Photovoltaics Technology Center, Taiwan R.O.C., 2National Tsing Hua University/Institute of NanoEngineering and MicroSystems, Taiwan R.O.C.
	DIAGNOSTICS OF ELECTRICAL LOSSES IN Si SOLAR CELLS USING CORESCAN
1-12	Debajyoti Sarangi, Bharath Reddy, Kaustuv Chakrabarty, Amitabh Verma Moserbaer Photovoltaic Ltd., India
1.12	OVERVIEW ON THE USE OF LASER PROCESSING TECHNIQUES FOR HIGH-EFFICIENCY SILICON WAFER SOLAR CELLS
1-13	D.V. Tran and A.G. Aberle Solar Energy Research Institute of Singapore (SERIS), Singapore
	CHARACTERIZATION OF P-μc-SiO/N-c-Si HETEROJUNCTION BY ADMITTANCE SPECTROSCOPY: EXPERIMENT AND SIMULATION
1-14	Fangdan Jiang <sup>1</sup> , Jaran Sritharathikhun <sup>1</sup> , Shinsuke Miyajima <sup>1</sup> , Akira Yamada <sup>1,2</sup> and Makoto Konagai <sup>1,2</sup> 1Department of Physical Electronics, 2Photovoltaics Research Center Tokyo Institute of Technology, Japan
	EFFECT OF INTENSITY ON DIODE PARAMETERS OF A SILICON SOLAR CELL
1-15	Firoz Khan <sup>1,2</sup> , S.N.Singh <sup>1</sup> and M.Husain <sup>2</sup> 1Electronic Materials Division, National Physical Laboratory, India, 2Department of Physics, Jamia Millia Islamia, India
	IMPACT OF TRANSITION METALS IN FEEDSTOCK ON MULTICRYSTALLINE SILICON SOLAR CELL PROPERTIES
1-16	G. Coletti <sup>1</sup> , P. Bronsveld <sup>1</sup> , R. Kvande <sup>2</sup> , L.J. Geerligs <sup>1</sup> , L. Arnberg <sup>2</sup> , H. Habenicht <sup>3</sup> , W. Warta <sup>3</sup> , C. Knopf <sup>4</sup> 1ECN Solar Energy, the Netherlands, 2Norwegian University of Science and Technology, Norway, 3Fraunhofer Institute for Solar Energy Systems (ISE), Germany, 4Deutsche Solar AG, Geschäftsbereich Solar Material, Germany
1 17	HIGH THROUGHPUT AND HIGH EFFICIENCY INLINE INDUSTRIAL MANUFACTURING OF CRYSTALLINE SILICON SOLAR CELLS
1-17	Goutam Samanta, Sujit Pillai and Vijay Kumar Moser Baer PhotoVoltaic, India
	HIGH QUALITY i-a-SiO:H BUFFER LAYER FOR HIGH EFFICIENCY p-uc-SiO:H/n-c-Si HETEROJUNCTION SOLAR CELLS
1-18	Jaran Sritharathikhun <sup>1</sup> , Shinsuke Miyajima <sup>1</sup> , Akira Yamada <sup>1,2</sup> andMakoto Konagai <sup>1,2</sup> 1Department of Physical Electronics, 2Photovoltaics Research Center Tokyo Institute of Technology, Japan
1.10	SILICON HETEROJUNCTION SOLAR CELLS WITH A HYDROGENATED AMORPHOUS ALUMINUM OXIDE REAR SURFACE PASSIVATION LAYER
1-19	Junpei Irikawa <sup>1</sup> , Shinsuke Miyajima <sup>1</sup> , Akira Yamada <sup>1,2</sup> , Makoto Konagai <sup>1,2</sup> 1Department of Physical Electronics, 2Photovoltaic Research Center Tokyo Institute of Technology, Japan
1-20	EFFECT OF SINx:H PASSIVATION FILMS DEPOSITED BY RF-RPECVD TECHNIQUE ON CRYSTALLINE SILICONWAFERS QUALITY
1 20	Kazuya Furuichi, Shuhei Maeda, Yuji Suzuki, Marwan Dhamrin, Masanori Suda and Koichi Kamisako Tokyo University of Agriculture and Technology, Japan
	DRY ETCHING USING HYDROGEN RADICALS FOR SOLAR CELLS APPLICATION
1-21	Keisuke Ogawa, Fumiya Kadono, Marwan Dhamrin, Tadashi Saitoh and Koichi Kamisako Department of Electrical and Electronic Engineering Tokyo University of Agriculture and Technology, Japan
1.22	EFFECT OF SPIN COATING SPEED AND GAS AMBIENT ON THE EMITTER SHEET RESISTANCE OF mc-Si WAFERS FOR
1-22	N. Ban <sup>1</sup> , L.W. Goh <sup>1</sup> , P. Supajariyawichai <sup>1</sup> , A. Uzum <sup>1</sup> , A. B. Jaballah <sup>1,2</sup> , M. Dhamrin <sup>1</sup> , T.Saitoh <sup>1</sup> and K. Kamisako <sup>1</sup> 1Tokyo University of Agriculture and Techinology, Japan, 2Research and Technology Centre of Energy, Tunisia

1-23	SCREEN-PRINTING THE SELECTIVE EMITTER ON THE P-TYPE MONOCRYSTALLINE SILICON SOLAR CELLS WITH BORON BACK SURFACE FIELD
	Le Yang <sup>1</sup> , Qinghao Ye <sup>1</sup> , Gaojie Zhang <sup>2</sup> , Zhu Chen <sup>2</sup> , Jingxiao Wang <sup>2</sup> , Xusheng Wang <sup>2</sup> 1Solar Energy Institute of Shanghai Jiaotong University, China 2Jiansu Linyang Solarfun Co., Ltd, China
1-24	FORMATION OF FRONT AND REAR CONTACTS FOR MULTI-CRYSTALLINE SILICON SOLAR CELLS BY RAPID THERMAL PROCESSING
	Ling Wei Goh, Naoki Ban, Abdullah Uzum, Piyasak Supajariyawichai, Marwan Dhamrin, Koichi Kamisako Department of Electrical and Electronic Engineering Tokyo University of Agriculture and Technology, Japan
	INFLUENCE OF WAFER QUALITY ON CELL PERFORMANCE
1-25	L. Carnel, P.C. Hjemås, T. Lu, J. Nyhus, K. Helland and Ø. Gjerstad REC Scanwafer R&D department, Norway
	IMPROVED PROCESS FOR THE FORMATION OF AL-ALLOYED EMITTER IN N-TYPE SOLAR CELLS
1-26	Ly Mai, Adeline Sugianto, Alison M. Wenham, Stuart R. Wenham ARC Photovoltaics Centre of Excellence The University of New South Wales, Australia
	ALUMINIUM-ALLOYED REAR JUNCTION LASER DOPED CONTACT SOLAR CELLS ON CZ N-TYPE SILICON
1-27	Ly Mai, Budi S. Tjahjono, Adeline Sugianto, Matt B.Edwards, Ziv Hameiri, Stuart R. Wenham ARC Photovoltaics Centre of Excellence The University of New South Wales, Australia
	EFFICIENT PASSIVATION OF SILICON SURFACES USING ATOMIC LAYER DEPOSITION OF DIELECTRICS
1-28	Jun Wang <sup>1</sup> , Mariyappan Shanmugam <sup>1</sup> , Mahdi Farrokh-Baroughi <sup>1</sup> , Roohollah Samadzadeh Tarighat <sup>2</sup> and Siva Sivoththaman <sup>2</sup> 1Department of Electrical Engineering and Computer Science South Dakota State University, USA, 2Electrical and Computer Engineering Department, University of Waterloo, Canada
	SOL-GEL PROCESSED SILICA GEL FOR SILICON SURFACE PASSIVATION AT ROOM TEMPERATURE
1-29	Mariyappan Shanmugam <sup>1</sup> , Jun Wang <sup>1</sup> , Mahdi Farrokh-Baroughi <sup>1</sup> , Roohollah Samadzadeh-Tarighat <sup>2</sup> , and Siva Sivoththaman <sup>2</sup> 1Department of Electrical Engineering and Computer Science, South Dakota State University, USA, 2Department of Electrical and Computer Engineering, Canada
	THERMAL STABILITY OF PECVD a-Si:H SINGLE AND PECVD a-Si:H + PECVD a-SiOx:H DOUBLE LAYERS FOR SILICON SOLAR CELL REAR SIDE PASSIVATION
1-30	M. Hofmann <sup>1</sup> , C. Schmidt <sup>1</sup> , B. Raabe <sup>2</sup> , J. Rentsch <sup>1</sup> , R. Preu <sup>1</sup> IFraunhofer Institute for Solar Energy Systems, Germany, 2University of Konstanz, Fachbereich Physik, Photovoltaik-Abteilung, Germany
1 21	SPATIALLY RESOLVED DETERMINATION OF THE DARK SATURATION CURRENT BY ELECTROLUMINESCENCE IMAGING
1-31	Markus Glatthaar, Johannes Giesecke, Martin Kasemann, Jonas Haunschild, Manuel The, Wilhem Warta, Stefan Rein. Fraunhofer ISE, Heidenhofstr, Germany
	HIGH CARRIER LIFETIMES IN SB-DOPED DIRECTIONALLY SOLIDIFIED MULTICRYSTALLINE SILICON INGOTS
1-32	Marwan Dhamrin <sup>1</sup> , Tadashi Saitoh <sup>1</sup> , Isao Yamaga <sup>2</sup> and Koichi Kamisako <sup>1</sup> 1Tokyo University of Agriculture and Technology, Japan, 2Dai-ichi-Kiden Corp., Japan
1.22	OPTIMIZATION OF INTERDIGITATION PARAMETERS FOR BACK-CONTACT SILICON HETEROJUNCTION SOLAR CELLS
1-33	
	Omkar Jani, Ujjwal Das, Stanislau Herasimenka, Meijun Lu, Dong Xu, Stuart Bowden, Steve Hegedus, and Robert Birmkire Institute of Energy Conversion, University of Delaware, USA
	Omkar Jani, Ujjwal Das, Stanislau Herasimenka, Meijun Lu, Dong Xu, Stuart Bowden, Steve Hegedus, and Robert Birmkire         Institute of Energy Conversion, University of Delaware, USA         INTERFACE ISSUES IN HIT SOLAR CELLS FABRICATED BY HWCVD TECHNIQUE
1-34	Omkar Jani, Ujjwal Das, Stanislau Herasimenka, Meijun Lu, Dong Xu, Stuart Bowden, Steve Hegedus, and Robert Birmkire         Institute of Energy Conversion, University of Delaware, USA         INTERFACE ISSUES IN HIT SOLAR CELLS FABRICATED BY HWCVD TECHNIQUE         Shahaji More <sup>1</sup> , Palak Ambwani <sup>1</sup> , Rahul Tapariya <sup>1</sup> , Alka Kumbhar <sup>1</sup> , Pravin Narvanker <sup>2</sup> , R.O. Dusane <sup>1</sup> IIndian Institute of Technology, India, 2Applied Materials, USA
1-34	Omkar Jani, Ujjwal Das, Stanislau Herasimenka, Meijun Lu, Dong Xu, Stuart Bowden, Steve Hegedus, and Robert Birmkire         Institute of Energy Conversion, University of Delaware, USA         INTERFACE ISSUES IN HIT SOLAR CELLS FABRICATED BY HWCVD TECHNIQUE         Shahaji More <sup>1</sup> , Palak Ambwani <sup>1</sup> , Rahul Tapariya <sup>1</sup> , Alka Kumbhar <sup>1</sup> , Pravin Narvanker <sup>2</sup> , R.O. Dusane <sup>1</sup> Indian Institute of Technology, India, 2Applied Materials, USA         EFFECT OF P-GETTERING ON ELECTRICAL PROPERTIES AND CARRIER LIFETIME IMPROVEMENT OF LARGE         N-TYPE MULTICRYSTALLINE SILICON INGOT

1-50	REGULATED PRE-TREATMENT OF SURFACE TEXTURE FOR LARGE AREA INDUSTRIAL SINGLE CRYSTALLINE SILICON SOLAR CELL USING NAOH-NAOCL
	P. K. Basu <sup>1</sup> , Hrishikesh D <sup>2,3</sup> , N. Udayakumar <sup>4</sup> and D.K.Thakur <sup>1</sup> 1Department of Electronics and Communication Engineering, 2Department of Applied Sciences and Humanities Lingaya's Institute of Management and Technology, India, 3Center for Energy Studies, Indian Institute of Technology-Delhi, India, 4Udhaya Energy Photovoltaics Pvt. Ltd, India
1-37	EXCELLENT ANTIREFLECTION PROPERTIES OF SILICON NANOWIRE ARRAYS FOR SOLAR CELL APPLICATIONS
	Sanjay K. Srivastava <sup>1</sup> , Dinesh Kumar <sup>1</sup> , P.K. Singh <sup>1</sup> , Vikash Agarwal <sup>1</sup> , K.N. Sood <sup>1</sup> , M. Kar <sup>1</sup> , M. Husain <sup>2</sup> , and Vikram Kumar <sup>1</sup> 1National Physical Laboratory, India, 2Jamia Millia Islamia, India
	ELECTROLESS NICKEL PLATING – A COMMERCIAL SOLUTION
1-38	Shashi Srivastava <sup>1</sup> , Pinaki Ranjan <sup>2</sup> , Subrata Dutta <sup>3</sup> and Bharat Reddy <sup>4</sup> 1Corporate R&D, 2Corporate R&D, 3Corporate R&D, 4R&D MBPV Moser Baer India Limited, India
	PROPERTIES OF HETEROJUNCTION CRYSTALLINE SILICON SOLAR CELLS WITH A HYDROGENATED NANOCRYSTALLINE CUBIC SILICON CARBIDE WINDOW LAYER
1-39	Shinsuke Miyajima <sup>1</sup> , Akira Yamada <sup>1,2</sup> , Makoto Konagai <sup>1,2</sup> 1Department of Physical Electronics, 2Photovoltaic Research Center Tokyo Institute of Technology, Japan
	INDUSTRIAL PROCESS FOR N-TYPE MULTICRYSTALLINE SILICON SOLAR CELLS
1-40	Sukhvinder Singh <sup>1,2</sup> , Frederic Dross <sup>1</sup> , Emmanuel van Kerschaver <sup>1</sup> , Guy Beaucarne <sup>1</sup> and Robert Mertens <sup>1,2</sup> 11MEC vzw, Belgium, 2KU Leuven / ESAT, Belgium
	OPTIMIZATION OF TCO LAYER FOR APPLICATION IN a-Si:H/c-Si HETEROJUNCTION SOLAR CELL
1-41	Sung Ju Tark <sup>1</sup> , Min Gu Kang <sup>1</sup> , Joon Sung Lee <sup>1</sup> , Yong Hyun Kim <sup>2</sup> , Won Mok Kim <sup>2</sup> , Jeong Chul Lee <sup>3</sup> , Heejin Lim <sup>1</sup> and Donghwan
	Kim <sup>4</sup> 1Department of Materials Science and Engineering, Korea University, Korea, 2Korea Institute of Science and Technology, Division of Materials, Thin Film Materials Research Center, Korea, 3Photovoltaic Research Group, Korea Institute of Energy Research, Korea
	COMBINATION OF SUVOVED FILM WITH HYDROGEN PLASMA TREATMENT FOR REAR SIDE PASSIVATION LAYER
1-42	OF CAST POLY c-Si SOLAR CELLS
1-42	OF CAST POLY c-Si SOLAR CELLS Suttirat Rattanapan <sup>1</sup> , Hiroshi Yamamoto <sup>1</sup> , Shinsuke Miyajima <sup>1</sup> , Takehiko Sato <sup>3</sup> , Makoto Konagai <sup>1,2</sup> 1Department of Physical Electronics, 2Photovoltaics Research Center, Tokyo Tech., Japan, 3Advanced Technology R&D Center, Mitsubishi Electric Corporation, Japan
1-42	OF CAST POLY c-Si SOLAR CELLS         Suttirat Rattanapan <sup>1</sup> , Hiroshi Yamamoto <sup>1</sup> , Shinsuke Miyajima <sup>1</sup> , Takehiko Sato <sup>3</sup> , Makoto Konagai <sup>1,2</sup> IDepartment of Physical Electronics, 2Photovoltaics Research Center, Tokyo Tech., Japan, 3Advanced Technology R&D Center, Mitsubishi Electric Corporation, Japan         DESIGNING REAR SURFACE FOR CARRIER TRANSPORT IN ALL BACK CONTACT SILICON HETEROJUNCTION SOLAR CELLS
1-42	OF CAST POLY c-Si SOLAR CELLS         Suttirat Rattanapan <sup>1</sup> , Hiroshi Yamamoto <sup>1</sup> , Shinsuke Miyajima <sup>1</sup> , Takehiko Sato <sup>3</sup> , Makoto Konagai <sup>1,2</sup> IDepartment of Physical Electronics, 2Photovoltaics Research Center, Tokyo Tech., Japan, 3Advanced Technology R&D Center, Mitsubishi Electric Corporation, Japan         DESIGNING REAR SURFACE FOR CARRIER TRANSPORT IN ALL BACK CONTACT SILICON HETEROJUNCTION SOLAR CELLS         U. K. Das, M. Lu, D. Xu, O. Jani, S. Bowden, S. Hegedus, and R. W. Birkmire Institute of Energy Conversion, University of Delaware, USA
1-42	OF CAST POLY c-Si SOLAR CELLS         Suttirat Rattanapan <sup>1</sup> , Hiroshi Yamamoto <sup>1</sup> , Shinsuke Miyajima <sup>1</sup> , Takehiko Sato <sup>3</sup> , Makoto Konagai <sup>1,2</sup> IDepartment of Physical Electronics, 2Photovoltaics Research Center, Tokyo Tech., Japan, 3Advanced Technology R&D Center, Mitsubishi Electric Corporation, Japan         DESIGNING REAR SURFACE FOR CARRIER TRANSPORT IN ALL BACK CONTACT SILICON HETEROJUNCTION SOLAR CELLS         U. K. Das, M. Lu, D. Xu, O. Jani, S. Bowden, S. Hegedus, and R. W. Birkmire Institute of Energy Conversion, University of Delaware, USA         CRYSTALLINE FRONT CONTROL OF GROWING MULTICRYSTALLINE SI INGOTS DURING THE DIRECTIONAL SOLIDIFICATION PROCESS
1-42 1-43 1-44	OF CAST POLY c-Si SOLAR CELLS         Suttirat Rattanapan <sup>1</sup> , Hiroshi Yamamoto <sup>1</sup> , Shinsuke Miyajima <sup>1</sup> , Takehiko Sato <sup>3</sup> , Makoto Konagai <sup>1,2</sup> IDepartment of Physical Electronics, 2Photovoltaics Research Center, Tokyo Tech., Japan, 3Advanced Technology R&D Center, Mitsubishi Electric Corporation, Japan         DESIGNING REAR SURFACE FOR CARRIER TRANSPORT IN ALL BACK CONTACT SILICON HETEROJUNCTION SOLAR CELLS         U. K. Das, M. Lu, D. Xu, O. Jani, S. Bowden, S. Hegedus, and R. W. Birkmire Institute of Energy Conversion, University of Delaware, USA         CRYSTALLINE FRONT CONTROL OF GROWING MULTICRYSTALLINE SI INGOTS DURING THE DIRECTIONAL SOLIDIFICATION PROCESS         Y. Y. Teng <sup>1</sup> , J. C. Chen <sup>1</sup> , C. W. Lu <sup>2</sup> , C. Y. Chen <sup>3</sup> , V.V. Kalaev <sup>4</sup> , S. E. Demina <sup>4</sup> INational Central Univ, Taiwan R.O.C., 2Jen-Teh College., Taiwan R.O.C., 3Sino-American Silicon Products Inc., Taiwan R.O.C., 4Soft-Impact Ltd., Russia
1-42 1-43 1-44	OF CAST POLY c-Si SOLAR CELLS         Suttirat Rattanapan <sup>1</sup> , Hiroshi Yamamoto <sup>1</sup> , Shinsuke Miyajima <sup>1</sup> , Takehiko Sato <sup>3</sup> , Makoto Konagai <sup>1,2</sup> IDepartment of Physical Electronics, 2Photovoltaics Research Center, Tokyo Tech., Japan, 3Advanced Technology R&D Center, Mitsubishi Electric Corporation, Japan         DESIGNING REAR SURFACE FOR CARRIER TRANSPORT IN ALL BACK CONTACT SILICON HETEROJUNCTION SOLAR CELLS         U. K. Das, M. Lu, D. Xu, O. Jani, S. Bowden, S. Hegedus, and R. W. Birkmire Institute of Energy Conversion, University of Delaware, USA         CRYSTALLINE FRONT CONTROL OF GROWING MULTICRYSTALLINE SI INGOTS DURING THE DIRECTIONAL SOLIDIFICATION PROCESS         Y. Y. Teng <sup>1</sup> , J. C. Chen <sup>1</sup> , C. W. Lu <sup>2</sup> , C. Y. Chen <sup>3</sup> , V.V. Kalaev <sup>4</sup> , S. E. Demina <sup>4</sup> INational Central Univ, Taiwan R.O.C., 2Jen-Teh College., Taiwan R.O.C., 3Sino-American Silicon Products Inc., Taiwan R.O.C., 4Soft-Impact Ltd., Russia         EFFECTS OF ANNEALING ON ELECTRICAL PROPERTIES OF CAST-GROWN POLYCRYSTALLINE SILICON
1-42 1-43 1-44	OF CAST POLY c-Si SOLAR CELLS         Suttirat Rattanapan <sup>1</sup> , Hiroshi Yamamoto <sup>1</sup> , Shinsuke Miyajima <sup>1</sup> , Takehiko Sato <sup>3</sup> , Makoto Konagai <sup>1,2</sup> IDepartment of Physical Electronics, 2Photovoltaics Research Center, Tokyo Tech., Japan, 3Advanced Technology R&D Center, Mitsubishi Electric Corporation, Japan         DESIGNING REAR SURFACE FOR CARRIER TRANSPORT IN ALL BACK CONTACT SILICON HETEROJUNCTION SOLAR CELLS         U. K. Das, M. Lu, D. Xu, O. Jani, S. Bowden, S. Hegedus, and R. W. Birkmire Institute of Energy Conversion, University of Delaware, USA         CRYSTALLINE FRONT CONTROL OF GROWING MULTICRYSTALLINE SI INGOTS DURING THE DIRECTIONAL SOLIDIFICATION PROCESS         Y. Y. Teng <sup>1</sup> , J. C. Chen <sup>1</sup> , C. W. Lu <sup>2</sup> , C. Y. Chen <sup>3</sup> , V.V. Kalaev <sup>4</sup> , S. E. Demina <sup>4</sup> INational Central Univ, Taiwan R.O.C., 2Jen-Teh College., Taiwan R.O.C., 3Sino-American Silicon Products Inc., Taiwan R.O.C., 4Soft-Impact Ltd., Russia         EFFECTS OF ANNEALING ON ELECTRICAL PROPERTIES OF CAST-GROWN POLYCRYSTALLINE SILICON         Yoshio Ohshita <sup>1</sup> , Koji Fukuda <sup>1</sup> , Koji Arafune <sup>2</sup> , Takuo Sasaki <sup>1</sup> , and Masafumi Yamaguchi <sup>1</sup> I'oyota Technological Institute, Japan, 2University of Hyogo,Japan
1-42 1-43 1-44 1-45	OF CAST POLY c-Si SOLAR CELLS         Suttirat Rattanapan <sup>1</sup> , Hiroshi Yamamoto <sup>1</sup> , Shinsuke Miyajima <sup>1</sup> , Takehiko Sato <sup>3</sup> , Makoto Konagai <sup>1,2</sup> 1Department of Physical Electronics, 2Photovoltaics Research Center, Tokyo Tech., Japan, 3Advanced Technology R&D Center, Mitsubishi Electric Corporation, Japan         DESIGNING REAR SURFACE FOR CARRIER TRANSPORT IN ALL BACK CONTACT SILICON HETEROJUNCTION SOLAR CELLS         U. K. Das, M. Lu, D. Xu, O. Jani, S. Bowden, S. Hegedus, and R. W. Birkmire Institute of Energy Conversion, University of Delaware, USA         CRYSTALLINE FRONT CONTROL OF GROWING MULTICRYSTALLINE SI INGOTS DURING THE DIRECTIONAL SOLIDIFICATION PROCESS         Y. Y. Teng <sup>1</sup> , J. C. Chen <sup>1</sup> , C. W. Lu <sup>2</sup> , C. Y. Chen <sup>3</sup> , V.V. Kalaev <sup>4</sup> , S. E. Demina <sup>4</sup> INational Central Univ, Taiwan R.O.C., 2Jen-Teh College., Taiwan R.O.C., 3Sino-American Silicon Products Inc., Taiwan R.O.C., 4Soft-Impact Ltd, Russia         EFFECTS OF ANNEALING ON ELECTRICAL PROPERTIES OF CAST-GROWN POLYCRYSTALLINE SILICON         Yoshio Ohshita <sup>1</sup> , Koji Fukuda <sup>1</sup> , Koji Arafune <sup>2</sup> , Takuo Sasaki <sup>1</sup> , and Masafumi Yamaguchi <sup>1</sup> I'royota Technological Institute, Japan, 2University of Hyogo, Japan         CHALLENGES OF EVAPORATED SOLID-PHASE-CRYSTALLISED POLY-SI THINFILM SOLAR CELLS ON TEXTURED GLASS
1-42 1-43 1-44 1-45	OF CAST POLY c-Si SOLAR CELLS         Suttirat Rattanapa <sup>1</sup> , Hiroshi Yamamoto <sup>1</sup> , Shinsuke Miyajima <sup>1</sup> , Takehiko Sato <sup>3</sup> , Makoto Konagai <sup>1,2</sup> IDepartment of Physical Electronics, 2Photovoltaics Research Center, Tokyo Tech., Japan, 3Advanced Technology R&D Center, Mitsubishi Electric Corporation, Japan         DESIGNING REAR SURFACE FOR CARRIER TRANSPORT IN ALL BACK CONTACT SILICON HETEROJUNCTION SOLAR CELLS         U. K. Das, M. Lu, D. Xu, O. Jani, S. Bowden, S. Hegedus, and R. W. Birkmire Institute of Energy Conversion, University of Delaware, USA         CRYSTALLINE FRONT CONTROL OF GROWING MULTICRYSTALLINE SI INGOTS DURING THE DIRECTIONAL SOLIDIFICATION PROCESS         Y. Y. Teng <sup>1</sup> , J. C. Chen <sup>1</sup> , C. W. Lu <sup>2</sup> , C. Y. Chen <sup>3</sup> , V.V. Kalaev <sup>4</sup> , S. E. Demina <sup>4</sup> INational Central Univ, Taiwan R.O.C., 2Jen-Teh College., Taiwan R.O.C., 3Sino-American Silicon Products Inc., Taiwan R.O.C., 4Soft-Impact Ltd., Russia         EFFECTS OF ANNEALING ON ELECTRICAL PROPERTIES OF CAST-GROWN POLYCRYSTALLINE SILICON         Yoshio Ohshita <sup>1</sup> , Koji Fukuda <sup>1</sup> , Koji Arafune <sup>2</sup> , Takuo Sasaki <sup>1</sup> , and Masafumi Yamaguchi <sup>1</sup> I'Toyota Technological Institute, Japan, 2University of Hyogo,Japan         CHALLENGES OF EVAPORATED SOLID-PHASE-CRYSTALLISED POLY-SI THINFILM SOLAR CELLS ON TEXTURED         GLASS         Zi Ouyang, Oliver Kunz, Michael Wolf, Per Widenborg, Guangyao Jin, Sergey Varlamov Photovoltaices Centre of Excellence The University of New South Wales, Australia
1-42 1-43 1-44 1-45 1-46	OF CAST POLY c-Si SOLAR CELLS         Suttirat Rattanapan <sup>1</sup> , Hiroshi Yamamoto <sup>1</sup> , Shinsuke Miyajima <sup>1</sup> , Takehiko Sato <sup>3</sup> , Makoto Konagai <sup>1,2</sup> IDepartment of Physical Electronics, 2Photovoltaics Research Center, Tokyo Tech., Japan, 3Advanced Technology R&D Center, Mitsubishi Electric Corporation, Japan         DESIGNING REAR SURFACE FOR CARRIER TRANSPORT IN ALL BACK CONTACT SILICON HETEROJUNCTION SOLAR CELLS         U. K. Das, M. Lu, D. Xu, O. Jani, S. Bowden, S. Hegedus, and R. W. Birkmire Institute of Energy Conversion, University of Delaware, USA         CRYSTALLINE FRONT CONTROL OF GROWING MULTICRYSTALLINE SI INGOTS DURING THE DIRECTIONAL SOLIDIFICATION PROCESS         Y. Y. Teng <sup>1</sup> , J. C. Chen <sup>1</sup> , C. W. Lu <sup>2</sup> , C. Y. Chen <sup>3</sup> , V.V. Kalaev <sup>4</sup> , S. E. Demina <sup>4</sup> INational Central Univ, Taiwan R.O.C., 2Jen-Teh College., Taiwan R.O.C., 3Sino-American Silicon Products Inc., Taiwan R.O.C., 4Soft-Impact Ltd., Russia         EFFECTS OF ANNEALING ON ELECTRICAL PROPERTIES OF CAST-GROWN POLYCRYSTALLINE SILICON         Yoshio Ohshita <sup>1</sup> , Koji Yrafune <sup>2</sup> , Takuo Sasaki <sup>1</sup> , and Masafumi Yamaguchi <sup>1</sup> IToyota Technological Institute, Japan, 2University of Hyogo, Japan         CHALLENGES OF EVAPORATED SOLID-PHASE-CRYSTALLISED POLY-SI THINFILM SOLAR CELLS ON TEXTURED GLASS         Zi Ouyang, Oliver Kunz, Michael Wolf, Per Widenborg, Guangyao Jin, Sergey Varlamov Photovoltaics Centre of Excellence The University of New South Wales, Australia         THE INFLUENCE OF SILICON NITRIDE ANNEALING TEMPERATURE ON THE IMPLIED V <sub>oc</sub> OF CZ SILICON WAFERS
1-42 1-43 1-44 1-45 1-46	OF CAST POLY c-Si SOLAR CELLS           Suttirat Rattanapan <sup>1</sup> , Hiroshi Yamamoto <sup>1</sup> , Shinsuke Miyajima <sup>1</sup> , Takehiko Sato <sup>3</sup> , Makoto Konagai <sup>1,2</sup> Dipepartment of Physical Electronics, 2Photovoltaics Research Center, Tokyo Tech., Japan, 3Advanced Technology R&D Center, Mitsubishi Electric Corporation, Japan           DESIGNING REAR SURFACE FOR CARRIER TRANSPORT IN ALL BACK CONTACT SILICON HETEROJUNCTION SOLAR CELLS           U. K. Das, M. Lu, D. Xu, O. Jani, S. Bowden, S. Hegedus, and R. W. Birkmire Institute of Energy Conversion, University of Delaware, USA           CRYSTALLINE FRONT CONTROL OF GROWING MULTICRYSTALLINE SI INGOTS DURING THE DIRECTIONAL SOLIDIFICATION PROCESS           Y. Y. Teng <sup>1</sup> , J. C. Chen <sup>1</sup> , C. W. Lu <sup>2</sup> , C. Y. Chen <sup>3</sup> , V.V. Kalaev <sup>4</sup> , S. E. Demina <sup>4</sup> INational Central Univ, Taiwan R.O.C., 2Jen-Teh College., Taiwan R.O.C., 3Sino-American Silicon Products Inc., Taiwan R.O.C., 4Soft-Impact Ltd., Russia           EFFECTS OF ANNEALING ON ELECTRICAL PROPERTIES OF CAST-GROWN POLYCRYSTALLINE SILICON           Yoshio Ohshita <sup>1</sup> , Koji Fukuda <sup>1</sup> , Koji Arafune <sup>2</sup> , Takuo Sasaki <sup>1</sup> , and Masafumi Yamaguchi <sup>1</sup> Troyota Technological Institute, Japan, 2University of Hyogo, Japan           CHALLENGES OF EVAPORATED SOLID-PHASE-CRYSTALLISED POLY-SI THINFILM SOLAR CELLS ON TEXTURED GLASS           Zi Ouyang, Oliver Kunz, Michael Wolf, Per Widenborg, Guangyao Jin, Sergey Varlamov Photovoltaics Centre of Excellence The University of New South Wales, Australia           THE INFLUENCE OF SILICON NITRIDE ANNEALING TEMPERATURE ON THE IMPLIED Voc OF CZ SILICON WAFERS           Ziv Hameiri, Ly Mai, Nino Boroje

	Ziv Hameiri, Budi S. Tjahjono, Ly Mai, Stanley Wang, Adeline Sugianto, Shahla Javid, Stuart R. Wenham ARC Photovoltaics Centre of Excellence The University of New South Wales, Australia	
	INVESTIGATION OF INDUCED JUNCTION n-p-p <sup>+</sup> SILICON SOLAR CELL STRUCTURE BY IMPEDANCE SPECTROSCOPY	
1-49	SANJAI KUMAR <sup>1</sup> , P. K. SINGH <sup>1</sup> , GS CHILANA <sup>2</sup> and S.R. DHARIWAL <sup>3</sup> 1National Physical Laboratory, (India), 2Ramjas College, University of Delhi, (India), 3LM College of Science and Technology, (India)	
1-50	STUDY OF C-V CHARECTERSTICS IN THIN n <sup>+</sup> -p-p <sup>+</sup> SILICON SOLAR CELLS AND INDUCED JUNCTION n-p-p <sup>+</sup> CELL <u>STRUCTURE</u>	
	SANJAI KUMAK, VIKASH SAKEEN and P. K. SINGH National Physical Laboratory, India	
AREA 2	■ AREA 2: PV Modules and System Components Including Testing and Reliability:	
2.1	Hydrogen generation from water using an integrated hybrid photovoltaic (PV) and a photoelectrochemical (PEC) device using amorphous silicon carbide as the photoelectrode.	
2-1	Arun Madan MVSystems, Inc., USA	
	HIGHLY EFFICIENT PLASTIC-SUBSTRATE DYE-SENSITIZED SOLARCELLS PREPARED BY PRESS METHOD	
2-2	Hironori Arakawa, Takeshi Yamaguchi, Takuma Nagai, Nobuyuki Tobe and Daisuke Matsumoto Department of Industrial Chemistry, Faculty of Engineering, Tokyo University of Science, Japan	
	COMPUTATIONAL ANALYSIS FOR OPERATION DESIGN OF STORAGE BATTERIES IN PV CLUSTERS	
2-3	Shinji WAKAO, Yu KOBAYASHI, and Katsunori SATO Waseda University, Dept.of Electrical Engineering and Bioscience, Japan	
2.4	ENERGY YIELD FROM A LOW CONCENTRATOR MODULE VIS-A-VIS FLAT PLATE SILICON PHOTOVOLTAIC MODULE	
2-4	Ivan Saha, Khalid Nafees and Rahul Khatri Moser Baer Photovoltaic Ltd., India	
	SIMULINK MODELS FOR A STAND-ALONE PV SYSTEM	
2-5	AB Bhattacharya <sup>1</sup> , Prof Viresh Dutta <sup>2</sup> , Prof Madhusudhan Singh <sup>3</sup> and Ms Nivedita Dasgupta <sup>4</sup> 1Department of Electrical Engineering, Delhi College of Engineering, Delhi, 2Professor, Centre for Energy Studies, IIT Delhi, 3Professor, Department of Electrical Engineering, Delhi College of Engineering, Delhi, 4PhD Scholar, Centre for Energy Studies IIT Delhi	
	COST EFFECTIVE INVERTER DEVELOPMENT FOR ONE-PANEL-HOUSE APPLICATION IN DEVELOPING COUNTRIES	
2-6	Nowshad Amin <sup>1</sup> , Mohd Fadhirul Nazeri <sup>1</sup> and Kamaruzzaman Sopian <sup>2</sup> 1Department of Electrical, Electronic and Systems Engineering, 2Solar Energy Research Institute (SERI), National University of Malaysia, Malaysia	
	EFFECTS OF INTERNAL RESISTANCE UNDER PARTIAL SHADING CONDITIONS	
2-7	C.Sridowruang <sup>1</sup> , D.Chenvidhya <sup>2</sup> , B.Wiengmoon <sup>3</sup> , K.Kirtikara <sup>2,3</sup> and N.Chayavanich <sup>1,2</sup> 1Department of Electrical Engineering, 2CES Solar Cells Testing Center, 3School of Energy Materials and Environment King Mongkut's University of Technology Thonburi, Thailand	
	EXPERIMENTAL STUDIES OF ELECTRICAL FAULT LOCATION IN PV STRINGS	
2-8	Takumi TAKASHIMA <sup>1</sup> , Shunya OOHASHI <sup>2</sup> , and Masayoshi ISHIDA <sup>2</sup> 1National Institute of Advanced Industrial Science and Technology (AIST), Japan, 2University of Tsukuba, Japan	
	FABRICATION OF ANTI-REFLECTIVE STRUCTURES ON GLASS PLATE BY USING NANOIMPRINT LITHOGRAPHY	
2-9	Kang-Soo Han and Heon Lee Department of Materials Science and Engineering,Korea	
	FORWARD CURRENT PYRETIC TEST AND REVERSE BIASED BREAKDOWN TEST OF c-Si PV cells	
2-10	Takuya DOI <sup>1</sup> and Takao YAMADA <sup>1</sup> 1Research Center for Photovoltaics, National Institute of Advanced Industrial Science and Technology (AIST), Japan	

2-11	PERFORMANCE ANALYSIS OF FIELD EXPOSED SINGLE CRYSTALLINE SILICON MODULES
	O.S. Sastry <sup>1</sup> , Sriparn Saurabh, S.K. Shil, P.C. Pant, Rajesh Kumar & Bibek Bandopadhyay Solar Energy Centre, Ministry of New and Renewable Energy, New Delhi
	PHYSICAL DETERIORATION OF ENCAPSULATION AND ELECTRICAL INSULATION PROPERTIES OF PV MODULES AFTER LONG-TERM OPERATION IN THAILAND
2-12	C. Dechthummarong <sup>1,2</sup> , B. Wiengmoon <sup>1,3</sup> , D. Chenvidhya <sup>1,3</sup> , C. Jivacate <sup>1,3</sup> , K. Kirtikara <sup>1,3</sup> 1Clean Energy Systems Group (CES), Thailand, 2Rajamangala University of Technology Lanna (RMUTL), Thailand, 3King Mongkut's University of Technology Thonburi (KMUTT), Thailand
	▲ Back to TOP
Area 3: 0	Alternatives in CIGS solar cells: research and development for further advancement
3-1	Ayodhya N. Tiwari Laboratory for Thin Films and Photovoltaics, EMPA (Swiss Federal Laboratories for Material Testing and Research), Switzerland
	Cu(InGa)Se <sub>2</sub> GRAIN SIZE AND DEVICE PERFORMANCE WITH REDUCED DEPOSITION TEMPERATURE AND THICKNESS
3-2	William N. Shafarman and James D. Wilson Institute of Energy Conversion, University of Delaware, USA
	DEVELOPMENT OF NANOSTRUCTURED CADMIUM TELLURIDE FOR SOLAR CELL APPLICATIONS
3-3	Shigeru Niki <sup>1</sup> , Syogo Ishizuka <sup>1</sup> , Koji Matsubara <sup>1</sup> , Hironori Komaki <sup>1</sup> , Yukiko Kamikawa-Shimizu <sup>1</sup> , Takashi Yoshiyama <sup>1</sup> , Kazuyuki Mizukoshi <sup>1</sup> , Akimasa Yamada <sup>1</sup> , Hisayuki. Nakanishi <sup>2</sup> and Norio Terada <sup>3</sup> 1Research Center for Photovoltaics, AIST, Japan, 2Tokyo University of Science, Japan, 3Kagoshima University, Japan
	HIGH-PERFORMANCE Cu(InGa)Se2 THIN-FILM SOLAR CELLS GROWN WITH ACTIVE-SOURCES
3-4	Akira Yamada <sup>1,2</sup> , Masahiro Kawamura <sup>1</sup> , Mitsutaka Nishijima <sup>1</sup> and Makoto Konagai <sup>1,2</sup> 1Department of Physical Electronics, 2Photovoltaic Research Center, Japan
	Polycrystalline Thin Film Solar Cell Technologies
3-5	Harin S. Ullal, Ph.D. National Center for Photovoltaics National Renewable Energy Laboratory, USA
	PROCESSES FOR HIGH QUALITY CHALCOPYRITE BASED THIN FILMS CONTROLLED BY IN SITU X-RAY AND LIGHT SCATTERING METHODS
3-6	Roland Scheer, Humberto Rodriguez-Alvarez, Roland Mainz, Immo Kötschau, Raik Hesse, Christian Kaufmann, Raquel Cabellero, and Hans-Werner Schock Helmholtz-Zentrum Berlin, Germany
	CHARACTERIZATION OF NOVEL SPRAYED Zn <sub>1-x</sub> Mg <sub>x</sub> O FILMS FOR PHOTOVOLTAIC APPLICATION
3-7	<ul> <li>A. Suryanarayana Reddy<sup>1</sup> P. Prathap<sup>2</sup>, G. Ramachandra Reddy<sup>3</sup>, R.W. Miles<sup>4</sup> and K.T. Ramakrishna Reddy<sup>1</sup></li> <li>1Department of Physics, Sri Venkateswara University, India, 2InESS-CNRS, France, 3Department of Physics, Sri Ramakrishna Degree</li> <li>&amp; PG College, India, 4School of Computing, Engineering and Information Sciences, Northumbria University, UK</li> </ul>
	GROWTH OF HIGH QUALITY CIGS THIN FILMS USING CRACKED SELENIUM
3-8	Masahiro Kawamura <sup>1</sup> , Satoshi Ohnishi <sup>1</sup> , Akira Yamada <sup>1,2</sup> , Makoto Konagai <sup>1,2</sup> 1Department of Physical Electronics, 2Photovoltaics Research Center, Japan
	AMORPHOUS CARBON THIN FILMS FOR PHOTOVOLTAIC DEVICES
3-9	Sudip Adhikari <sup>1</sup> , Dilip Chandra Ghimire <sup>1</sup> , Hare Ram Aryal <sup>2</sup> , Golap Kalita <sup>2</sup> , Hideo Uchida <sup>1</sup> , Masayoshi Umeno <sup>1</sup> 1Department of Electronics and Information Engineering, 2Department of Electrical and Electronic Engineering, Chubu University, Japan
	IMPACTS OF LIGHT SOAKING & TEMPERATURE CYCLING ON Cd <sub>1-x</sub> Zn <sub>x</sub> Te THIN FILMS IN PV APPLICATIONS
3-10	Monisha Chakraborty and Biswajit Ghosh Advanced Materials and Solar PV Division School of Energy Studies, Jadavpur University, INDIA, *School of Bio-Science & Engineering, Jadavpur University, INDIA
3-11	INVESTIGATIONS ON DIELECTRIC DIFFUSION BARRIERS FOR FLEXIBLE CIGS THIN FILM SOLAR CELLS

	Juan Qin <sup>1,2</sup> , Ai-min Li <sup>1</sup> , Zhen-yi Chen <sup>1</sup> , Xiao-li Zhang <sup>1</sup> , Wei-min Shi <sup>1,2</sup> , Guang-pu Wei <sup>1</sup> 1School of Materials Science and Engineering, Shanghai University, China, 2 SHU-SolarE Joint R&D Lab, Shanghai University, China
3-12	REARCH ON CIGS THIN FILM SOLAR CELLS WITH CBD-ZNS BUFFER LAYERS
	Ai-min Li <sup>1</sup> , Juan Qin <sup>1,2</sup> , Xiao-li Zhang <sup>1</sup> , Zhen-yi Chen <sup>1</sup> , Wei-min Shi <sup>1,2</sup> , Guang-pu Wei <sup>1</sup> 1School of Materials Science and Engineering, Shanghai University, China, 2SHU-SolarE Joint R&D Lab, Shanghai University, China
2.12	SPUTTERING PARAMETER DEPENDENT ELECTRICAL PROPERTIES OF CDO THIN FILM DEPOSITED ON FLEXIBLE SUBSTRATE BY RADIO FREQUENCY MAGNETRON SPUTTERING TECHNIQUE
5 15	B. Saha, N. S. Das, R. Thapa and K. K. Chattopadhyay Thin Film and Nano Science Laboratory, Department of Physics, Jadavpur University, India
3_14	TRANSPORT AND TRANSIENT PHOTOCURRENT STUDIES OF CdS NANORODS THIN FILMS FOR SOLAR PHOTOVOLTAIC APPLICATIONS
	Gouri Sankar Paul <sup>1</sup> and Pratima Agarwal <sup>1,2</sup> 1Centre for Energy, 2Department of Physics Indian Institute of Technology, India
	ANNEALING EFFECT ON THE PHYSICAL PROPERTIES OF EVAPORATED In <sub>2</sub> S <sub>3</sub> FILMS
3-15	N. Revathi <sup>1</sup> , P. Prathap <sup>2</sup> , R.W. Miles <sup>3</sup> and K.T. Ramakrishna Reddy <sup>1</sup> 1Department of Physics, Sri Venkateswara University, India, 2InESS-CNRS, France, 3School of computing, Engineering & Information Sciences, Northumbria University, UK
	THE INVESTIGATIONS OF HETERO-JUNCTION SOLAR CELLS BAESD ON THE PSNS THIN FILMS
3-16	WU Li, SHI Wei-Ming, QIN Juan, QIU Yong-Hua, WANG LIN-JUN, WEI Guang-Pu School of Materials Science and Engineering, Shanghai University, China
	PREPARATION OF SNS/ZNO HETEROJUNCTION SOLAR CELLS
3-17	Wu Li, SHI Wei-Min, QIN Juan, WANG LIN-JUN, WEI Guang-Pu School of Materials Science and Engineering, Shanghai University, China
	DEVELOPMENT OF NANOSTRUCTURED CADMIUM TELLURIDE FOR SOLAR CELL APPLICATIONS
3-18	M. S. ABD EL-SADEK, S. MOORTHY BABU Crystal Growth Centre, Anna University, INDIA
	PREPARATION OF SnS FILMS GROWN BY SULFYRIZATION AND FABRICATION OF SnS-RELATED SOLAR CELL
3-19	Mutsumi Sugiyama, Takehiro Minemura, Keisuke Miyauchi, Katsuya Nakagomi Yuichiro Mori, Naoki Kawada and Hisayuki Nakanishi Department of Electrical Engineering, Faculty of Science & Technology, Tokyo University of Science, Japan
	PROSPECTS OF NOVEL FRONT AND BACK CONTACTS FOR HIGH EFFICIENCY CADMIUM TELLURIDE THIN FILM SOLAR CELLS FROM NUMERICAL ANALYSIS
3-20	Nowshad Amin <sup>1</sup> , Mahmud A. Matin <sup>1</sup> and Kamaruzzaman Sopian <sup>2</sup> 1Department of Electrical, Electronic and Systems Engineering, 2Solar Energy Research Institute (SERI) National University of Malaysia, Malaysia
	PERFORMANCE ANALYSIS OF CuIn <sub>1-x</sub> Ga <sub>x</sub> Se <sub>2-x</sub> S <sub>y</sub> (CIGSeS) THIN FILM SOLAR CELLS BASED ON SEMICONDUCTOR PROPERTIES
3-21	Sachin Kulkarni <sup>1</sup> Neelktanth Dhere <sup>1</sup>
	Florida Solar Energy Center, University of Central Florida, USA
2.22	REAL-TIME FILM THICKNESS MONITORING OF CIGS AND CDTE THIN-FILM SOLAR CELL PROCESSES
3-22	S. Uredat, T. Trepk, E. Steimetz, JT. Zettler LayTec GmbH, Helmholtzstr, Germany
	GROWTH AND CHARACTERIZATION OF SEQUENTIALLY DEPOSITED Cu2ZnSnSe4 THIN FILMS
3-23	P. Uday Bhaskar, G. Suresh Babu, Y.B. Kishore Kumar, and V. Sundara Raja Solar Energy Laboratory, Department of Physics, Sri Venkateswara University,INDIA
3-24	FABRICATION OF Zn DOPED Cu(In,Ga)Se2 THIN FILM SOLAR CELLS PREPARED BY THERMAL DIFFUSION OF Zn USING DIMETHYLZINC

	Atsushi Miyama <sup>1</sup> , Xiaoming Dou <sup>2</sup> , Tomoaki Sato <sup>1</sup> , Hisayuki Nakanishi <sup>1</sup> , Shigefusa F. Chichibu <sup>3</sup> , and Mutsumi Sugiyama <sup>1</sup> 1Department of Electrical Engineering, Faculty of Science & Technology, Tokyo University of Science, Japan, 2Optical Engineering Lab., Shanghai Jiao Tong University, China, 3Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan
	GROWTH OF Ag(In1-xGax)Se2 THIN FILMS BY THREE-STAGE PROCESS
3-25	T.Fujita <sup>1</sup> , M.Kawamura <sup>1</sup> , A.Yamada <sup>1,2</sup> , M.Konagai <sup>1,2</sup> 1Department of Physical Electronics Tokyo Institute of Technology, Japan, 2Photovoltaics Research Center (PVREC), Tokyo Institute of Technology, Japan
3-26	PREPARATION OF CuInGaSe <sub>2</sub> THIN FILM ABSORBER BY SELENIZATION USING ORGANOMETALLIC COMPOUND AS SELENIUM PRECURSOR
	Vinay V. Hadagali', Helio R. Moutinho <sup>-</sup> , Neelkanth G. Dhere' 1Florida Solar Energy Center, USA, 2National Renewable Energy Laboratory, USA
- 4 400 44	Amombous and Nans/Missoawstalling Silison Based Salay Calls and Balated Matarials
Area 4:	Amorphous and Nano/Microcrystalline Silicon Based Solar Cells and Related Materials:
4-1	TOWARD 2050
	Makoto Konagai Photovoltaics Research Center(PVREC), Tokyo Institute of Technology, Japan
	ADVANCES IN AMORPHOUS AND NANO-CRYSTALLINE SILICON ALLOY SOLAR CELLS AND MODULES
4-2	Subhendu Guha and Jeffrey Yang United Solar Ovonic
	FABRICATION OF THIN FILM SILICON SOLAR CELLS ON PLASTIC BY VERY HIGH FREQUENCY PECVD
4-3	J.K.Rath Utrecht university, Faculty of Sciences, Debye Institute of Nanomaterial Sciences, The Netherlands
	HOT WIRE CHEMICAL VAPOR DEPOSITION: A VERSATILE TOOL WITH GREAT POTENTIAL FOR NEXT GENERATION THIN FILM PV
4-4	R.O. Dusane Indian Institute of Technology, India
	HYDROGENATED POLYMORPHOUS SILICON AT HIGH DEPOSITION RATE: A SERIOUS ALTERNATIVE FOR COST EFFECTIVE MODULES
4-5	E.V. Johnson <sup>1</sup> , A. Abramov <sup>1</sup> , K.H. Kim <sup>1</sup> , Y. M. Soro <sup>2</sup> , M.Gueunier-Farret <sup>2</sup> , J. Méot <sup>3</sup> , J.P. Kleider <sup>2</sup> , and P. Roca i Cabarrocas <sup>1</sup> 1LPICM-CNRS, Ecole Polytechnique, France, 2LGEP-CNRS, Supélec, France, 3SOLEMS, France
	MATERIAL DEVELOPMENT FOR THIN FILM SILICON SOLAR CELLS
4-6	F. Finger Institut für Energieforschung 5 – Photovoltaik, Forschungszentrum Jülich, Germany
	THIN FILM SILICON HYBRID CELL WITH ADVANCED LIGHT TRAPPING
4-7	Mitsuru Ichikawa, Tomomi Meguro, Takashi Kuchiyama, Fumiyasu Sezaki, Kunta Yoshikawa and Kenji Yamamoto Kaneka Corporation, Japan
	EFFECT OF ELECTRODE SEPARATION ON PECVD DEPOSITED NANOCRYSTALLINE SILICON THIN FILM AND SOLAR CELL PROPERTIES
4-8	Amartya Chowdhury, Sumita Mukhopadhyay and Swati Ray Energy Research Unit, Indian Association for the Cultivation of Science, India
	LATEST DEVELOPMENTS ON MICROMORPH TANDEM CELLS AT IMT
4-9	A. Feltrin, P. Buehlmann, D. Dominé, M. Despeisse, F. Meillaud, G. Bugnon, G. Parascandolo, and C. Ballif Institute of Microtechnology, University of Neuchâtel, Switzerland
	CORRELATION OF STRUCTURAL INHOMOGENEITIES WITH TRANSPORT PROPERTIES IN AMORPHOUS SILICON GERMANIUM ALLOY THIN FILMS
4-10	Ayana Bhaduri <sup>1</sup> ), Partha Chaudhuri <sup>1</sup> ), Stephane Vignoli <sup>2</sup> ) and Christophe Longeaud <sup>3</sup> ) 1Energy Research Unit, Indian Association for the Cultivation of Science, India, 2Laboratoire de Physique de la Matière Condensée et Nanostructures, France, 3Laboratoire de Génie Electrique de Paris, France

4-11	RF POWER DENSITY DEPENDENCE GROWTH OF HYDROGENATED SILICON FILMS USING PECVD TECHNIQUE
	A. Parashar <sup>1</sup> , Sushil Kumar <sup>1</sup> , Jhuma Gope <sup>1</sup> , C.M.S. Rauthan <sup>1</sup> , P.N. Dixit <sup>1</sup> , P.K.Siwach <sup>1</sup> , O.S.Panwar <sup>1</sup> , and S.A Hashmi <sup>2</sup> 1National Physical Laboratory (CSIR), India, 2University of Delhi, India
4.12	DEVELOPMENT OF PROCESSES AND DEVICE DESIGN FOR HIGH EFFICIENCY AMORPHOUS SILICON BASED SUPERSTRATE MULTIJUNCTION SOLAR CELLS
4-12	Chandan Das, Andreas Lambertz, Vladimir Smirnov, Thilo Kilper, Aad Gordijn, Juergen Huepkes, Friedhelm Finger and Uwe Rau IEF5-Photovoltaik, Forschungszentrum Juelich GmbH, Germany
	IN-SITU LOW TEMPERATURE GROWTH OF POLY-CRYSTALLINE GERMANIUM THIN FILMS ON GLASS BY RF SPUTTERING
4-13	Chao-Yang Tsao, Jürgen W. Weber, Patrick Campbell, Per I. Widenborg, Sergey Varlamov, Gavin Conibeer, Dengyuan Song, and Martin A. Green ARC Photovoltaics Centre of Excellence, University of New South Wales, Sydney, Australia
	STUDIES ON THE LASER CRYSTALLIZED AMORPHOUS SILICON FILM
4-14	Chen Sheng, Shi Weimin, Jin Jing, Qin Juan and Cao Zechun School of Material Science and Engineering, Shanghai University, China
	LANGMUIR PROBE DIAGNOSTICS OF A MULTI-HOLE CATHODE VERY-HIGHFREQUENCY(55 MHZ) PLASMA FOR DEPOSITION OF SI:H THIN FILMS
4-15	C. Jariwala <sup>1</sup> , P. Vasu <sup>1</sup> , A. Chainani <sup>1,2</sup> , V. Dalal <sup>3</sup> and P.I. John <sup>1</sup> 1Facilitation Center for Industrial Plasma Technologies, Institute for Plasma Research, India, 2Soft X-Ray Spectroscopy Laboratory, RIKEN Spring-8 Center, Japan, 3Department of Electrical and Computer Engineering, Iowa State University, USA
	ARGON DILUTION AS AN ALTERNATIVE TO HYDROGEN DILUTION FOR THIN FILMS DEPOSITION BY RF PECVD
4-16	Christophe Longeaud <sup>1</sup> and Partha Chaudhuri <sup>2</sup> 1Laboratoire de Génie Electrique de Paris, CNRS (UMR8507), Supelec, France, 2Energy Research Unit, Indian Association for the Cultivation of Science, India.
	LARGE AREA TEXTURE-ETCHED ZnO:AI FRONT CONTACTS FOR THIN FILM SILICON SOLAR CELLS AND MODULES
4-17	D. Severin <sup>1</sup> , M. Kress <sup>1</sup> , N. Kuhr <sup>1</sup> , Philipp Obermeyer <sup>1</sup> , S. Shrauti <sup>2</sup> , J. Müller <sup>1</sup> , J. Schröder <sup>1</sup> , K. Witting <sup>1</sup> , K. Schwanitz <sup>1</sup> , T. Stolley <sup>1</sup> , S. Klein <sup>1</sup> , J. Haack <sup>1</sup> , T. Repmann <sup>1</sup> , U. Schmidt <sup>1</sup> , S. Wieder <sup>1</sup> 1Applied Materials GmbH & Co, Germany, 2Applied Materials Inc., USA
	HIGHLY CONDUCTING nc-SiO:H FILMS PREPARED FROM (SiH4+CO2+He)-PLASMA BY RF-PECVD
4-18	Arup Samanta and Debajyoti Das Nano-Science Group, Energy Research Unit Indian Association for the Cultivation of Science, INDIA
4 10	EFFECT OF NEGATIVE SUBSTRATE BIAS ON NANOCRYSTALLINE SILICON THIN FILM PREPARED USING HELIUM DILUTED SIH <sub>4</sub> PLASMA
4-19	Debnath Raha, Debajyoti Das Nano-Science Group, Energy Research Unit Indian Association for the Cultivation of Science, INDIA
4 20	ENHANCED LIGHT TRAPPING IN SPC POLY-SI THIN FILM SOLAR CELLS ON ALUMINIUM INDUCED TEXTURED GLASS SUPERSTRATES
4-20	Guangyao Jin, Per I. Widenborg, Patrick Campbell and Sergey Varlamov ARC Photovoltaics Centre of Excellence, The University of New South Wales (UNSW), Australia
4-21	ENHANCEMENT OF LIGHT TRAPPING IN THIN-FILM SILICON SOLAR CELLS USING BACK REFLECTORS WITH SELF- ORDERED DIMPLE PATTERN
	Hitoshi Sai and Michio Kondo National Institute of Advanced Industrial Science and Technology (AIST), Japan
	FABRICATING LARGE AREA QUANTUM DOT SOLAR CELL
4-22	Iftiquar S. M. <sup>1</sup> , Sadhan Mahapatra <sup>2</sup> 1Department of Physics, Indian Institute of Science, India, 2Department of Energy, Tezpur University, Assam
4-23	AMORPHOUS SILICON CARBIDE SOLAR CELLS WITH HIGH OPEN-CIRCUIT VOLTAGE FOR MULTI-JUNCTION CELL APPLICATIONS

	Ihsanul Afdi Yunaz <sup>1</sup> , Hiroshi Nagashima <sup>2</sup> , Kazuhiro Hikida <sup>2</sup> , Shinsuke Miyajima <sup>1</sup> , Akira Yamada <sup>1,3</sup> , Makoto Konagai <sup>1,3</sup> 1Department of Physical Electronics, Tokyo Institute of Technology, Japan, 2Department of Electrical & Electronic Engineering, Tokyo Institute of Technology, Japan, 3Photovoltaics Research Center (PVREC), Tokyo Institute of Technology, Japan
4-24	7% EFFICIENCY MICROCRYSTALLINE SILICON SOLAR CELL WITH HIGH-RATE(6 NM/S) PHOTOVOLTAIC I-LAYER: EFFECTS OF SUBSTRATE TEMPERATURE
	J. Chantana, T. Higuchi, Y. Sobajima, T. Toyama, C. Sada, A. Matsuda, H. Okamoto Department of Systems Innovation, Graduate School of Engineering Science, Japan
	EFFECT OF CRYSTALLINITY ON PHOTOSENSITIVITY AND STABILITY OF AMORPHOUS AND NANOCRYSTALLINE SILICON THIN FILMS
4-25	Jhuma Gope <sup>1</sup> , Sushil Kumar <sup>1</sup> , A. Parashar <sup>1</sup> , C.M.S. Rauthan <sup>1</sup> , P.N. Dixit <sup>1</sup> , P.K. Siwach <sup>1</sup> , O.S. Panwar <sup>1</sup> and S.C. Agarwal <sup>2</sup> 1National Physical Laboratory (CSIR), India, 2Indian Institute of Technology, India
	TEMPERATURE DEPENDENT DEVICE MODELING OF THIN-FILM CRYSTALLINE SILICON ON GLASS SOLAR CELLS
4-26	Jialiang Huang <sup>1</sup> , Johnson Wong <sup>1</sup> , Martin Green <sup>1</sup> , Mark Keevers <sup>2</sup> 1ARC Photovoltaics Centre of Excellence, University of New South Wales, Australia, 2CSG Solar Pty Ltd, Australia
	SHALLOW TRAP DISTRIBUTION IN EVAPORATED THIN-FILM CRYSTALLINE SILICON ON GLASS SOLAR CELLS BY ANALYSIS OF HALL COEFFICIENTS
4-27	Johnson Wong, Jialiang Huang, Martin Green, Mark Keevers ARC Photovoltaics Centre of Excellence, University of New South Wales, Australia
	ADVANCED LIGHT MANAGEMENT FOR THIN FILM SILICON SOLAR CELLS
4-28	J. Bailat, L. Castens, S. Benagli, D. Borello, J. Spitznagel, Y. Djeridane, P-A. Madliger, B. Dehbozorgi, G. Monteduro, J. Steinhauser, M. Marmelo, J. Hoetzl, E. Vallat-Sauvain, U. Kroll, J. Meier Oerlikon Solar-Lab, Oerlikon Solar Ltd., Switzerland
	INFLUENCE OF CARBON AND BORON ON FORMATION OF NANOCRYSTALLINE SILICON-CARBIDE FILM
4-29	Koel Adhikary and Swati Ray Energy Research Unit, IACS, Jadavpur, India
	VERTICAL PROFILE SOLAR CELL
4-30	VERTICAL PROFILE SOLAR CELL N.Lakshminarayan Department of Physics, Madras Christian College, India
4-30	VERTICAL PROFILE SOLAR CELL         N.Lakshminarayan         Department of Physics, Madras Christian College, India         POTENTIAL OF QUASI MONOCRYSTALLINE POROUS SILICON (QMPS) AS AN ACTIVE MATERIAL FOR SOLAR CELL
4-30 4-31	VERTICAL PROFILE SOLAR CELL         N.Lakshminarayan         Department of Physics, Madras Christian College, India         POTENTIAL OF QUASI MONOCRYSTALLINE POROUS SILICON (QMPS) AS AN ACTIVE MATERIAL FOR SOLAR CELL         M. Chakraborty (Banerjee) <sup>1</sup> , S.K. Datta <sup>2</sup> , S. Basu <sup>3</sup> , H. Saha <sup>3</sup> Trechno India, Salt Lake, Kolkata, India, 2City College, Kolkata, India, 3IC Design & Fabrication Centre, Jadavpur University, Kolkata, India
4-30 4-31	VERTICAL PROFILE SOLAR CELL         N.Lakshminarayan         Department of Physics, Madras Christian College, India         POTENTIAL OF QUASI MONOCRYSTALLINE POROUS SILICON (QMPS) AS AN ACTIVE MATERIAL FOR SOLAR CELL         M. Chakraborty (Banerjee) <sup>1</sup> , S.K. Datta <sup>2</sup> , S. Basu <sup>3</sup> , H. Saha <sup>3</sup> Trechno India, Salt Lake, Kolkata, India, 2City College, Kolkata, India, 3IC Design & Fabrication Centre, Jadavpur University, Kolkata, India         PERFORMANCE OF MICROCRYSTALLINE SILICON SINGLE AND DOUBLE JUNCTION SOLAR CELLS OF DIFFERENT         DEGREES OF CRYSTALLINITY
4-30 4-31 4-32	VERTICAL PROFILE SOLAR CELLN.Lakshminarayan Department of Physics, Madras Christian College, IndiaPOTENTIAL OF QUASI MONOCRYSTALLINE POROUS SILICON (QMPS) AS AN ACTIVE MATERIAL FOR SOLAR CELLM. Chakraborty (Banerjee) <sup>1</sup> , S.K. Datta <sup>2</sup> , S. Basu <sup>3</sup> , H. Saha <sup>3</sup> 1Techno India, Salt Lake, Kolkata, India, 2City College, Kolkata, India, 3IC Design & Fabrication Centre, Jadavpur University, Kolkata, IndiaPERFORMANCE OF MICROCRYSTALLINE SILICON SINGLE AND DOUBLE JUNCTION SOLAR CELLS OF DIFFERENT DEGREES OF CRYSTALLINITYM. Nath <sup>1</sup> , S. Chakraborty <sup>1</sup> , E. V. Johnson <sup>2</sup> , A. Abramov <sup>2</sup> , P. Roca i Cabarrocas <sup>2</sup> , and P. Chatterjee <sup>1</sup> 1Energy Research Unit, Indian Association for the Cultivation of Science, India, 2Laboratoire de Physique des Interfaces et des Couches Minces, CNRS, Ecole Polytechnique, France
4-30 4-31 4-32	VERTICAL PROFILE SOLAR CELLN.Lakshminarayan Department of Physics, Madras Christian College, IndiaPOTENTIAL OF QUASI MONOCRYSTALLINE POROUS SILICON (QMPS) AS AN ACTIVE MATERIAL FOR SOLAR CELLM. Chakraborty (Banerjee) <sup>1</sup> , S.K. Datta <sup>2</sup> , S. Basu <sup>3</sup> , H. Saha <sup>3</sup> 1Techno India, Salt Lake, Kolkata, India, 2City College, Kolkata, India, 3IC Design & Fabrication Centre, Jadavpur University, Kolkata, IndiaPERFORMANCE OF MICROCRYSTALLINE SILICON SINGLE AND DOUBLE JUNCTION SOLAR CELLS OF DIFFERENT DEGREES OF CRYSTALLINITYM. Nath <sup>1</sup> , S. Chakraborty <sup>1</sup> , E. V. Johnson <sup>2</sup> , A. Abramov <sup>2</sup> , P. Roca i Cabarrocas <sup>2</sup> , and P. Chatterjee <sup>1</sup> 1Energy Research Unit, Indian Association for the Cultivation of Science, India, 2Laboratoire de Physique des Interfaces et des Couches Minces, CNRS, Ecole Polytechnique, FranceMICROCRYSTALLINE SILICON SOLAR CELLS: EFFECT OF SUBSTRATE TEMPERATURE ON CRACKS
4-30 4-31 4-32 4-33	VERTICAL PROFILE SOLAR CELLN.Lakshminarayan Department of Physics, Madras Christian College, IndiaPOTENTIAL OF QUASI MONOCRYSTALLINE POROUS SILICON (QMPS) AS AN ACTIVE MATERIAL FOR SOLAR CELLM. Chakraborty (Banerjee) <sup>1</sup> , S.K. Datta <sup>2</sup> , S. Basu <sup>3</sup> , H. Saha <sup>3</sup> 1Techno India, Salt Lake, Kolkata, India, 2City College, Kolkata, India, 3IC Design & Fabrication Centre, Jadavpur University, Kolkata, IndiaPERFORMANCE OF MICROCRYSTALLINE SILICON SINGLE AND DOUBLE JUNCTION SOLAR CELLS OF DIFFERENT DEGREES OF CRYSTALLINTYM. Nath <sup>1</sup> , S. Chakraborty <sup>1</sup> , E. V. Johnson <sup>2</sup> , A. Abramov <sup>2</sup> , P. Roca i Cabarrocas <sup>2</sup> , and P. Chatterjee <sup>1</sup> IEnergy Research Unit, Indian Association for the Cultivation of Science, India, 2Laboratoire de Physique des Interfaces et des Couches Minces, CNRS, Ecole Polytechnique, FranceMICROCRYSTALLINE SILICON SOLAR CELLS; EFFECT OF SUBSTRATE TEMPERATURE ON CRACKS Martin Python, Didier Dominé, Fanny Meillaud, Christophe Ballif Institute of Microtechnology (IMT), Thin Film silicon and photovoltaics Laboratory, Switzerland
4-30 4-31 4-32 4-33	VERTICAL PROFILE SOLAR CELLN.Lakshminarayan Department of Physics, Madras Christian College, IndiaPOTENTIAL OF QUASI MONOCRYSTALLINE POROUS SILICON (QMPS) AS AN ACTIVE MATERIAL FOR SOLAR CELLM. Chakraborty (Banerjee) <sup>1</sup> , S.K. Datta <sup>2</sup> , S. Basu <sup>3</sup> , H. Saha <sup>3</sup> I'Techno India, Salt Lake, Kolkata, India, 2City College, Kolkata, India, 3IC Design & Fabrication Centre, Jadavpur University, Kolkata, IndiaPERFORMANCE OF MICROCRYSTALLINE SILICON SINGLE AND DOUBLE JUNCTION SOLAR CELLS OF DIFFERENT DEGREES OF CRYSTALLINITYM. Nath <sup>1</sup> , S. Chakraborty <sup>1</sup> , E. V. Johnson <sup>2</sup> , A. Abramov <sup>2</sup> , P. Roca i Cabarrocas <sup>2</sup> , and P. Chatterjee <sup>1</sup> IEnergy Research Unit, Indian Association for the Cultivation of Science, India, 2Laboratoire de Physique des Interfaces et des Couches Minces, CNRS, Ecole Polytechnique, FranceMICROCRYSTALLINE SILICON SOLAR CELLS: EFFECT OF SUBSTRATE TEMPERATURE ON CRACKS Martin Python, Didier Dominé, Fanny Meillaud, Christophe Ballif Institute of Microtechnology (IMT), Thin Film silicon and photovoltaics Laboratory, SwitzerlandA-SI/aC-SI TANDEM MODULE DEVELOPMENT ON 1.4M <sup>2</sup> SUBSTRATE SIZE
4-30 4-31 4-32 4-33 4-34	VERTICAL PROFILE SOLAR CELL         N.Lakshminarayan         Department of Physics, Madras Christian College, India         POTENTIAL OF OUASI MONOCRYSTALLINE POROUS SILICON (OMPS) AS AN ACTIVE MATERIAL FOR SOLAR CELL         M. Chakraborty (Banerjee) <sup>1</sup> , S.K. Datta <sup>2</sup> , S. Basu <sup>3</sup> , H. Saha <sup>3</sup> 1Techno India, Salt Lake, Kolkata, India, 2City College, Kolkata, India, 3IC Design & Fabrication Centre, Jadavpur University, Kolkata, India         PERFORMANCE OF MICROCRYSTALLINE SILICON SINGLE AND DOUBLE JUNCTION SOLAR CELLS OF DIFFERENT         DEGREES OF CRYSTALLINTY         M. Nath <sup>1</sup> , S. Chakraborty <sup>1</sup> , E. V. Johnson <sup>2</sup> , A. Abramov <sup>2</sup> , P. Roca i Cabarrocas <sup>2</sup> , and P. Chatterjee <sup>1</sup> IEnergy Research Unit, Indian Association for the Cultivation of Science, India, 2Laboratoire de Physique des Interfaces et des Couches Minces, CNRS, Ecole Polytechnique, France         MICROCRYSTALLINE SILICON SOLAR CELLS: EFFECT OF SUBSTRATE TEMPERATURE ON CRACKS         Martin Python, Didier Dominé, Fanny Meillaud, Christophe Ballif         Institute of Microtechnology (IMT), Thin Film silicon and photovoltaics Laboratory, Switzerland         A-SI/µC-SI TANDEM MODULE DEVELOPMENT ON 1.4M <sup>2</sup> SUBSTRATE SIZE         Martin Rohde, Stefan Klein, Tobias Stolley, Konrad Schwanitz, Susanne Buschbaum, Tobias Repmann Applied Materials GmbH & Co, Germany
<ul> <li>4-30</li> <li>4-31</li> <li>4-32</li> <li>4-33</li> <li>4-34</li> <li>4-35</li> </ul>	VERTICAL PROFILE SOLAR CELLN. Lakshminarayan Department of Physics, Madras Christian College, IndiaPOTENTIAL OF QUASI MONOCRYSTALLINE POROUS SILICON (OMPS) AS AN ACTIVE MATERIAL FOR SOLAR CELLM. Chakraborty (Banerjee) <sup>1</sup> , S.K. Datta <sup>2</sup> , S. Basu <sup>3</sup> , H. Saha <sup>3</sup> TTechno India, Salt Lake, Koikata, India, 2City College, Kolkata, India, 3IC Design & Fabrication Centre, Jadavpur University, Kolkata, IndiaPERFORMANCE OF MICROCRYSTALLINE SILICON SINGLE AND DOUBLE JUNCTION SOLAR CELLS OF DIFFERENT DEGREES OF CRYSTALLINITYN. Nath <sup>1</sup> , S. Chakraborty <sup>1</sup> , E. V. Johnson <sup>2</sup> , A. Abramov <sup>2</sup> , P. Roca i Cabarrocas <sup>2</sup> , and P. Chatterjee <sup>1</sup> Energy Research Unit, Indian Association for the Cultivation of Science, India, 2Laboratoire de Physique des Interfaces et des Couches Minces, CNRS, Ecole Polytechnique, FranceMICROCRYSTALLINE SILICON SOLAR CELLS: EFFECT OF SUBSTRATE TEMPERATURE ON CRACKSMartin Python, Didier Dominé, Fanny Meillaud, Christophe Ballif Institute of Microtechnology (IMT), Thin Film silicon and photovoltaics Laboratory, SwitzerlandALSU/uC-SI TANDEM MODULE DEVELOPMENT ON 1.4M <sup>2</sup> SUBSTRATE SIZE Martin Rohde, Stefan Klein, Tobias Stolley, Konrad Schwanitz, Susanne Buschbaum, Tobias Repmann Applied Materials GmbH & Co, GermanyDENSE SILICON NANOWIRES FROM HWCVD DEPOSITED AMORPHOUS -SILICON ON GLASS SUBSTRATES FOR PHOTOVOLTAIC APPLICATION
<ul> <li>4-30</li> <li>4-31</li> <li>4-32</li> <li>4-33</li> <li>4-34</li> <li>4-35</li> </ul>	VERTICAL PROFILE SOLAR CELL         N.Lakshminarayan         Department of Physics, Madras Christian College, India         POTENTIAL OF QUASI MONOCRYSTALLINE POROUS SILICON (QMPS) AS AN ACTIVE MATERIAL FOR SOLAR CELL         M. Chakraborty (Banerjee) <sup>1</sup> , S.K. Datta <sup>2</sup> , S. Basu <sup>3</sup> , H. Saha <sup>3</sup> Treehon India, Salt Lake, Kolkata, India, 2City College, Kolkata, India, 3IC Design & Fabrication Centre, Jadavpur University, Kolkata, India         PERFORMANCE OF MICROCRYSTALLINE SILICON SINGLE AND DOUBLE JUNCTION SOLAR CELLS OF DIFFERENT DEGREES OF CRYSTALLINITY         M. Nath <sup>1</sup> , S. Chakraborty <sup>1</sup> , E. V. Johnson <sup>2</sup> , A. Abramov <sup>2</sup> , P. Roca i Cabarrocas <sup>2</sup> , and P. Chatterjee <sup>1</sup> ElEnergy Research Unit, Indian Association for the Cultivation of Science, India, 2Laboratoire de Physique des Interfaces et des couches Minces, CNRS, Ecole Polytechnique, France         MICROCRYSTALLINE SILICON SOLAR CELLS: EFFECT OF SUBSTRATE TEMPERATURE ON CRACKS         Martin Python, Didier Dominé, Fanny Meillaud, Christophe Ballif         Institute of Microtechnology (IMT), Thin Film silicon and photovoltates Laboratory, Switzerland         A-SI/µC-SI TANDEM MODULE DEVELOPMENT ON 1.4M <sup>2</sup> SUBSTRATE SIZE         Martin Rohde, Stefan Klein, Tobias Stolley, Konrad Schwanitz, Susanne Buschbaum, Tobias Repmann Applied Materials GmbH & Co, Germany         DENSE SILICON NANOWIRES FROM HWCVD DEPOSITED AMORPHOUS -SILICON ON GLASS SUBSTRATES FOR PHOTOVOLTAIC APPLICATION         Nagsen Meshram, Alka Kumbhar and R. O. Dusane         Department of Metallurgical Engineering and Materials Science, Ind

	Nowshad Amin <sup>1</sup> , M. I. Kabir <sup>1</sup> and Kamaruzzaman Sopian <sup>2</sup> 1Department of Electrical, Electronic and Systems Engineering, 2Solar Energy Research Institute (SERI) National University of Malaysia, Malaysia
	CHARGE TRASPORT IN NANOCRYSTALLINE SILICON: EFFECT OF MICROSTRUCTURE AND HYDROGENPLASMA TREATMENT
4-37	S. Paul, P. Dutta, D. W. Galipeau and V. Bommisetty Department of Electrical Engineering, South Dakota State University, USA
	DEVELOPMENT OF LARGE AREA SINGLE JUNCTION AMORPHOUS SILICON SOLAR CELL FROM ARGON DILUTION OF SILANE IN A SINGLE CHAMBER PECVD SYSTEM
4-38	Partha Pratim Ray <sup>1,2</sup> , Christophe Longeaud <sup>1</sup> , Dmitri Daineka <sup>3</sup> , Pere Roca i Cabarrocas <sup>3</sup> , Ayana Bhaduri <sup>4</sup> , Partha Chaudhuri <sup>4</sup> 1Laboratoire de Génie Electrique de Paris, CNRS (UMR 8507), Supelec, Universités Paris VI et XI, France, 2Department of Physics, Jadavpur University, India, 3Laboratoire de Physique des Interfaces et Couches Minces, Ecole Polytechnique, France, 4Energy Research Unit, Indian Association for the Cultivation of Science, India
	NANO-CRYSTALLITE EMBEDDED AMORPHOUS SILICON PREPARED BY HOTWIRE CHEMICAL VAPOUR DEPOSITION
4-39	Purabi Gogoi, Himanshu S. Jha and Pratima Agarwal Department of Physics, IIT Guwahati, India
	Development of Nano-Silicon Carbide thin films by Chemical vapor deposition for Thermophotovoltaic Application
4-40	R. Das <sup>1</sup> , D. Notaro <sup>2</sup> , and P.S. Dutta <sup>2</sup> 1School of Applied Science, Haldia Institute of Technology, India, 2Electrical, Computer and Systems Engineering Department, Rensselaer Polytechnic Institute
	PHOTOLUMINESCENCE AND BONDING CONFIGURATION IN SILICON OXIDE FILMS PREPARED BY RFPECVD
4-41	Romyani Goswami, Sumita Mukhopadhyay, Swati Ray Energy Research Unit Indian Association for the Cultivation of Science, India
	NOVEL MESH SUBSTRATES FOR AMORPHOUS SILICON CONCENTRATOR SOLAR CELLS APPLICATION
4-42	Shunsuke Kasashima <sup>1</sup> , Ihsanul Afdi Yunaz <sup>1</sup> , Yasuo Kakihara <sup>2</sup> , Shinsuke Miyajima <sup>1</sup> , Akira Yamada <sup>1,3</sup> , Makoto Konagai <sup>1,3</sup> 1Department of Physical Electronics Tokyo Institute of Technology, Japan, 2R&D Div. TODA KOGYO CORP., Japan, 3Photovoltaics Research Center (PVREC), Tokyo Institute of Technology, Japan
4-43	MICROSTRUCTURE OF SILICON FILMS DEVELOPED UNDER DIFFERENT PLASMA EXCITATION FREQUENCY AND ITS EFFECTS ON SOLAR CELL PERFORMANCE
	Sumita Mukhopadhyay, Amartya Chowdhury and Swati Ray Energy Research Unit, Indian Association for the Cultivation of Science, India
	HIGH DEPOSITION RATE DEVICE QUALITY A-SI:H FILMS BY HWCVD TECHNIQUE
4-44	S. K. Soni, Anup Pathak and R.O. Dusane Department of Metallurgical Engineering and Materials Science Indian Institute of Technology, India
	INFLUENCE OF PLASMA PARAMETERS ON GROWTH OF SILICON FILMS
4-45	Sushil Kumar, A. Parashar, Jhuma Gope, C.M.S. Rauthan, P.N. Dixit, P.K. Siwach, and O.S. Panwar National Physical Laboratory (CSIR), India
4-46	OPTICAL EMISSION SPECTROSCOPY STUDIES ON VHF (100 MHZ) PECVD PROCESSES FOR HIGH-RATE (> 5 NM/S) MICROCRYSTALLINE SILICON THIN FILMS
	T. Higuchi, J. Chantana, Y. Sobajima, T. Toyama, C. Sada, A. Matsuda, and H. Okamoto Department of Systems Innovation, Graduate School of Engineering Science Osaka University, Japan
	RELATIONSHIP BETWEEN SURFACE MORPHOLOGY OF ZINC OXIDE AND PERFORMANCE OF HYDROGENATED
4-47	Teruaki Hayashi <sup>1</sup> , Shuichi Hiza <sup>1</sup> , Shinsuke Miyajima <sup>1</sup> , Akira Yamada <sup>1,2</sup> and Makoto Konagai <sup>1,2</sup> 1Department of Physical Electronics, Tokyo Institute of Technology, Japan, 2Photovoltaics Research Center, Tokyo Institute of Technology, Japan
	ASYMMETRIC INTERMEDIATE REFLECTOR FOR TANDEM THIN FILM SILICON SOLAR CELLS
4-48	Thomas Söderström, FJ. Haug, V. Terrazzoni, X. Niquille, O. Cubero and C. Ballif University of Neuchâtel, IMT, Rue AL, Switzerland
4-49	

	LOW TEMPERATURE DEPOSITION OF ALMINNUM DOPED HYDROGENATED NANO CRYSTALLINE CUBIC SILICON CARBIDE FOR THE WINDOW LAYER OF SILICON-BASED THIN-FILM SOLAR CELLS WITH A WIDEGAP I-LAYER
	Tomohiro Shinagawa <sup>1</sup> , Shinsuke Miyajima <sup>1</sup> , Akira Yamada <sup>1,2</sup> , Makoto Konagai <sup>1,2</sup> 1Department of Physical Electronics, Tokyo Institute of Technology, Japan, 2Photovoltaics Research Center, Tokyo Institute of Technology, Japan
4-50	ESR STUDIES ON DEFECT EVOLUTIONS OF MICROCRYSTALLINE SILICON THIN FILMS GROWN ON TEXTURED AZO SURFACES
	Masanori Kurihara <sup>1</sup> , Yu Kubota <sup>1</sup> , Yasushi Sobajima <sup>1</sup> , Toshihiko Toyama <sup>1</sup> , Akihisa Matsuda <sup>1</sup> and Hiroaki Okamoto <sup>1</sup> 1Department of Systems Innovation, Graduate School of Engineering Science Osaka University, Japan
	DEVELOPMENT OF LOW TEMPERATURE RF-MAGNETRON SPUTTERED ITO FILM ON FLEXIBLE SUBSTRATE
4-51	T. P. Muneshwar <sup>1</sup> , V. Varma <sup>1</sup> , S. K. Soni <sup>1</sup> , N. Meshram <sup>1</sup> and R. O. Dusane <sup>1</sup> 1Department of Metallurgical Engineering and Materials Science Indian Institute of Technology-Bombay, India
	INTRINSIC NANOCRYSTALLINE SILICON DEPOSITED BY VHF PECVD AT VARIOUS INTER-ELECTRODE DISTANCES
4-52	Yanchao Liu, Jatin Rath, Ruud Schropp Utrecht University, Faculty of Science, Nanophotonics – Physics of Devices, the Netherlands
	MASS PRODUCTION START-UP ACTIVITIES FOR HIGH-EFFICIENCY MICROCRYSTALLINE TANDEM SOLAR CELLS
4-53	Yasuhiro Yamauchi <sup>1</sup> , Hiromu Takatsuka <sup>1</sup> , Yoshiaki Takeuchi <sup>2</sup> and Satoshi Sakai <sup>3</sup> 1Solar Cell Power System Business Unit, 2Nagasaki R&D Center, 3Advanced Technology Research Center Mitsubishi Heavy Industries, Ltd, Japan
	Microcrystalline Silicon Grown by PECVD and the Fabrication of Solar Cells
4-54	Wang Yi <sup>1</sup> , Shi Weimin <sup>1</sup> , Jin Jing <sup>1</sup> , Wang Linjun <sup>1</sup> , Qin Juan <sup>1</sup> , Zhu WenQing <sup>1</sup> , Cao Zejun <sup>1</sup> 1School of Materials Science and Engineering Shanghai University, China
- Aron 5 ·1	Back to TOP
	SUPER HIGH EFFICIENCY MULTI-JUNCTION, CONCENTRATOR AND SPACE SOLAR CELLS
5-1	Masafumi Yamaguchi <sup>1</sup> , Tatsuya Takamoto <sup>2</sup> , Kenji Araki <sup>3</sup> , Mitsuru Imaizumi <sup>4</sup> , Nobuaki Kojima <sup>1</sup> and Yoshio Ohshita <sup>1</sup> 1Toyota Tech. Inst., Japan, 2Sharp Co., Japan, 3Daido Steel Co, Japan
	QUANTUM STRUCTURES IN CONCENTRATOR CELLS AND LUMINESCENT CONCENTRATORS
5-2	K.W.J.Barnham <sup>1</sup> , J.G.J.Adams <sup>1</sup> , I.M.Ballard <sup>1</sup> , R.Bose <sup>1</sup> , B.C.Browne <sup>1</sup> , A.J.Chatten <sup>1</sup> , J.C.Connolly <sup>1</sup> , N.J.Ekins-Daukes <sup>1</sup> , D.J.Farrell <sup>1</sup> , A.Ioannides <sup>1</sup> , G. Hill <sup>2</sup> , J.S. Roberts <sup>2</sup> , T.N.D.Tibbits <sup>3</sup> 11mperial College London, UK, 2EPSRC III-V National Centre for III-V Technologies, UK, 3QuantaSol Ltd., UK
	CHARACTERISTICS OF GaInNAsSb SOLAR CELLS GROWN BY ATOMIC HIDROGEN-ASSISTED MOLECULAR BEAM EPITAXY
5-3	Naoya Miyashita <sup>1</sup> , Shuhei Ichikawa <sup>2</sup> , and Yoshitaka Okada <sup>1,3</sup> 1Graduate School of Engineering, The University of Tokyo, Japan, 2Institute of Applied Physics, University of Tsukuba, Japan, 3Research Center for Advanced Science and Technology, The University of Tokyo, Japan
	DEEP LEVELS INVESIGATION IN n-TYPE GaAsN GROWN BY CHEMICAL BEAM EPITAXY
5-4	Boussairi Bouzazi, Hidetoshi Suzuki, Nobuaki Kojima, Yoshio Ohshita, and Masafumi Yamaguchi Toyota Technological Institute, Japan
	DESIGN OF A NEW LOW CONCENTRATOR PHOTOVOLTAIC SYSTEM
5-5	Shashi Srivastava <sup>1</sup> and Nikhil Agarwal <sup>2</sup> 1Corporate R&D, 2Corporate R&D Moser Baer India Limited, India
	IMPROVEMENT OF A TANDEM SOLAR CELL WITH OPTIMIZED LOW BANDGAPS
5-6	B.E. Sağol, N. Szabó, H. Döscher, U. Seidel, C. Höhn, K. Schwarzburg, T. Hannappel Helmholtz-Zentrum Berlin für Materialien und Energie GmbH Glienicker Str, Germany
	CHARACTERIZATION OF CARRIER RECOMBINATION IN III-V COMPOUND SEMICONDUCTOR MATERIALS
5-7	

5-8	ANNEALING EFFECT ON ELECTRICAL PROPERTIES OF GAASN GROWN BY CHEMICAL BEAM EPITAXY
	Jong-Han Lee, Hidetoshi Suzuki, Taiki Hashiguchi, Makoto Inagaki, Nobuaki Kojima, Yoshio Ohshita and Masafumi Yamaguchi Toyota Technological Institute, Japan
Area6: P	▲ Back to TOP hotovoltaics with nanocomposites and other new concepts:
	APPLICATION OF CARBON NANOMATERIALS FOR SOLAR CELLS
6-1	Masayoshi Umeno, Sudip Adhikari, Golap kalita Chubu University, Japan
6-2	CARRIER TRANSPORT IN ORGANIC PV DEVICES
	Vikram Kumar, Pankaj Kumar, Suresh Chand, S. C. Jain National Physical Laboratory, New Delhi
6-3	DEVELOPMENT OF RHODAMINE ENDCAPPED THIOPHENE BASED DEVICES FOR SOLAR CELL APPLICATIONS
	Ashish Dembla <sup>1,2</sup> , S. Sundar Kumar Iyer <sup>1,2</sup> , N. Somanathan <sup>3</sup> 1Department of Electrical Engineering, Indian Institute of Technology, India, 2Samtel Centre for Display Technologies, Indian Institute of Technology, India, 3Polymer Science Division, Central Leather Research Institute, India
	QUASI SOLID STATE DYE SENSITIZED SOLAR CELL BASED ON THIAZOLE YELLOW
6-4	P.Balraju <sup>1</sup> , M.S.Roy <sup>2</sup> , G.D.Sharma <sup>1</sup> 1Department of Physics, Jai Narain Vyas University, India, 2Solar Devices Group, Defence Laboratory, India
6.5	FABRICATION AND CHARACTERIZATION OF SnS THIN FILMS USNG SILAR METHOD FOR PHOTOVOLTAIC APPLICATIONS
0-0	Biswajit Ghosh, Madhumita Das, Pushan Banerjee and Subrata Das Advanced Materials & Solar Photovoltaic Division, School of Energy Studies, Jadavpur University, India.
	SOLAR ENERGY HARVESTING THROUGH ANTHOCYANINE PIGMENT BASED DYE-SENSITIZED SOLAR CELLS
6-6	C.O.Sreekala <sup>1</sup> , K.S.Sreelatha <sup>1</sup> , Y. S. Deol <sup>2</sup> , P. Balraju <sup>2</sup> , and M. S. Roy <sup>2</sup> 1Amrita Vishwa Vidyapeetham, Amritapuri Campus, Kerala, 2Defence Laboratory, Rajasthan
	BULK HETEROJUNCTION SOLAR CELL WITH BLENDING OF TWO CONJUGATE POLYMERS
6-7	H. S. Ko <sup>1</sup> , J.J.Jhuang <sup>1</sup> , C. Gau <sup>1</sup> , K. H. Wu <sup>2</sup> and H. L. Ma <sup>2</sup> IInstitute of Aeronautics and Astronautics, and Center for Micro/Nano Science and Technology, National Cheng Kung University, Tainan, 2Aeronautical Research Laboratory, Chung Shan Institute of Science and Technology Taichung, Taiwan
	BULK HETEROJUNCTION ORGANIC-INORGANIC PHOTOVOLTAICS EMBEDED WITH SILICON NANOWIRE ARRAYS GROWN ON INDIUM TIN OXIDE GLASS
6-8	Cheng Yung Kuo <sup>1</sup> , Chien Wei Liu <sup>2</sup> , Wei Cheng Tang <sup>1</sup> , Chen-Kai Hsu <sup>1</sup> , Chie Gau <sup>1</sup> , Bau Tong Dai <sup>2</sup> , Chung-Huang Lin <sup>3</sup> 11nstitute of Aeronautics and Astronautics, and Center for Micro/Nano Science and Technology National Cheng Kung University, Taiwan, 2National Nano Device Laboratories, Southern Region Center, Taiwan, 3Taiwan Texture Research Institute, Taiwan
	SOLAR CELL WITH AMORPHOUS SILICON THIN FILM AND SINGLE WALLED CARBON NANOTUBE
6-9	C Z Lin <sup>1</sup> , Chien Wei Liu <sup>2</sup> , H. S. Ko <sup>1</sup> , Chie Gau <sup>1</sup> , Bau Tong Dai <sup>2</sup> IInstitute of Aeronautics and Astronautics, and Center for Micro/Nano Science and Technology, National Cheng Kung University, Taiwan, 2National Nano Device Laboratories, Southern Region Center, Taiwan
	SURFACTANT FREE CdSe NANOPARTICLES MIXED MEH-PPV HYBRID THIN FILMS
6-10	Deepak Verma <sup>1</sup> and V. Dutta <sup>1</sup> Photovoltaic Laboratory, Centre for Energy Studies, Indian Institute of Technology Delhi, India
	MODELLING OF HOT CARRIER SOLAR CELL ABSORBERS
6-11	Gavin Conibeer <sup>1</sup> , Robert Patterson <sup>1</sup> , Lunmei Huang <sup>2</sup> , Jean-Francois Guillemoles <sup>2</sup> , Dirk König <sup>1</sup> , Santosh Shrestha <sup>1</sup> , Martin A. Green <sup>1</sup> 1ARC Photovoltaics Centre of Excellence, University of New South Wales, Sydney, AUSTRALIA, 2IRDEP: joint CNRS-EDF- ENSCP, France
6-12	INFLUENCE OF SILVER NANOPARTICLES ON THE SPECTRAL RESPONSE OF SILICON SOLAR CELLS

	G. D. K. Mahanama <sup>1,3</sup> , T.L. Temple <sup>2</sup> , D.M. Bagnall <sup>2</sup> and H. S. Reehal <sup>1</sup> 1Faculty of Engineering, Science and the Built Environment, London South Bank University, UK, 2Electronics and Computer Science, Southampton University, UK, 3Present address, Department of Physics, University of Ruhuna, Matara, Sri Lanka
6-13	STUDIES ON THE ORGANIC SOLAR CELL WITH INTERFACE MODIFICATION BASED ON THE PIN STRUCTURE
	Jianmin Tang, Weimin Shi, Juan Qin, Wenqin Zhu, Linjun Wang, Guangpu Wei School of Materials Science and Engineering, Shanghai University, China
	OPTICAL PROPERTIES OF THE TYPE-II CORE-SHELL TiO2@CdS NANORODS FOR PHOTOVOLTAIC APPLICATIONS
6-14	Kajari Das and S. K. De Department of Materials science Indian Association for the Cultivation of Science, India
	NANOPOROUS SILICON PRODUCED BY CHEMICAL ETCHING OF CO-SPUTTERING AL-SI COMPOSITE FILMS
6-15	Ke Ma <sup>1,2</sup> , Eun-Chel Cho <sup>1</sup> , Gavin Conibeer <sup>1</sup> , J.Y. Feng <sup>2</sup> and Martin A. Green <sup>1</sup> 1ARC Photovoltaics Centre of Excellence, University of New South Wales, Australia, 2Department of Materials Science and Engineering, Tsinghua University, China
6.16	COMPARISION OF RF-SPUTTERED AND SOL-GEL PROCESSED TIO2 THIN FILMS AS A COMPACT LAYER FOR DYE SENSITIZED SOLAR CELLS
6-16	Mariyappan Shanmugam, Mahdi Farrokh Baroughi and David Galipeau Department of Electrical Engineering and Computer Science, South Dakota State University, USA
	STUDY OF SWIFT HEAVY ION IRRADIATION EFFECT ON INDIUM TIN OXIDE COATED ELECTRODE IN THE DYE- SENSITIZED SOLAR CELL
6-17	Shruti Aggarwal <sup>1</sup> , Hemant Kumar Singh <sup>1</sup> , R. M. Mehra <sup>2</sup> , D.K Avasthi <sup>3</sup> 1University school of basic and applied science, Delhi, 2University of Delhi, South Campus, New Delhi, 3Inter University Accelerator Center, New Delhi
	ELECTRICAL CHARACTERIZATION OF SI-QD/SINX MULTILAYER PREPARED USING HWCVD
6-18	A.K. Panchal, D. K. Rai, C. S. Solanki Department of Energy Science & Engineering, Mumbai
	IMPROVEMENT OF ELECTRON LIFE TIME IN DYE SENSITIZED SOLAR CELLS USING TiO2: PEG AS BLOCKING LAYER
6-19	Kandasamy Prabakar, Minkyu Son, Heeje Kim Department of Electrical Engineering, Pusan National University, Korea
	EFFECT OF SPRAY DEPOSITED THIN TiO2 AND ZnO FILMS IN TIO2 DYE SENSITISED SOLAR CELL
6-20	A.Rangarao <sup>1,2</sup> and V. Dutta <sup>1</sup> 1Photovoltaic Laboratory, Centre for Energy Studies, Indian Institute of Technology Delhi, India, 2Applied Materials India Pvt. Ltd., India
	PHOTOACTIVE GLASS- C60 FULLERENE NANOCOMPOSITES: A NEW GENERATION PHOTOVOLTAIC MATERIAL
6-21	A. Ghosh, S. Balaji and R. Debnath Glass Science Section Central Glass and Ceramic Research Institute, India
	The Effect of Spacer Layer Thickness on the Properties of Quantum Dot Solar Cells
6-22	Ryuji Oshima <sup>1</sup> , Ayami Takata <sup>1,2</sup> , Yasushi Shoji <sup>1,2</sup> and Yoshitaka Okada <sup>1</sup> 1Research Center for Advanced Science and Technology (RCAST), The University of Tokyo, Japan, 2Institute of Applied Physics, University of Tsukuba, Japan
	ENERGY SELECTIVE CONTACTS FOR HOT CARRIER SOLAR CELLS
6-23	Santosh K Shrestha, Pasquale Aliberti, Gavin J Conibeer ARC Photovoltaic Centre of Excellence, University of New South Wales, Australia
	HYBRID ORGANIC-INORGANIC NANOCOMPOSITES: LINKING FILM MORPHOLOGY TO PHOTOSTABILITY
6-24	Umesh Kumar <sup>1</sup> , Kusum Kumari <sup>1,2</sup> , Shailesh N. Sharma <sup>1</sup> , V.N. Singh <sup>2</sup> , B.R. Mehta <sup>2</sup> , V.D. Vankar <sup>2</sup> , Vikram Kumar <sup>1</sup> and Rita Kakkar <sup>3</sup> 1Electronic Materials Division, National Physical Laboratory, India, 2Department of Physics, Indian Institute of Technology, India, 3Department of Chemistry, University of Delhi, India
6-25	SYNTHESIS AND CHARACTERIZATION OF LEAD SELENIDE QUANTUM DOTS FOR ORGANIC SOLAR CELL APPLICATION

	Umesh Kumar <sup>1</sup> , Shailesh N. Sharma <sup>1</sup> and Rita Kakkar <sup>2</sup> 1Electronic Materials Division, National Physical Laboratory, India, 2Department of Chemistry, University of Delhi, India
6-26	SYNTHESIS OF SINGLE-WALL CARBON NANOTUBES FOR PHOTOVOLTAIC DEVICES
	Sudip Adhikari <sup>1</sup> , Golap Kalita <sup>2</sup> , Hare Ram Aryal <sup>2</sup> , Dilip Chandra Ghimire <sup>1</sup> , Ishwor Khatri <sup>3</sup> , Tetsuo Soga <sup>3</sup> , Masayoshi Umeno <sup>1</sup> 1Department of Electronics and Information Engineering, Chubu University, 2Department of Electrical and Electronic Engineering, Chubu University, Japan, 3Graduate School of Electronics Engineering, Nagoya Institute of Technology, Japan
6-27	EFFECT OF CuPc-Ag AND CuPc-Al INTERFACE IN EXCITON DISSOCIATION
	Suman Banerjee <sup>1</sup> , Anukul P. Parhi <sup>1</sup> , Satyendra Kumar <sup>1</sup> , and S. Sunder Kumar Iyer <sup>2</sup> 1Department of Physics, 2Department of Electrical Engineering, India
6-28	PLASMONICS FOR PHOTOVOLTAIC APPLICATIONS
	Supriya Pillai <sup>1</sup> , Kylie R. Catchpole <sup>2</sup> , Martin A. Green <sup>1</sup> 1ARC Photovoltaics Centre of Excellence, University of New South Wales, Australia, 2Centre for Sustainable Enelgy Systems, Australian National University, Australia
	ALLIGNMENT OF SILICON NANOCRYSTALS/P3HT BULK HETEROJUNCTION IN TITANIUM DIOXIDE NANOTUBES
6-29	Vladimir Švrček, Ivan Turkevych, Michio Kondo Research Center for Photovoltaics, National Institute of Advanced Industrial Science and Technology (AIST), Japan
	FABRICATION OF InGaAs/GaNAs STRAIN-COMPENSATED QUANTUM DOT SOLAR CELL ON GaAs (311)B SUBSTRATE
6-30	Yasushi Shoji <sup>1,2</sup> , Ryuji Oshima <sup>2</sup> , Ayami Takata <sup>1,2</sup> , Akira Uedono <sup>1</sup> and Yoshitaka Okada <sup>2</sup> 1Institute of Applied Physics, University of Tsukuba, Japan, 2Research Center for Advanced Science and Technology (RCAST), The University of Tokyo, Japan
	Fabrication of p-i-n structure using Si quantum dots/amorphous Si carbide superlattice
6-31	Yasuyoshi Kurokawa <sup>1</sup> , Shigeki Tomita <sup>1</sup> , Shinsuke Miyajima <sup>1</sup> , Akira Yamada <sup>1,2</sup> , and Makoto Konagai <sup>1,2</sup> 1Department of Physical Electronics, Tokyo Institute of Technology, Japan, 2Photovoltaics Research Center (PVREC), Tokyo Institute of Technology, Japan
	A GENERIC ANODE STRUCTURE FOR PHOTOCURRENT ENHANCEMENT IN A POLYMER SOLAR CELL
6-32	Hsing-Wang Tsai <sup>1</sup> , Zingway Pei <sup>2</sup> , Yi-Jen Chan <sup>1,3</sup> , Tarng-Shiang Hu <sup>3</sup> and Chin-Chin Tsai <sup>3</sup> 1Department of Electrical Engineering, National Central University, Taiwan, 2Graduate Institute of Optoelectronic Engineering, Department of Electrical Engineering, National Chung Hsing University, Taiwan, 3Electronics and Optoelectronics Research laboratories, Industrial Technology Research Institute, Taiwan
	EFFECT OF AREA VARIATION ON ORGANIC SOLAR CELL PERFORMANCE
6-33	Ruchi Choudhary, S.S.K. Iyer Department of Electrical Engineering and Samtel Centre for Display Technologies Indian Institute of Technology, India
	SYNTHESIS OF ZINC OXIDE NANOPARTICLES USING CONTINUOUS SPRAY PYROLYSIS REACTOR
6-34	V. Dutta, Venkata Phanikaran B. and Charu Dwivedi Photovoltaic Laboratory, Centre for Energy Studies, Indian Institute of Technology Delhi, India
Area 7: 1	▲Back to TOP PV Programs, Policies, Economics and Environmental Issues:
	U.S. DEPARTMENT OF ENERGY SOLAR PROGRAM: 2008 AND BEYOND
7-1	Marie K. Mapes <sup>1</sup> 1U.S. Department of Energy Solar Energy Technologies Program, United States
7-2	CURRENT STATUS AND PROSPECTS OF PV MARKET IN JAPAN: NEW FRAMEWORK TOWARDS ACHIEVING A SOLAR SOCIETY
	Izumi KAIZUKA, Takashi OHIGASHI, Hiroshi MATSUKAWA and Osamu IKKI RTS Corporation, Japan
	Development of Semiconductor Quantum Nanostructures at Chulalongkorn University
7-3	S. Panyakeow The Semiconductor Device Research Laboratory (SDRL), CoE Nanotechnology Center of Thailand, Department of Electrical Engineering, Faculty of Engineering, Chulalongkorn University, Thailand
7-4	PHOTOVOLTAICS EDUCATION FOR THE ASIA-PACIFIC REGION

	R. Corkish <sup>1</sup> 1School of Photovoltaic and Renewable Energy Engineering, University of New South Wales, Australia	
7-5	ROLE OF NEXT GENERATION PV CELLS IN THE KOREA'S NATIONAL VISION OF "LOW CARBON, GREEN GRWOTH"	
	Jinsoo Song Department of New & Renewable Energy Research, Solar Energy Center, Korea Institute of Energy Research, Korea	
7-6	WORLD BANK GROUP SUPPORT FOR ACCELERATING CLEAN TECHNOLOGY COMMERCIALIZATION	
	Dr. Anil Cabraal, Lead Energy Specialist The World Bank Energy, Transport and Water Department, USA	
7-7	A SUSTAINABLE PHOTOVOLTAIC ROADMAP AND POLICY INITIATIVE FOR GUJARAT, INDIA	
	Omkar Jani <sup>1</sup> , John Byrne <sup>2</sup> , Manu Mathai <sup>2</sup> , Ashok Kumar <sup>2</sup> , Vagmin Buch <sup>3</sup> , 1Kanoda Inc., USA, 2Center for Energy and Environmental Policy, University of Delaware, USA, 3Gujarat Energy Development Agency (GEDA), India	
7-8	ANALYSIS OF FACTORS FOR DISSEMINATING RESIDENTIAL PV SYSTEMS IN JAPAN	
	ENDO Eiichi National Institute of Advanced Industrial Science and Technology (AIST), Japan	
	PRESENT STATUS OF SPACE PHOTOVOLTAIV DEVELOPMENT AT THE EUROPEAN SPACE AGENCY	
7-9	Lothar Gerlach European Space Agency, ESTEC, Netherlands	
	TRENDS IN PHOTOVOLTAIC APPLICATIONS – LATEST RESULTS FROM THE IEA PVPS PROGRAMME SURVEYS	
7-10	Gregory Watt <sup>1</sup> , Izumi Kaizuka <sup>2</sup> , Pius Hüsser <sup>3</sup> , Paul Cowley <sup>4</sup> and Roland Bründlinger <sup>5</sup> 1Energy Futures Australia, 2RTS Corporation, Japan, 3Novaenergie, Switzerland, 4SEI, UK, 5Arsenal Research, Austria	
▲ Back to TOP		
Area 8: I	v Architecture and r v systems:	
	Actual Energy Pricing: Coal based thermal power plant vis-a-vis Solar PV Power Plant.	
8-1	Actual Energy Pricing: Coal based thermal power plant vis–a–vis Solar PV Power Plant. S. P. Gon Chaudhuri	
8-1	Actual Energy Pricing: Coal based thermal power plant vis–a–vis Solar PV Power Plant. S. P. Gon Chaudhuri AN INTRODUCTION OF HOKUTO MEGA-SOLAR PROJECT AND SOME RESULTS IN THE FIRST STAGE	
8-1 8-2	Actual Energy Pricing: Coal based thermal power plant vis–a–vis Solar PV Power Plant.         S. P. Gon Chaudhuri         AN INTRODUCTION OF HOKUTO MEGA-SOLAR PROJECT AND SOME RESULTS IN THE FIRST STAGE         Hiroo Konishi, Ryo Tanaka, and Shinya Takagi         Solar project Headquarters, NTT FACILITIES, INC, Japan	
8-1 8-2	Actual Energy Pricing: Coal based thermal power plant vis–a–vis Solar PV Power Plant.         S. P. Gon Chaudhuri         AN INTRODUCTION OF HOKUTO MEGA-SOLAR PROJECT AND SOME RESULTS IN THE FIRST STAGE         Hiroo Konishi, Ryo Tanaka, and Shinya Takagi         Solar project Headquarters, NTT FACILITIES, INC, Japan         AN IMPROVEMENT OF PV-HYDRO TURBINE ENERGY UTILIZATION IN HIGHLAND THAILAND	
8-1 8-2 8-3	Actual Energy Pricing: Coal based thermal power plant vis–a–vis Solar PV Power Plant.         S. P. Gon Chaudhuri         AN INTRODUCTION OF HOKUTO MEGA-SOLAR PROJECT AND SOME RESULTS IN THE FIRST STAGE         Hiroo Konishi, Ryo Tanaka, and Shinya Takagi         Solar project Headquarters, NTT FACILITIES, INC, Japan         AN IMPROVEMENT OF PV-HYDRO TURBINE ENERGY UTILIZATION IN HIGHLAND THAILAND         W.Muangjai <sup>1</sup> , J.Thongpron <sup>1</sup> , T.Somsak <sup>2</sup> , N.Ruangrotsin <sup>2</sup> IRajamangala University of Technology Lanna, Thailand, 2King Mongkut's University of Technology Thonburi, Thailand	
8-1 8-2 8-3	Actual Energy Pricing: Coal based thermal power plant vis–a–vis Solar PV Power Plant.         S. P. Gon Chaudhuri         AN INTRODUCTION OF HOKUTO MEGA-SOLAR PROJECT AND SOME RESULTS IN THE FIRST STAGE         Hiroo Konishi, Ryo Tanaka, and Shinya Takagi         Solar project Headquarters, NTT FACILITIES, INC, Japan         AN IMPROVEMENT OF PV-HYDRO TURBINE ENERGY UTILIZATION IN HIGHLAND THAILAND         W.Muangjai <sup>1</sup> , J.Thongpron <sup>1</sup> , T.Somsak <sup>2</sup> , N.Ruangrotsin <sup>2</sup> IRajamangala University of Technology Lanna, Thailand, 2King Mongkut's University of Technology Thonburi, Thailand         MAXIMUM POWER POINT ESTIMATION OF A PHOTOVOLTAIC FIELD BASED ON NEURO-FUZZY APPROACH	
8-1 8-2 8-3 8-4	Actual Energy Pricing: Coal based thermal power plant vis-a-vis Solar PV Power Plant.       S. P. Gon Chaudhuri         S. P. Gon Chaudhuri       AN INTRODUCTION OF HOKUTO MEGA-SOLAR PROJECT AND SOME RESULTS IN THE FIRST STAGE         Hiroo Konishi, Ryo Tanaka, and Shinya Takagi       Solar project Headquarters, NTT FACILITIES, INC, Japan         AN IMPROVEMENT OF PV-HYDRO TURBINE ENERGY UTILIZATION IN HIGHLAND THAILAND       W.Muangjai <sup>1</sup> , J.Thongpron <sup>1</sup> , T.Somsak <sup>2</sup> , N.Ruangrotsin <sup>2</sup> IRajamangala University of Technology Lanna, Thailand, 2King Mongkut's University of Technology Thonburi, Thailand       MAXIMUM POWER POINT ESTIMATION OF A PHOTOVOLTAIC FIELD BASED ON NEURO-FUZZY APPROACH         Aymen Chaouachi <sup>1</sup> , Marwan Dharmin <sup>1</sup> , Ken Nagasaka <sup>1</sup> IDepartment of Electronic and Information Engineering, Tokyo University of Agriculture and Technology, Japan	
8-1 8-2 8-3 8-4	Actual Energy Pricing: Coal based thermal power plant vis-a-vis Solar PV Power Plant.S. P. Gon ChaudhuriAN INTRODUCTION OF HOKUTO MEGA-SOLAR PROJECT AND SOME RESULTS IN THE FIRST STAGEHiroo Konishi, Ryo Tanaka, and Shinya Takagi Solar project Headquarters, NTT FACILITIES, INC, JapanAN IMPROVEMENT OF PV-HYDRO TURBINE ENERGY UTILIZATION IN HIGHLAND THAILANDW.Muangjai <sup>1</sup> , J.Thongpron <sup>1</sup> , T.Somsak <sup>2</sup> , N.Ruangrotsin <sup>2</sup> IRajamangala University of Technology Lanna, Thailand, 2King Mongkut's University of Technology Thonburi, ThailandMAXIMUM POWER POINT ESTIMATION OF A PHOTOVOLTAIC FIELD BASED ON NEURO-FUZZY APPROACH Aymen Chaouachi <sup>1</sup> , Marwan Dharmin <sup>1</sup> , Ken Nagasaka <sup>1</sup> IDepartment of Electronic and Information Engineering, Tokyo University of Agriculture and Technology, JapanROLE OF PHOTOVOLTAIC IN ENVIRONMENTALLLY SUSTAINABLE TOURISM: A CONCEPTUAL STUDY	
8-1 8-2 8-3 8-4 8-5	Actual Energy Pricing: Coal based thermal power plant vis-a-vis Solar PV Power Plant.S. P. Gon ChaudhuriAN INTRODUCTION OF HOKUTO MEGA-SOLAR PROJECT AND SOME RESULTS IN THE FIRST STAGEHiroo Konishi, Ryo Tanaka, and Shinya Takagi Solar project Headquarters, NTT FACILITIES, INC, JapanAN IMPROVEMENT OF PV-HYDRO TURBINE ENERGY UTILIZATION IN HIGHLAND THAILANDW.Muangjai <sup>1</sup> , J.Thongpron <sup>1</sup> , T.Somsak <sup>2</sup> , N.Ruangrotsin <sup>2</sup> IRajamangala University of Technology Lanna, Thailand, 2King Mongkut's University of Technology Thonburi, ThailandMAXIMUM POWER POINT ESTIMATION OF A PHOTOVOLTAIC FIELD BASED ON NEURO-FUZZY APPROACHAymen Chaouachi <sup>1</sup> , Marwan Dharmin <sup>1</sup> , Ken Nagasaka <sup>1</sup> IDepartment of Electronic and Information Engineering, Tokyo University of Agriculture and Technology, JapanROLE OF PHOTOVOLTAIC IN ENVIRONMENTALLY SUSTAINABLE TOURISM: A CONCEPTUAL STUDY S. Bardhan <sup>1</sup> and B. Ghosh <sup>2</sup> IDept. of Architecture, 2Advanced Materials and Solar PV Division, School of Energy Studies, Jadavpur University, India	
8-1 8-2 8-3 8-4 8-5	Actual Energy Pricing: Coal based thermal power plant vis-a-vis Solar PV Power Plant.S. P. Gon ChaudhuriAN INTRODUCTION OF HOKUTO MEGA-SOLAR PROJECT AND SOME RESULTS IN THE FIRST STAGEHiroo Konishi, Ryo Tanaka, and Shinya Takagi Solar project Headquarters, NTT FACILITIES, INC, JapanAN IMPROVEMENT OF PV-HYDRO TURBINE ENERGY UTILIZATION IN HIGHLAND THAILANDW.Muangjai <sup>1</sup> , J.Thongpron <sup>1</sup> , T.Somsak <sup>2</sup> , N.Ruangrotsin <sup>2</sup> IRajamangala University of Technology Lanna, Thailand, 2King Mongkut's University of Technology Thonburi, ThailandMAXIMUM POWER POINT ESTIMATION OF A PHOTOVOLTAIC FIELD BASED ON NEURO-FUZZY APPROACH Aymen Chaouachi <sup>1</sup> , Marwan Dharmin <sup>1</sup> , Ken Nagasaka <sup>1</sup> IDepartment of Electronic and Information Engineering, Tokyo University of Agriculture and Technology, JapanROLE OF PHOTOVOLTAIC IN ENVIRONMENTALLY SUSTAINABLE TOURISM: A CONCEPTUAL STUDY S. Bardhan <sup>1</sup> and B. Ghosh <sup>2</sup> IDept. of Architecture, 2Advanced Materials and Solar PV Division, School of Energy Studies, Jadavpur University, IndiaTESTING, PERFORMANCE MONITORING AND EVALUATION OF CHARGE CONTROLLER FOR SOLAR HOME LIGHTING SYSTEMS	
8-1 8-2 8-3 8-4 8-5 8-6	Actual Energy Pricing: Coal based thermal power plant vis-a-vis Solar PV Power Plant.S. P. Gon ChaudhuriAN INTRODUCTION OF HOKUTO MEGA-SOLAR PROJECT AND SOME RESULTS IN THE FIRST STAGEHiroo Konishi, Ryo Tanaka, and Shinya Takagi Solar project Headquarters, NTT FACILITIES, INC, JapanAN IMPROVEMENT OF PV-HYDRO TURBINE ENERGY UTILIZATION IN HIGHLAND THAILANDW.Muangjai <sup>1</sup> , J.Thongpron <sup>1</sup> , T.Somsak <sup>2</sup> , N.Ruangrotsin <sup>2</sup> IRajamangala University of Technology Lanna, Thailand, 2King Mongkut's University of Technology Thonburi, ThailandMAXIMUM POWER POINT ESTIMATION OF A PHOTOVOLTAIC FIELD BASED ON NEURO-FUZZY APPROACHAymen Chaouachi <sup>1</sup> , Marwan Dharmin <sup>1</sup> , Ken Nagasaka <sup>1</sup> IDepartment of Electronic and Information Engineering, Tokyo University of Agriculture and Technology, JapanROLE OF PHOTOVOLTAIC IN ENVIRONMENTALLY SUSTAINABLE TOURISM: A CONCEPTUAL STUDY S. Bardhan <sup>1</sup> and B. Ghosh <sup>2</sup> IDept. of Architecture, 2Advanced Materials and Solar PV Division, School of Energy Studies, Jadavpur University, IndiaTESTING, PEFFORMANCE MONITORING AND EVALUATION OF CHARGE CONTROLLER FOR SOLAR HOME LIGHTING SYSTEMSDeepak Verma <sup>1</sup> , V.Dutta <sup>1</sup> and O.S. Sastry <sup>2</sup> , IPhotovoltaic Laboratory, Centre for Energy Studies, Indian Institute of Technology Delhi, India, 2Solar Energy Centre, Ministry of New Renewable Energy Sources, India	
8-1 8-2 8-3 8-4 8-5 8-6	Actual Energy Pricing: Coal based thermal power plant vis-a-vis Solar PV Power Plant.S. P. Gon ChaudhuriAN INTRODUCTION OF HOKUTO MEGA-SOLAR PROJECT AND SOME RESULTS IN THE FIRST STAGEHiroo Konishi, Ryo Tanaka, and Shinya Takagi Solar project Headquarters, NTT FACILITIES, INC, JapanAN IMPROVEMENT OF PV-HYDRO TURBINE ENERGY UTILIZATION IN HIGHLAND THAILANDW.Muangjai <sup>1</sup> , J.Thongpron <sup>1</sup> , T.Somsak <sup>2</sup> , N.Ruangrotsin <sup>2</sup> IRajamangala University of Technology Lanna, Thailand, 2King Mongkut's University of Technology Thonburi, ThailandMAXIMUM POWER POINT ESTIMATION OF A PHOTOVOLTAIC FIELD BASED ON NEURO-FUZZY APPROACHAymen Chaouachi <sup>1</sup> , Marwan Dharmin <sup>1</sup> , Ken Nagasaka <sup>1</sup> 1Department of Electronic and Information Engineering, Tokyo University of Agriculture and Technology, JapanROLE OF PHOTOVOLTAIC IN ENVIRONMENTALLY SUSTAINABLE TOURISM: A CONCEPTUAL STUDYS. Bardhan <sup>1</sup> and B. Ghosh <sup>2</sup> 1Dept. of Architecture, 2Advanced Materials and Solar PV Division, School of Energy Studies, Jadavpur University, IndiaTESTING, PERFORMANCE MONITORING AND EVALUATION OF CHARGE CONTROLLER FOR SOLAR HOME LIGHTING SYSTEMSDeepak Verma <sup>1</sup> , V.Dutta <sup>1</sup> and O.S. Sastry <sup>2</sup> , Photovoltaic Laboratory, Centre for Energy Studies, Indian Institute of Technology Delhi, India, 2Solar Energy Centre, Ministry of New Renewable Energy Sources, IndiaAPV MOBILE UNIT FOR MULTIPURPOSE RURAL APPLICATIONS	
8-1 8-2 8-3 8-4 8-5 8-5 8-6 8-7	Actual Energy Pricing: Coal based thermal power plant vis-a-vis Solar PV Power Plant.         S. P. Gon Chaudhuri         AN INTRODUCTION OF HOKUTO MEGA-SOLAR PROJECT AND SOME RESULTS IN THE FIRST STAGE         Hiroo Konishi, Ryo Tanaka, and Shinya Takagi         Solar project Headquarters, NTT FACILITIES, INC, Japan         AN IMPROVEMENT OF PV-HYDRO TURBINE ENERGY UTILIZATION IN HIGHLAND THAILAND         W.Muangjai <sup>1</sup> , J.Thongpron <sup>1</sup> , T.Somsak <sup>2</sup> , N.Ruangrotsin <sup>2</sup> IRajamangala University of Technology Lanna, Thailand, 2King Mongkut's University of Technology Thonburi, Thailand         MAXIMUM POWER POINT ESTIMATION OF A PHOTOVOLTAIC FIELD BASED ON NEURO-FUZZY APPROACH         Aymen Chaouachi <sup>1</sup> , Marwan Dharmin <sup>1</sup> , Ken Nagasaka <sup>1</sup> IDepartment of Electronic and Information Engineering, Tokyo University of Agriculture and Technology, Japan         RELOF PHOTOVOLTAIC IN ENVIRONMENTALLY SUSTAINABLE TOURISM: A CONCEPTUAL STUDY         S. Bardhan <sup>1</sup> and B. Ghosh <sup>2</sup> IDept. of Architecture, 2Advanced Materials and Solar PV Division, School of Energy Studies, Jadavpur University, India         TESTING, PERFORMANCE MONITORING AND EVALUATION OF CHARGE CONTROLLER FOR SOLAR HOME         LIGHTING SYSTEMS         Deepak Verma <sup>1</sup> , V.Dutta <sup>1</sup> and O.S. Sastry <sup>2</sup> ,         Photovolatic Laboratory, Centre for Energy Studies, Indian Institute of Technology Delhi, India, 2Solar Energy Centre, Ministry of New Renewable Energy Sources, India         APV MOBILE LUNIT FOR MULTIPURPOSE RURAL APPLICATIONS      <	

	Patrick Dupeyrat <sup>1</sup> , Matthias Rommel <sup>1</sup> , Christophe Ménézo <sup>2,3</sup> , Gérald Kwiatkowski <sup>4</sup> and Didier Binesti <sup>4</sup> 1Fraunhofer ISE, Freiburg, Germany, 2LOCIE Univ. de Savoie, Savoie Technolac, France, 3CETHIL, CNRS/INSA/UCB Lyon, France 4. EDF R&D - EnerBAT, France
8-9	A SIMPLE MODIFICATION OF DC POWER SUPPLY FOR PV GRID-CONNECTED INVERTER TESTING Ballang Muenpinij <sup>1</sup> , Chamnan Limsakul <sup>1</sup> , Dhirayut Chenvidhya <sup>1</sup> and Anawach Sangswang <sup>2</sup> 1CES Solar Cells Testing Center, 2Department of Electrical Engineering King Mongkut's University of Technology Thonburi, Thailand
8-10	IMPACT OF ADJACENT BUILDING - WALL ON THE BUILDING INTEGRATED PHOTO VOLTAIC SYSTEMS K.Kunda (Ghosh) <sup>2</sup> and B.Ghosh 1Advanced Materials & Solar Photovoltaic Division, School of Energy Studies, Jadavpur University, Kolkata, 2Department of Electrical Engineering, Jadavpur University, Kolkata
8-11	Maximum Power Point Tracking of Solar Photovoltaic Module Under Partial Shading Anuradha Kar Department of Electronics & Communication Engineering Academy of Technology, India
8-12	MAXIMUM POWER POINT TRACKING OF PHOTOVOLTAIC ARRAYS USING ADAPTIVE PERCEPTIVE PARTICLE SWARM OPTIMIZATION TECHNIQUE Shubhajit Roy Chowdhury <sup>1</sup> , Hiranmay Saha <sup>1</sup> , 1IC Design and Fabrication Centre, Department of Electronics and Telecommunication Engineering, Jadavpur University, India
8-13	SOLAR PV MPP TRACKING ALGORITHM FOR SKIRTING LOCAL MAXIMA UNDER NOMINAL PARTIAL SHADING Nivedita Dasgupta <sup>1</sup> and Ashok K. Mukerjee <sup>2</sup> 1Previously with Solar Energy Centre, Ministry of New and Renewable Energy, India Currently with The Energy and Resources Institute, New Delhi, 2Centre for Energy Studies, Indian Institute of Technology Delhi, India
8-14	STATUS OF SOLAR HOME SYSTEM IN HIGHLAND REMOTE AREA THAILAND Teerasak Somsak, Chartchai Ngamsom, Chanarong Piton and Bavornsak Pedjaranon Pilot Plant Development and Training Institute, King Mongkut's University of Technology Thonburi, Bangkok
<b>Back to Previ</b>	ous Page