PROGRESS IN PHOTOVOLTAICS: RESEARCH AND APPLICATIONS

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LITERATURE SURVEY

Photovoltaics literature survey (no. 111)

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In order to help keep readers up-to-date in the field each issue of *Progress in Photovoltaics* will contain a list of recently published journal articles most relevant to its aims and scope. This list is drawn from an extremely wide range of journals, including *IEEE Transactions on Electron Devices*, *Journal of Applied Physics*, *Applied Physics Letters, Progress in Photovoltaics* and *Solar Energy Materials and Solar Cells*. To assist the reader, the list is separated into broad categories, but please note that these classifications are by no means strict. Also note that inclusion in the list is not an endorsement of a paper's quality. If you have any suggestions please email Santosh Shrestha at s.shrestha@unsw.edu.au.

1. FUNDAMENTALS, NEW APPROACHES, AND REVIEWS

Mathew S, Yella A, Gao P, *et al.* Dye-sensitized solar cells with 13% efficiency achieved through the molecular engineering of porphyrin sensitizers. *Nature Chemistry* 2014; 6(3): 242–247.

 $\label{lam.part} Lan~XZ,~Masala~S,~Sargent~EH.~{\bf Charge-extraction~strategies~for~colloidal~quantum~dot~photovoltaics.}~Nature~Materials~2014;~{\bf 13} \mbox{(3)}:~233-240.$

Wang J, Deng RR, MacDonald MA, et al. Enhancing multiphoton upconversion through energy clustering at sublattice level. *Nature Materials* 2014; **13**(2): 157–162.

Lenert A, Bierman DM, Nam Y, et al. A nanophotonic solar thermophotovoltaic device. Nature Nanotechnology 2014; 9(2): 126–130. Liu DY, Kelly TL. Perovskite solar cells with a planar heterojunction structure prepared using room-temperature solution processing techniques. Nature Photonics 2014; 8(2): 133–138.

Malinkiewicz O, Yella A, Lee YH, et al. Perovskite solar cells employing organic charge-transport layers. Nature Photonics 2014; 8(2): 128–132. Marchioro A, Teuscher J, Friedrich D, et al. Unravelling the mechanism of photoinduced charge transfer processes in lead iodide perovskite solar cells. Nature Photonics 2014; 8(3): 250–255.

Filippetti A, Mattoni A. Hybrid perovskites for photovoltaics: insights from first principles. *Physical Review B* 2014; **89**(12): 125203.

2. GENERAL CHARACTERISATION TECHNIQUES AND MODELLING

Christ N, Kettlitz SW, Mescher J, et al. Extracting the charge carrier mobility from the nanosecond photocurrent response of organic solar cells and photodiodes. Applied Physics Letters 2014; 104(5): 053302.

Hameiri Z, Rougieux F, Sinton R, et al. Contactless determination of the carrier mobility sum in silicon wafers using combined photoluminescence and photoconductance measurements. Applied Physics Letters 2014; 104(7): 10.1063/1.4865804.

Rath AK, Lasanta T, Bernechea M, et al. Determination of carrier lifetime and mobility in colloidal quantum dot films via impedance spectroscopy. Applied Physics Letters 2014; 104(6): 063504.

Hirai Y, Kurokawa Y, Yamada A. Numerical study of Cu(In,Ga)Se₂ solar cell performance toward 23% conversion efficiency. *Japanese Journal of Applied Physics* 2014; 53(1): 012301.

Aly AEMM, Nasr A. Theoretical performance of solar cell based on mini-bands quantum dots. *Journal of Applied Physics* 2014; **115**(11): 114311.

McCarthy RF, Hillhouse HW. A simple model for voltage-dependent carrier collection efficiency in solar cells. *Journal of Applied Physics* 2014; **115**(14): 143703.

Turek M. Current and illumination dependent series resistance of solar cells. *Journal of Applied Physics* 2014; **115**(14): 144503.

Berbezier A, Michelini F. Quantum photovoltaics in wire-dot-wire junctions. *Journal of Renewable and Sustainable Energy* 2014; 6(1): 10.1063/1.4828363.

Cavassilas N, Michelini F, Bescond M. Modeling of nanoscale solar cells: The Green's function formalism. *Journal of Renewable and Sustainable Energy* 2014; **6**(1): 10.1063/1.4828366.

Sandhu S, Yu ZF, Fan SH. Detailed Balance Analysis and Enhancement of Open-Circuit Voltage in Single-Nanowire Solar Cells. *Nano Letters* 2014; **14**(2): 1011–1015.

Riedel I, Keller J, Parisi J, *et al.* One-dimensional simulation of sequentially processed Cu(In-1 Ga--(x)x)(Se-1 S--(y)y)(2) heterojunction solar cells with vertically graded absorber composition. *Physica B* 2014; **439**: 9–13.

3. CRYSTALLINE SILICON - BULK CELLS AND TECHNOLOGY

Shen L, Liang ZC, Liu CF, et al. Optimization of oxidation processes to improve crystalline silicon solar cell emitters. AIP Advances 2014; 4(2): 027127.

Battaglia C, de Nicolas SM, De Wolf S, et al. Silicon heterojunction solar cell with passivated hole selective MoO_x contact. Applied Physics Letters 2014; **104**(11): 11390.

Fidaner O, Suarez FA, Wiemer M, et al. High efficiency micro solar cells integrated with lens array. Applied Physics Letters 2014; 104 (10): 103902.

Kegel J, Angermann H, Sturzebecher U, et al. Over 20% conversion efficiency on silicon heterojunction solar cells by IPA-free substrate texturization. Applied Surface Science 2014; 301:56–62.

Liang L, Li ZG, Cheng LK, et al. Current Conduction Mechanism of Front-Side Contact of N-Type Crystalline Si Solar Cells With Ag/Al Pastes. IEEE Journal of Photovoltaics 2014; 4(2): 549–553.

Lujia X, Weber K, Fell A, et al. The Impact of SiO₂/SiN_x Stack Thickness on Laser Doping of Silicon Solar Cell. *IEEE Journal of Photovoltaics* 2014; 4(2): 594–600.

Rudiger M, Steinkemper H, Hermle M, et al. Numerical Current Density Loss Analysis of Industrially Relevant Crystalline Silicon Solar Cell Concepts. IEEE Journal of Photovoltaics 2014: 4(2): 533–539.

Werner F, Larionova Y, Zielke D, et al. Aluminum-oxide-based inversion layer solar cells on n-type crystalline silicon: Fundamental properties and efficiency potential. *Journal of Applied Physics* 2014: 115(7): 073702.

Liu Y, Das A, Lin ZY, *et al.* Hierarchical robust textured structures for large scale self-cleaning black silicon solar cells. *Nano Energy* 2014; **3**: 127–133.

Zhou S, Zhou C, Wang W, et al. Comprehensive study of light induced plating of nickel and its effect on large area laser doped crystalline solar cells. Solar Energy Materials and Solar Cells 2014; 125(0): 33-38.

4. THIN FILM, AMORPHOUS AND MICRO/ NANO-CRYSTALLINE SILICON, HETEROJUNCTION CELLS

De Jong MM, Sonneveld PJ, Baggerman J, et al. Utilization of Geometric Light Trapping in Thin Film Silicon Solar Cells: Simulations and Experiments, Progress in Photovoltaics: Research and Applications 2013; 22(5): 525-539.

Jing L, Xinshuai Z, Gangqiang D, et al. The performances of silicon solar cell with core-shell p-n junctions of micro-nano pillars fabricated by cesium chloride self-assembly and dry etching. Applied Physics A 2014: 114(4): 1175-117.

Hong L, Wang XC, Zheng HY, et al. High efficiency silicon nanohole/organic heterojunction hybrid solar cell. Applied Physics Letters 2014; 104(5): 10.1063/1.4863965.

Paetzold UW, Smeets M, Meier M, et al. Disorder improves nanophotonic light trapping in thin-film solar cells. Applied Physics Letters 2014; 104(13); 131102.

Baral JK, Sharma A, Wang D, et al. Enhanced photovoltaic conversion efficiency in bulk heterojunction solar cells upon incorporating nanohybridized PbS quantum dots/multiwall carbon nanotubes. Furopean Physical Journal - Applied Physics 2014; 65(1): 10201.

Bivour M, Reusch M, Schroer S, et al. Doped Layer Optimization for Silicon Heterojunctions by Injection-Level-Dependent Open-Circuit Voltage Measurements. IEEE Journal of Photovoltaics 2014; 4(2): 566-574. Kayes BM, Ling Z, Twist R, et al. Flexible thin-film tandem solar cells with 30% efficiency. IEEE Journal of Photovoltaics 2014; 4(2): 729-733. Spinelli P, Polman A. Light trapping in thin crystalline si solar cells using surface Mie scatterers. IEEE Journal of Photovoltaics 2014; 4(2): 554-559

Bozzola A, Kowalczewski P, Andreani LC. Towards high efficiency thin-film crystalline silicon solar cells: the roles of light trapping and non-radiative recombinations. Journal of Applied Physics 2014; 115(9):

Thiyagu S, Hsueh CC, Liu CT, et al. Hybrid organic-inorganic heterojunction solar cells with 12% efficiency by utilizing flexible filmsilicon with a hierarchical surface. Nanoscale 2014; 6(6): 3361-3366

Yang Z, Hong L, Ye Q, et al. Enhanced carrier extraction of a-Si/c-Si solar cells by nanopillar-induced optical modulation. Nanotechnology 2014; 25(13): 135202.

Abdul Hadi S, Hashemi P, DiLello N, et al. Thin-film Si1 - xGex HIT solar cells. Solar Energy 2014; 103(0): 154-159.

5. ORGANIC AND HYBRID CELLS

Aiyuan L, Riming N, Xianyu D, et al. Highly efficient inverted organic solar cells using amino acid modified indium tin oxide as cathode. Applied Physics Letters 2014; 104(12): 123303.

Lei H, Xincai W, Hongyu Z, et al. High efficiency silicon nanohole/organic heterojunction hybrid solar cell. Applied Physics Letters 2014: 104(5): 053104.

Ting S, Xiaoguang Z, Guoli T. Efficient inverted polymer solar cells based on ultrathin aluminum interlayer modified aluminum-doped zinc oxide electrode. Applied Physics Letters 2014; 104(10): 103901.

Fernando K, Pandit B, Liu JJ, et al. Charge transfer in rare earth oxide hybrid solar cells. Chemical Physics Letters 2014; 592: 155-159.

Dimitrov SD, Durrant JR, Materials Design Considerations for Charge Generation in Organic Solar Cells. Chemistry of Materials 2014; 26(1):

Yang SP, Zhang Y, Jiang T, et al. Enhancing the power conversion efficiency of PCDTBT:PC71BM polymer solar cells using a mixture of solvents. Chinese Science Bulletin 2014; 59(3): 297-300.

Wang CL, Hu JY, Wu CH, et al. Highly efficient porphyrin-sensitized solar cells with enhanced light harvesting ability beyond 800 nm and efficiency exceeding 10%. Energy & Environmental Science 2014; 7(4): 1392-1396.

Miyadera T, Zhiping W, Yamanari T, et al. Efficiency limit analysis of organic solar cells: model simulation based on vanadyl phthalocyanine/C60 planar junction cell. Japanese Journal of Applied Physics 2014; 53(1S): 01AB12.

Raba A, Leroy Y, Cordan AS. Organic solar cells: a rigorous model of the donor-acceptor interface for various bulk heterojunction morphologies. Journal of Applied Physics 2014; 115(5): 054508.

Chao YC, Lin YH, Lin CY, et al. Improved light trapping in polymer solar cells by light diffusion ink. Journal of Physics D 2014; 47(10): 10.1088/0022-3727/47/10/105102.

Huang ZY, Chiu SW, Chen CW, et al. Spontaneous formation of light-trapping nano-structures for top-illumination organic solar cells. Nanoscale 2014; 6(4): 2316-2320

Yusoff ARB, Kim HP, Jang J. High performance organic photovoltaics with zinc oxide and graphene oxide buffer layers. Nanoscale 2014; 6 (3): 1537-1544.

6. PHOTOELECTROCHEMICAL CELLS

Maggio E. Solomon GC. Troisi A. Exploiting Quantum Interference in Dye Sensitized Solar Cells. Acs Nano 2014; 8(1): 409-418

Fakharuddin A, Ahmed I, Khalidin Z, et al. Channeling of electron transport to improve collection efficiency in mesoporous titanium dioxide dye sensitized solar cell stacks. Applied Physics Letters 2014; 104(5):

Yun-San C, Po-Yu Y, Lee IC, et al. Enhanced efficiency of the dyesensitized solar cells by excimer laser irradiated carbon nanotube network counter electrode. Applied Physics Letters 2014; 104(5): 051114. Patil SA, Kalode PY, Mane RS, et al. Highly efficient and stable DSSCs of wet-chemically synthesized MoS2 counter electrode. Dalton Transactions 2014; 43(14): 5256-5259.

Guo KM, Li MY, Fang XL, et al. Performance enhancement in dyesensitized solar cells by utilization of a bifunctional layer consisting of core shell beta-NaYF4:Er3+/Yb3+@SiO2 submicron hexagonal prisms. Journal of Power Sources 2014; 249: 72-78.

Ribeiro F, Macaira J, Mesquita I, et al. Laser assisted dye-sensitized solar cell sealing: from small to large cells areas. Journal of Renewable and Sustainable Energy 2014; 6(1): 011208.

Agresti A, Pescetelli S, Quatela A, et al. Micro-Raman analysis of reverse bias stressed dve-sensitized solar cells. Rsc Advances 2014; 4(24): 12366-12375.

Ghanbari Niaki AH, Bakhshayesh AM, Mohammadi MR. Double-layer dye-sensitized solar cells based on Zn-doped TiO2 transparent and light scattering layers: Improving electron injection and light scattering effect. Solar Energy 2014; 103(0): 210-222.

7. CIS, CIGS, CDTE AND II-VI CELLS.

Cui HT, Liu XL, Liu FY, et al. Boosting Cu2ZnSnS4 solar cells efficiency by a thin Ag intermediate layer between absorber and back contact. Applied Physics Letters 2014; 104(4): 10.1063/1.4863951.

Fangyang L, Kaiwen S, Wei L, et al. Enhancing the Cu2ZnSnS4 solar cell efficiency by back contact modification: Inserting a thin TiB2 intermediate layer at Cu2ZnSnS4/Mo interface. Applied Physics Letters 2014; 104(5): 051105.

Kun Z, Zhenghua S, Lianbo Z, et al. Improving the conversion efficiency of Cu₂ZnSnS₄ solar cell by low pressure sulfurization. Applied Physics Letters 2014; 104(14): 141101.

Probst V. Koetschau I. Novak E. et al. A New Mass Production Technology for High-Efficiency Thin-Film CIS-Absorber Formation. IEEE Journal of Photovoltaics 2014; 4(2): 687-692.

Jun HK, Careem MA, Arof AK. Efficiency improvement of CdS and CdSe quantum dot-sensitized solar cells by TiO2 surface treatment. Journal of Renewable and Sustainable Energy 2014; 6(2): 023107.

Wan F, Tang F, Xue H, et al. Effects of defect states on the performance of CuInGaSe₂ solar cells. Journal of Semiconductors 2014; 35(2): 024011. Matsumura K, Fujita T, Itoh H, et al. Characterization of carrier concentration in CIGS solar cells by scanning capacitance microscopy. Measurement Science and Technology 2014; 25(4): 044020.

Panthani MG, Kurley JM, Crisp RW, et al. High Efficiency Solution Processed Sintered CdTe Nanocrystal Solar Cells: The Role of Interfaces. Nano Letters 2014; 14(2): 670-675.

Consonni V, Baier N, Robach O, et al. Local band bending and grain-tograin interaction induced strain nonuniformity in polycrystalline CdTe films. Physical Review B 2014; 89(3): 10.1103/PhysRevB.89.035310. Kim H, Cha K, Fthenakis VM, et al. Life cycle assessment of cadmium telluride photovoltaic (CdTe PV) systems. Solar Energy 2014; 103(0): 78-88.

8. III-V, QUANTUM WELL, QUANTUM DOT, SPACE, CONCENTRATOR AND THERMOPHOTOVOLTAIC CELLS

Bai J, Yang CC, Athanasiou M, et al. Efficiency enhancement of InGaN/GaN solar cells with nanostructures. Applied Physics Letters 2014; 104(5): 051129. Noda T, Otto LM, Elborg M, et al. GaAs/AlGaAs quantum wells with indirect-gap AlGaAs barriers for solar cell applications. Applied Physics Letters 2014: 104(12): 122102.

Arase H, Matsushita A, Itou A, et al. A Novel Thin Concentrator Photovoltaic With Microsolar Cells Directly Attached to a Lens Array. *IEEE Journal of Photovoltaics* 2014; **4**(2): 709–712.

Bradshaw GK, Samberg JP, Carlin CZ, et al. GaInP/GaAs Tandem Solar Cells With InGaAs/GaAsP Multiple Quantum Wells. *IEEE Journal of Photovoltaics* 2014; 4(2): 614–619.

Toprasertpong K, Fujii H, Wang YP, *et al.* Carrier Escape Time and Temperature-Dependent Carrier Collection Efficiency of Tunneling-Enhanced Multiple Quantum Well Solar Cells. *IEEE Journal of Photovoltaics* 2014; 4(2): 607–613.

Liu JJ, Ho WJ, Syu JK, et al. Performance improvement of a triple-junction GaAs-based solar cell using a SiO₂-nanopillar/SiO₂/TiO₂ graded-index antireflection coating. International Journal of Nanotechnology 2014; 11(1-4): 311–321.

Moore DT, Gaskey B, Robbins A, *et al.* A detailed balance analysis of conversion efficiencies limits for nanocrystal solar cells-Relating the shape of the excitonic peak to conversion efficiencies. *Journal of Applied Physics* 2014; **115**(5): 054313.

Aho A, Tukiainen A, Polojarvi V, et al. Performance assessment of multijunction solar cells incorporating GaInNAsSb. Nanoscale Research Letters 2014; 9:1–7.

Tayebi L, Zamanipour Z, Vashaee D. Design optimization of microfabricated thermoelectric devices for solar power generation. *Renewable Energy* 2014: **69**(0): 166–173.

Calabrese G, Gualdi F, Baricordi S, et al. Numerical simulation of the temperature distortions in InGaP/GaAs/Ge solar cells working under high concentrating conditions due to voids presence in the solder joint. Solar Energy 2014; 103(0): 1–11.

Kotulak NA, Diaz M, Barnett A, *et al.* Toward a tandem gallium phosphide on silicon solar cell through liquid phase epitaxy growth. *Thin Solid Films* 2014; **556**(0): 236–240.

9. INTERMEDIATE BAND, UP-CONVERSION, DOWN-CONVERSION, HOT CARRIER SOLAR CELLS

Navruz TS, Saritas M. Determination of The Optimum Material Parameters for Intermediate Band Solar Cells Using Diffusion Model, Progress in Photovoltaics: Research and Applications 2013; 22(5): 593. Sang LW, Liao MY, Liang QF, et al. A Multilevel Intermediate-Band Solar Cell by InGaN/GaN Quantum Dots with a Strain-Modulated Structure. Advanced Materials 2014; 26(9): 1414–1420.

Ramiro I, Marti A, Antolin E, *et al.* **Review of Experimental Results Related to the Operation of Intermediate Band Solar Cells.** *IEEE Journal of Photovoltaics* 2014; **4**(2): 736–748.

Yoshida M, Amrania H, Farrell DJ, et al. Progress Toward Realizing an Intermediate Band Solar Cell - Sequential Absorption of Photons in a Quantum Well Solar Cell. IEEE Journal of Photovoltaics 2014; 4(2): 634–638

Sogabe T, Kaizu T, Okada Y, et al. Theoretical analysis of GaAs/AlGaAs quantum dots in quantum wire array for intermediate band solar cell. Journal of Renewable and Sustainable Energy 2014; 6(1): 10.1063/1.4828359. Shao W, Chen GY, Damasco J, et al. Enhanced upconversion emission in colloidal (NaYF4:Er3+)/NaYF4 core/shell nanoparticles excited at 1523 nm. Optics Letters 2014; 39(6): 1386–1389.

Liao JS, Zhou D, Liu SH, *et al.* Efficient near-infrared emission in Eu3+-Yb3+-Y3+ tri-doped cubic ZrO2 via down-conversion for silicon solar cells. *Physica B* 2014; **436**:59–63.

Tex DM, Ihara T, Kamiya I, et al. Microscopic photoluminescence and photocurrent imaging spectroscopy of InAs nanostructures: Identification of photocarrier generation sites for intermediate-band solar cells. *Physical Review B* 2014; **89**(12): 10.1103/PhysRevB.89.125301.

Heshmati S, Golmohammadi S, Abedi K, *et al.* **Analysis of the efficiency of intermediate band solar cells based on quantum dot supercrystals.** *Quantum Electronics* 2014; **44**(3): 279–282.

Tex DM, Kamiya I, Kanemitsu Y. Control of hot-carrier relaxation for realizing ideal quantum-dot intermediate-band solar cells. *Scientific Reports* 2014; **4** (10.1038/srep04125.

10. TERRESTRIAL MODULES, BOS COMPONENTS, BUILDING INTEGRATED, SYSTEMS AND APPLICATIONS

Steiner M, Siefer G, Bett AW. An Investigation of Solar Cell Interconnection Schemes Within CPV Modules Using a Validated Temperature-dependent SPICE Network Model, Progress in Photovoltaics: Research and Applications 2013; 22(5):505–514.

Akwa JV, Konrad O, Kaufmann GV, et al. Evaluation of the photovoltaic generation potential and real-time analysis of the photovoltaic panel operation on a building facade in southern Brazil. Energy and Buildings 2014; 69:426–433.

Ziar H, Nouri M, Asaei B, et al. Analysis of Overcurrent Occurrence in Photovoltaic Modules With Overlapped By-Pass Diodes at Partial Shading. IEEE Journal of Photovoltaics 2014; 4(2): 713–721.

Thang TV, Thao NM, Jang JH, et al. Analysis and Design of Grid-Connected Photovoltaic Systems With Multiple-Integrated Converters and a Pseudo-DC-Link Inverter. *IEEE Transactions on Industrial Electronics* 2014; **61**(7): 3377–3386.

Konstantopoulos C, Koutroulis E. Global maximum power point tracking of flexible photovoltaic modules. *IEEE Transactions on Power Electronics* 2014; **29**(6): 2817–2828.

Li Z, Kai S, Haibing H, et al. A system-level control strategy of photovoltaic grid-tied generation systems for european efficiency enhancement. *IEEE Transactions on Power Electronics* 2014; **29**(7): 3445–3453.

Marra F, Guangya Y, Traeholt C, et al. A Decentralized Storage Strategy for Residential Feeders With Photovoltaics. IEEE Transactions on Smart Grid 2014; 5(2): 974–981.

Balasubramanian IR, Ganesan SI, Chilakapati N. **Impact of partial shading on the output power of PV systems under partial shading conditions.** *IET Power Electronics* 2014; **7**(3): 657–666.

Charles JP, Hannane F, El-Mossaoui H, et al. Faulty PV panel identification using the Design of Experiments (DoE) method. International Journal of Electrical Power & Energy Systems 2014: 57:31–38.

Albert Alexander S, Manigandan T. Digital control strategy for solar photovoltaic fed inverter to improve power quality. *Journal of Renewable and Sustainable Energy* 2014; 6(1): 013128.

Fernandez EF, Rodrigo P, Fernandez JI, et al. Analysis of high concentrator photovoltaic modules in outdoor conditions: Influence of direct normal irradiance, air temperature, and air mass. Journal of Renewable and Sustainable Energy 2014; 6(1): 10.1063/1.4861065.

Guiqiang L, Gang P, Yuehong S, et al. Improving angular acceptance of stationary low-concentration photovoltaic compound parabolic concentrators using acrylic lens-walled structure. Journal of Renewable and Sustainable Energy 2014; 6(1): 013122.

Seyedmahmoudian M, Mekhilef S, Rahmani R, et al. Maximum power point tracking of partial shaded photovoltaic array using an evolutionary algorithm: A particle swarm optimization technique. Journal of Renewable and Sustainable Energy 2014; 6(2): 023102.

La Manna D, Li Vigni V, Riva Sanseverino E, et al. Reconfigurable electrical interconnection strategies for photovoltaic arrays: A review. Renewable and Sustainable Energy Reviews 2014; 33(0): 412-426.

Moeed Amiad A. Salam Z. A review of soft computing methods for harmonics elimination PWM for inverters in renewable energy conversion systems. Renewable and Sustainable Energy Reviews 2014; 33(0): 141-153.

Bauwens P, Doutreloigne J. Reducing partial shading power loss with an integrated Smart Bypass. Solar Energy 2014; 103(0): 134-142.

Christy Mano Rai JS. Ebenezer Jevakumar A. A two stage successive estimation based maximum power point tracking technique for photovoltaic modules. Solar Energy 2014; 103(0): 43-61.

Díaz-Dorado E, Cidrás J, Carrillo C. Discrete I-V model for partially shaded PV-arrays. Solar Energy 2014: 103(0): 96-107

Ndiaye A, Kébé CMF, Charki A, et al. Degradation evaluation of crystalline-silicon photovoltaic modules after a few operation years in a tropical environment. Solar Energy 2014; 103(0): 70-77.

11. POLICY, ECONOMICS, EDUCATION, HEALTH, ENVIRONMENT AND THE SOLAR RESOURCE

Van Haaren R, Morjaria M, Fthenakis V. Empirical Assessment of Short-Term Variability from Utility-Scale Solar PV Plants, Progress in Photovoltaics: Research and Applications 2013; 22(5):548-559.

Osterwald CR, Emery KA, Muller M. Photovoltaic Module Calibration Value Versus Optical Air Mass: The Air Mass Function, Progress in Photovoltaics: Research and Applications 2013; 22(5):560-573.

Hachem C, Athienitis A, Fazio P. Energy performance enhancement in multistory residential buildings. Applied Energy 2014; 116:9-19.

Sun HH, Zhi Q, Wang YB, et al. China's solar photovoltaic industry development: The status quo, problems and approaches. Applied Energy 2014; 118:221-230.

Becker S, Rodriguez RA, Andresen GB, et al. Transmission grid extensions during the build-up of a fully renewable pan-European electricity supply. Energy 2014; 64:404-418.

Canete C, Carretero J, Sidrach-de-Cardona M. Energy performance of different photovoltaic module technologies under outdoor conditions. Energy 2014; 65:295-302.

Zhang LE Gari N Hmurcik LV Energy management in a microgrid with distributed energy resources. Energy Conversion and Management 2014; 78: 297-305.

Alafita T, Pearce JM. Securitization of residential solar photovoltaic assets: Costs, risks and uncertainty. Energy Policy 2014; 67: 488-498. Maxim A. Sustainability assessment of electricity generation technologies using weighted multi-criteria decision analysis. Energy Policy

Nugent D, Sovacool BK. Assessing the lifecycle greenhouse gas emissions from solar PV and wind energy: A critical meta-survey. Energy Policy 2014; 65:229-244.

2014: 65:284-297.

Alam MJE, Muttaqi KM, Sutanto D. An Approach for Online Assessment of Rooftop Solar PV Impacts on Low-Voltage Distribution Networks. IEEE Transactions on Sustainable Energy 2014; 5(2): 663-672.

Meshram S, Agnihotri G, Gupta S. Advanced photovoltaic/hydro hybrid renewable energy system for remote areas. Journal of Renewable and Sustainable Energy 2014; 6(1): 013140.

Yung-ho C, Tsz Yi K, Zhong-Sheng Z, et al. A performance evaluation of the cross-strait solar photovoltaic industry. Journal of Renewable and Sustainable Energy 2014; 6(1): 013133.

Brouwer AS, van den Broek M, Seebregts A, et al. Impacts of large-scale Intermittent Renewable Energy Sources on electricity systems, and how these can be modeled. Renewable and Sustainable Energy Reviews 2014; 33(0): 443-466.

Narbel PA, Hansen JP. Estimating the cost of future global energy supply. Renewable and Sustainable Energy Reviews 2014; 34(0): 91-97. Pfenninger S, Hawkes A, Keirstead J. Energy systems modeling for twenty-first century energy challenges. Renewable and Sustainable Energy Reviews 2014; 33(0): 74-86.

Romero JC, Linares P. Exergy as a global energy sustainability indicator. A review of the state of the art. Renewable and Sustainable Energy Reviews 2014; 33(0): 427-442.

Veena P, Indragandhi V, Jeyabharath R, et al. Review of grid integration schemes for renewable power generation system. Renewable and Sustainable Energy Reviews 2014; 34(0): 628-641.

Lee M, Soto D, Modi V. Cost versus reliability sizing strategy for isolated photovoltaic micro-grids in the developing world. Renewable Energy 2014; 69(0): 16-24.

Zyadin A, Halder P, Kähkönen T, et al. Challenges to renewable energy: A bulletin of perceptions from international academic arena. Renewable Energy 2014; 69(0): 82-88.

Kaabeche A, Ibtiouen R. Techno-economic optimization of hybrid photovoltaic/wind/diesel/battery generation in a stand-alone power system. Solar Energy 2014; 103(0): 171-182.

Makrides G, Zinsser B, Schubert M, et al. Performance loss rate of twelve photovoltaic technologies under field conditions using statistical techniques. Solar Energy 2014; 103(0): 28-42.