

# Curriculum Vitae of Sungeun Park

박 성 은

## [개인정보]

생년월일: 1982년 3월 27일 (남성)

국적: 대한민국

주소: 대전광역시 유성구 상대로 16 트리폴시티 5단지 511동 1104호

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## [학력]

March 2008 ~ February 2012,

Ph.D. (Advisor: Prof. Donghwan Kim)

Department of Materials Science and Engineering, Korea University, Seoul, Korea

Thesis title "*A study on interfacial reaction in aluminum metallization process for crystalline silicon solar cells*"

March 2006 ~ February 2008

M.S. (Advisor: Prof. Donghwan Kim)

Department of Materials Science and Engineering, Korea University, Seoul, Korea

Thesis title "*Fabrication and application of P3HT/PCBM organic solar cells based on TCO materials*"

March 2001 ~ February 2006

B.S.

School of Materials Science and Engineering, University of Ulsan, Ulsan, Korea

## [경력]

2022년 3월 ~ 현재

Adjunct Professor, Dept. Energy Engineering, University of Science & Technology

2022년 3월 ~ 현재

Principal researcher in Photovoltaic laboratory – Korea Institute of Energy Research, Korea  
(Research topic: Fabrication and analysis of High efficiency solar cells)

2017년 7월 ~ 2022년 2월

Senior researcher in Photovoltaic laboratory – Korea Institute of Energy Research, Korea  
(Research topic: Fabrication and analysis of High efficiency solar cells)

2017년 3월 ~ 2017년 6월

Visiting scientist and co-researcher in solar cells laboratory – Toyota Technological Institute, Japan  
(Research topic: Fabrication and analysis of High efficiency and advanced selective contact solar cells)

2014년 5월 ~ 2016년 6월

Visiting scientist in the Division solar cells – Development and characterization, Fraunhofer Institute for Solar Energy System ISE, Germany  
(Research topic: Photoluminescence analysis with imaging technology for solar cells)

2013년 3월 ~ 2014년 2월

Research professor in the Department of Materials Science and Engineering, Korea University  
(Research topic: Advanced silicon solar cells)

2012년 3월 ~ 2013 2월

Senior researcher in the Inter-University Research institute for Energy Technology, Korea University

2010 11월 ~ 2012 6월

Silicon PV tutor of education and training program for high efficiency silicon solar cell technology development project

### ***[Research experiences]***

- Fabrication of high efficiency passivated contact Si solar cell with thin tunnel oxide and poly silicon
- Fabrication of 20% PERC solar cell with ALD aluminum oxide
- Analysis of silicon solar cells using QSSPC, Suns-Voc, IQE, I-V, C-V, LBIC and FT-IR
- Impurity analysis in silicon wafer using photoluminescence Imaging technology
- Study of metal contacts for silicon solar cells
- Modeling and analysis of silicon solar cells using PC1D
- Designing and fabrication of new concept Si solar cells (Organic materials, Perovskite/Graphene etc.)
- Corrosion of metallic materials in photovoltaic modules
- Acceleration test in temperature and humidity for photovoltaic modules

### ***[Technical skill]***

Solar cells and semiconductor characterization tools:

Photoluminescence imaging, Lock-in thermal graphy, EBIC, Light and dark I-V, C-V, FT-IR, TEM, SEM, AFM, XRD, AES, XPS, QSSPC, Suns-Voc, Quantum efficiency, ECV analysis tool and simulation program for solar cells (PC1D, AFORS-HET)

Solar cell processing tools:

Wet station

Tube furnace and oxidation furnace for phosphorous and boron doping

Plasma enhanced chemical vapor deposition (PECVD)

Screen printer

Rapid thermal annealing (RTA) and belt furnace

Evaporator and sputtering system  
Glove box system

Solar PV modules:  
Electroluminescence (EL) image for PV modules  
PV module temperature cycle tester

### [수상이력]

2013 Poster award, Global Photovoltaic Conference 2013 & DSC-OPV8, Busan, Korea  
2013 Best oral presentation, Joint Symposium on Electronic Materials 2013, Ulsan, Korea  
2013 Best oral presentation, The Korean Society for New and Renewable Energy, Jeju, Korea  
2012 Poster award, Global Photovoltaic Conference 2012, Busan, Korea  
2011 Best oral presentation, The Korean Materials Research Society, Jeju, Korea  
2010 Best oral presentation, The Korean Materials Research Society, Samchuck, Korea  
2009 PVSEC-19 paper award, 19<sup>th</sup> International Photovoltaic Science and Engineering Conference, Jeju, Korea

### [Publications, SCI paper]

1. Hyeon Soo Cho, Jeong In Lee, **Sungeun Park**, Hee-eun Song, Dong-Youn Shin, Tae-il Kim, Min Gu Kang: *Photovoltaic Modules Using a Galinstan Paste Interconnection*. Journal-Korean Physical Society 06/2019; 74(12):1184-1189., DOI:10.3938/jkps.74.1184
2. Jong Hoon Lee, Kwan Hong Min, Min Gu Kang, Kyung Taek Jeong, Jeong In Lee, Hee-eun Song, **Sungeun Park (correspondence)**, Jin-Seong Park: *Efficiency characteristics of a silicon oxide passivation layer on p-type crystalline silicon solar cell at low illumination*. Current Applied Physics 03/2019; 19(6)., DOI:10.1016/j.cap.2019.03.006
3. Hyomin Park, **Sungeun Park**, Se Jin Park, Yoonmook Kang, Hae-Seok Lee, Donghwan Kim: *Structural Properties of Silicon Implanted with Unfiltered Boron Plasma Ions*. Journal of Nanoelectronics and Optoelectronics 12/2018; 13(12):1793-1796., DOI:10.1166/jno.2018.2399
4. Hyomin Park, **Sungeun Park (first authorship)**, Soohyun Bae, Yoonmook Kang, Hae-Seok Lee, Donghwan Kim: *Effect of Ambients on Rear Al Metallization in Silicon Solar Cells*. Journal of Nanoelectronics and Optoelectronics 11/2018; 13(11):1641-1645., DOI:10.1166/jno.2018.2396
5. Kwan Hong Min, Sungjin Choi, Myeong Sang Jeong, Min Gu Kang, **Sungeun Park**, Hee-eun Song, Jeong In Lee, Donghwan Kim: *Investigation of interface characteristics of Al<sub>2</sub>O<sub>3</sub>/Si under various O<sub>2</sub> plasma exposure times during the deposition of Al<sub>2</sub>O<sub>3</sub> by PA-ALD*. Current Applied Physics 09/2018; 19(2)., DOI:10.1016/j.cap.2018.09.004
6. Sang-Won Lee, Seongtak Kim, Soohyun Bae, Kyungjin Cho, Taewon Chung, Jae-Keun Hwang, Inseol Song, Wonkyu Lee, **Sungeun Park**, Jaebong Jung, Jihun Chun, Yoon Jung Lee, Yeon Ji Moon, Hae-Seok Lee, Donghwan Kim, Chan Bin Mo, Yoonmook Kang: *Enhanced UV stability of perovskite solar cells with a SrO interlayer*. Organic Electronics 09/2018; 63., DOI:10.1016/j.orgel.2018.09.019
7. **Sungeun Park**, Hyomin Park, Dongseop Kim, JungYup Yang, Dongho Lee, Young-Su Kim, Hyun-Jong Kim, Dongchul Suh, Byoung Koun Min, Kyung Nam Kim, Se Jin Park, Donghwan Kim, Hae-Seok Lee, Junggyu Nam, Yoonmook Kang: *Correction to: Optimization of Controllable Factors in the Aluminum Silicon Eutectic Paste and Rear Silicon Nitride Mono-Passivation Layer of PERC Solar Cells*. Metals and Materials International 06/2018; 24(5)., DOI:10.1007/s12540-018-0159-7

8. Jungho Song, Chanbin Mo, Dongseop Kim, Junggyu Nam, Jung Yup Yang, Dongchul Suh, Hyomin Park, Soohyun Bae, Se Jin Park, **Sungeun Park**, Hae-Seok Lee, Young-Su Kim, Yoonmook Kang, Donghwan Kim: *Cost-Performance Analysis for Interdigitated Back-Contact Solar Cells Using Ion Implantation Process*. *Nanoscience and Nanotechnology Letters* 04/2018; 10(4):548-553., DOI:10.1166/nnl.2018.2684
9. **Sungeun Park**, Hyomin Park, Dongseop Kim, JungYup Yang, Dongho Lee, Young-Su Kim, Hyun-Jong Kim, Dongchul Suh, Byoung Koun Min, Kyung Nam Kim, Se Jin Park, Donghwan Kim, Hae-Seok Lee, Junggyu Nam, Yoonmook Kang: *Optimization of Controllable Factors in the Aluminum Silicon Eutectic Paste and Rear Silicon Nitride Mono-Passivation Layer of PERC Solar Cells*. *Metals and Materials International* 03/2018; 24(8)., DOI:10.1007/s12540-018-0032-8
10. Chan Bin Mo, **Sungeun Park**, Soohyun Bae, Se Jin Park, Young-Su Kim, JungYup Yang, Hyunjong Kim, Dongchul Suh, Yoonmook Kang: *Minimizing Light-Induced Degradation of the Al<sub>2</sub>O<sub>3</sub> Rear Passivation Layer for Highly Efficient PERC Solar Cells*. 01/2018; 7(12):Q253-Q258., DOI:10.1149/2.0091812jss
11. **Sungeun Park**, Soo Min Kim, Se Jin Park, Soohyun Bae, Hyomin Park, Jung gyu Nam, Dongho Lee, Jung Yup Yang, Dong Seop Kim, Chanbin Mo, Young-Su Kim, Jihyun Kim, Hae-Seok Lee, Yoonmook Kang: *Rapid and Accurate Measurement of Ideality Factor and Parasitic Resistances of Thin Film Solar Cells*. 01/2018; 7(6):Q105-Q108., DOI:10.1149/2.0181805jss
12. Seongtak Kim, Soohyun Bae, Sang-Won Lee, Kyungjin Cho, Kyung Dong Lee, Hyunho Kim, **Sungeun Park**, Guhan Kwon, Seh-Won Ahn, Heon-Min Lee, Yoonmook Kang, Hae-Seok Lee, Donghwan Kim: *Relationship between ion migration and interfacial degradation of CH<sub>3</sub>NH<sub>3</sub>PbI<sub>3</sub> perovskite solar cells under thermal conditions*. *Scientific Reports* 12/2017; 7(1)., DOI:10.1038/s41598-017-00866-6
13. Young-Su Kim, Chanbin Mo, Doo Youl Lee, Sung Chan Park, Dongseop Kim, Junggyu Nam, JungYup Yang, Dongchul Suh, Hyun-Jong Kim, Hyomin Park, Se Jin Park, Donghwan Kim, Jungho Song, Hae-Seok Lee, **Sungeun Park (correspondence)**, Yoonmook Kang: *Gapless point back surface field for the counter doping of large-area interdigitated back contact solar cells using a blanket shadow mask implantation process*. *Progress in Photovoltaics Research and Applications* 06/2017; 25(12)., DOI:10.1002/pip.2910
14. Soohyun Bae, Wonwook Oh, Kyung Dong Lee, Seongtak Kim, Hyunho Kim, Nochang Park, Sung-Il Chan, **Sungeun Park**, Yoonmook Kang, Hae-Seok Lee, Donghwan Kim: *Potential induced degradation of n-type crystalline silicon solar cells with p + front junction*. *Energy Science and Engineering* 02/2017; 5(1)., DOI:10.1002/ese3.146
15. **Sungeun Park**, Hyomin Park, Dongseop Kim, Junggyu Nam, JungYup Yang, Dongho Lee, Byoung Koun Min, Kyung Nam Kim, Se Jin Park, Seongtak Kim, Dongchul Suh, Donghwan Kim, Hae-Seok Lee, Yoonmook Kang: *Continuously deposited anti-reflection double layer of silicon nitride and silicon oxynitride for selective emitter solar cells by PECVD*. *Current Applied Physics* 01/2017; 17(4)., DOI:10.1016/j.cap.2017.01.014
16. Jae-Wook Choi, **Sungeun Park**, Soohyun Bae, Seongtak Kim, Se Jin Park, Hyomin Park, Yoonmook Kang, Hae-Seok Lee, Donghwan Kim: *Properties of Silicon Solar Cells with Local Back Surface Field Fabricated by Aluminum-Silicon Eutectic Alloy Paste*. 12/2016; 4(4):145-149., DOI:10.21218/CPR.2016.4.4.145
17. Sang-Won Lee, Seongtak Kim, Soohyun Bae, Kyungjin Cho, Taewon Chung, Laura Elena Mundt, Seunghun Lee, **Sungeun Park**, Hyomin Park, Martin C. Schubert, Stefan W. Glunz, Yohan Ko, Yongseok Jun, Yoonmook Kang, Hae-Seok Lee, Donghwan Kim: *UV Degradation and Recovery of Perovskite Solar Cells*. *Scientific Reports* 12/2016; 6:38150., DOI:10.1038/srep38150
18. Hyomin Park, **Sungeun Park**, Seunghun Lee, Yoonmook Kang, Hae-Seok Lee, Donghwan Kim: *Effect of Acceleration Voltage on Phosphorus-Implanted Emitter of p-Type Crystalline*

- Silicon Solar Cell*. Journal of Nanoscience and Nanotechnology 10/2016; 16(10):10707-10710., DOI:10.1166/jnn.2016.13223
19. Hyunho Kim, **Sungeun Park**, Kwang-Sun Ji, Kyung Dong Lee, Seongtak Kim, Soohyun Bae, Seh-Won Ahn, Heon-Min Lee, Yoonmook Kang, Hae-Seok Lee, Donghwan Kim: *Solid-Phase Epitaxy Emitter for Silicon Solar Cells*. Journal of Nanoscience and Nanotechnology 10/2016; 16(10):10702-10706., DOI:10.1166/jnn.2016.13222
  20. Jonas Schön, Amanda Youssef, **Sungeun Park**, Laura E. Mundt, Tim Niewelt, Sebastian Mack, Kazuo Nakajima, Kohei Morishita, Ryota Murai, Mallory A. Jensen, Tonio Buonassisi, Martin C. Schubert: *Identification of lifetime limiting defects by temperature- and injection-dependent photoluminescence imaging*. Journal of Applied Physics 09/2016; 120(10):105703., DOI:10.1063/1.4961465
  21. Soohyun Bae, Seongtak Kim, Sang-Won Lee, Kyungjin Cho, **Sungeun Park**, Seunghun Lee, Yoonmook Kang, Hae-Seok Lee, Donghwan Kim: *Electric Field-Induced Degradation of Methylammonium Lead Iodide Perovskite Solar Cells*. Journal of Physical Chemistry Letters 07/2016; 7(16)., DOI:10.1021/acs.jpcllett.6b01176
  22. **Sungeun Park**, Hyomin Park, Junggyu Nam, JungYup Yang, Dongho Lee, Byoung Koun Min, Kyung Nam Kim, Se Jin Park, Hae-Seok Lee, Donghwan Kim, Yoonmook Kang, Dongseop Kim: *Effects of Laser Doping on Selective Emitter Si Solar Cells*. 06/2016; 4(2):54-58., DOI:10.21218/CPR.2016.4.2.054
  23. **Sungeun Park**, Hyomin Park, Yoonmook Kang, Hae-Seok Lee, Donghwan Kim: *Analysis of aluminum back surface field at different wafer specifications in crystalline silicon solar cells*. Current Applied Physics 05/2016; 16(9)., DOI:10.1016/j.cap.2016.05.016
  24. **Sungeun Park**, Young Do Kim, Hyomin Park, Yoonmook Kang, Hae-Seok Lee, Donghwan Kim: *Effects of Firing Ambient on Rear Metallization for Silicon Solar Cells*. Korean Journal of Materials Research 07/2015; 25(7):336-340., DOI:10.3740/MRSK.2015.25.7.336
  25. Soohyun Bae, Soo Min Kim, Kyung Dong Lee, Young Do Kim, **Sungeun Park**, Yoonmook Kang, Hae-Seok Lee, Donghwan Kim: *Effects of Pre-annealing on Firing Stability of Atomic Layer-Deposited Al<sub>2</sub>O<sub>3</sub>*. Israel Journal of Chemistry (Online) 06/2015; 55(10)., DOI:10.1002/ijch.201400192
  26. Seunghun Lee, Kwang-sun Ji, Hyomin Park, Sung Ju Tark, **Sungeun Park**, Jeong Chul Lee, Won Mok Kim, Yoonmook Kang, Hae-Seok Lee, Donghwan Kim: *Structural, Electrical, and Optical Properties of Zn-In-Sn-O Films for Silicon Heterojunction Solar Cells*. Thin Solid Films 05/2015; 589., DOI:10.1016/j.tsf.2015.05.025
  27. Seongtak Kim, **Sungeun Park**, Young Do Kim, Soohyun Bae, Hyunpil Boo, Hyunho Kim, Kyung Dong Lee, Sung Ju Tark, Donghwan Kim: *Ag Contact Properties According to the Front Grid Width and Firing Temperature for Silicon Solar Cells*. Journal of Nanoscience and Nanotechnology 10/2014; 14(10)., DOI:10.1166/jnn.2014.9452
  28. Soo Min Kim, Seungju Chun, Suhyun Bae, **Sungeun Park**, Min Gu Kang, Hee-eun Song, Yoonmook Kang, Hae-seok Lee, Donghwan Kim: *Light-induced degradation and metastable-state recovery with reaction kinetics modeling in boron-doped Czochralski silicon solar cells*. Applied Physics Letters 08/2014; 105(8):083509-083509-5., DOI:10.1063/1.4894289
  29. **Sungeun Park**, Jooyoung Song, Sung Ju Tark, Young Do Kim, Chel-jong Choi, Soonwoo Kwon, Sewang Yoon, Chang-Sik Son, Donghwan Kim: *Investigation of Al back contacts and BSF formation by in situ TEM for silicon solar cells*. Progress in Photovoltaics Research and Applications 08/2014; 22(8)., DOI:10.1002/pip.2322
  30. Chanseok Kim, **Sungeun Park**, Young Do Kim, Hyomin Park, Seongtak Kim, Hyunho Kim, Hae-seok Lee, Donghwan Kim: *Properties of boron-rich layer formed by boron diffusion in n-type silicon*. Thin Solid Films 08/2014; 564:253–257., DOI:10.1016/j.tsf.2014.05.038
  31. Yoon Chung Nam, Hyomin Park, Ji Eun Lee, Soo Min Kim, Young Do Kim, **Sungeun Park**, Yoonmook Kang, Hae-Seok Lee, Donghwan Kim: *Measurement and Analysis of Temperature Dependence for Current-Voltage Characteristics of Homogeneous Emitter and*

- Selective Emitter Crystalline Silicon Solar Cells*. Korean Journal of Materials Research 07/2014; 24(7):375-380., DOI:10.3740/MRSK.2014.24.7.375
32. Soo Min Kim, Soohyun Bae, Young Do Kim, **Sungeun Park**, Yoonmook Kang, Haeseok Lee, Donghwan Kim: *An Analysis of Light Induced Degradation with Optical Source Properties in Boron-Doped P-Type Cz-Si Solar Cells*. Korean Journal of Materials Research 06/2014; 24(6):305-309., DOI:10.3740/MRSK.2014.24.6.305
  33. Soohyun Bae, Wonwook Oh, Soo Min Kim, Young Do Kim, **Sungeun Park**, Yoonmook Kang, Haeseok Lee, Donghwan Kim: *Potential Induced Degradation(PID) of Crystalline Silicon Solar Modules*. Korean Journal of Materials Research 06/2014; 24(6):326-337., DOI:10.3740/MRSK.2014.24.6.326
  34. Byungjun Kang, Nochang Park, Sung Ju Tark, Won Wook Oh, **Sungeun Park**, Young Do Kim, Hae-Seok Lee, Donghwan Kim: *Advanced Yield Strength of Interconnector Ribbon for Photovoltaic Module Using Crystallographic Texture Control*. Metals and Materials International 01/2014; 20(2):229-232., DOI:10.1007/s12540-014-2005-x
  35. Seongtak Kim, **Sungeun Park**, Young Do Kim, Hyunpil Boo, Hyunho Kim, Soohyun Bae, Hyomin Park, Sung Ju Tark, Donghwan Kim: *Improvement of electrical properties in screen-printed crystalline silicon solar cells by contact treatment of the grid edge*. Metals and Materials International 11/2013; 19(6)., DOI:10.1007/s12540-013-6032-9
  36. Hyunho Kim, **Sungeun Park**, Byungjun Kang, Seongtak Kim, Sung Ju Tark, Donghwan Kim, S.S. Dahiwal: *Effect of texturing process involving saw-damage etching on crystalline silicon solar cells*. Applied Surface Science 11/2013; 284:133-137., DOI:10.1016/j.apsusc.2013.07.051
  37. Hyunho Kim, **Sungeun Park**, Soo Min Kim, Seongtak Kim, Young Do Kim, Sung Ju Tark, Donghwan Kim: *Influence of surface texturing conditions on crystalline silicon solar cell performance*. Current Applied Physics 07/2013; 13(4):S34-S40., DOI:10.1016/j.cap.2013.01.008
  38. Kyung Dong Lee, S.S. Dahiwal, Young Do Kim, Jong-Han Lee, Seongtak Kim, Soohyun Bae, **Sungeun Park**, Sung Ju Tark, Donghwan Kim: *Influence of SiNx:H film properties according to gas mixture ratios for crystalline silicon solar cells*. Current Applied Physics 01/2013; 13(1):241-245., DOI:10.1016/j.cap.2012.07.017
  39. K Dong Lee, S.S. Dahiwal, Y Do, S Kim, S Bae, **S Park**, S Ju Tark, D Kim: *Influence of Gas Mixture Ratio on Properties of SiNx:H Films for Crystalline Silicon Solar Cells*. Energy Procedia 12/2012; 27:419-425., DOI:10.1016/j.egypro.2012.07.087
  40. **Sungeun Park**, Young Do Kim, Soohyun Bae, Seongtak Kim, Jooyong Song, Hyunho Kim, Hyo Min Park, Soomin Kim, Sung Ju Tark, Donghwan Kim: *Effects of rapid thermal process on the junction properties of aluminum rear emitter solar cells*. Metals and Materials International 08/2012; 18(4)., DOI:10.1007/s12540-012-4022-y
  41. Joo yong Song, **Sungeun Park**, Young Do Kim, Min Gu Kang, Sung Ju Tark, Soonwoo Kwon, Sewang Yoon, Donghwan Kim: *Aluminum fire-through with different types of the rear passivation layers in crystalline silicon solar cells*. Metals and Materials International 08/2012; 18(4)., DOI:10.1007/s12540-012-4020-0
  42. Sung-Ju Tark, Young-Do Kim, Soo-Min Kim, **Sungeun Park**, Dong-Hwan Kim: *Light Induced Degradation in Crystalline Si Solar Cells*. 03/2012; 8(1)., DOI:10.7849/ksnre.2012.8.1.024
  43. Hyunpil Boo, Jong-Han Lee, Min Gu Kang, KyungDong Lee, Seongtak Kim, Hae Chul Hwang, Wook Jung Hwang, Hee Oh Kang, **Sungeun Park**, Sung Ju Tark, Donghwan Kim: *Effect of High-Temperature Annealing on Ion-Implanted Silicon Solar Cells*. International Journal of Photoenergy 03/2012; 2012(12)., DOI:10.1155/2012/921908
  44. Hyomin Park, Sung Ju Tark, Chan Seok Kim, **Sungeun Park**, Young Do Kim, Chang-Sik Son, Jeong Chul Lee, Donghwan Kim: *Effect of the Phosphorus Gettering on Si Heterojunction Solar Cells*. International Journal of Photoenergy 02/2012; 2012., DOI:10.1155/2012/794876
  45. **Sungeun Park**, Soohyun Bae, Hyunho Kim, Seongtak Kim, Young Do Kim, Soomin Kim,

- Sung Ju Tark, Chang-Sik Son, Donghwan Kim: *Effects of controllable process factors on Al rear surface bumps in Si solar cells*. Current Applied Physics 01/2012; 12(1)., DOI:10.1016/j.cap.2011.04.021
46. Jooyong Song, **Sungeun Park**, Soonwoo Kwon, Sungtak Kim, Hyunho Kim, Sung Ju Tark, Sewang Yoon, Donghwan Kim: *A study on the aluminum fire-through to a-SiNx:H thin film for crystalline solar cells*. Current Applied Physics 01/2012; 12(1)., DOI:10.1016/j.cap.2011.06.028
  47. Kyung-Dong Lee, Young-Do Kim, Shailendra S. Dahiwale, Hyun-Pil Boo, **Sungeun Park**, Sung-Ju Tark, Dong-Hwan Kim: *A Study on the Optimization of the SiNx:H Film for Crystalline Silicon Solar Cells*. 01/2012; 21(1)., DOI:10.5757/JKVS.2012.21.1.29
  48. Kyung Dong Lee, Min Gu Kang, Young Do Kim, Sung Ju Tark, **Sungeun Park**, Donghwan Kim: *Effects of in-situ NH<sub>3</sub> post plasma treatment on the surface passivation layer*. 12/2011; 1399(1):207-208., DOI:10.1063/1.3666328
  49. **Sungeun Park**, Sung Ju Tark, Donghwan Kim: *Effect of sorbitol doping in PEDOT:PSS on the electrical performance of organic photovoltaic devices*. Current Applied Physics 11/2011; 11(6):1299-1301., DOI:10.1016/j.cap.2011.03.061
  50. Youngkyoung Ahn, Sakeb Hasan Choudhury, Daeseok Lee, Sharif Md. Sadaf, Manzar Siddik, Minseok Jo, **Sungeun Park**, Young Do Kim, Dong Hwan Kim, Hyunsang Hwang: *Estimation of Interfacial Fixed Charge at Al<sub>2</sub>O<sub>3</sub>/SiO<sub>2</sub> Using Slant-Etched Wafer for Solar Cell Application*. Japanese Journal of Applied Physics 07/2011; 50(7R):071503., DOI:10.7567/JJAP.50.071503
  51. Youngkyoung Ahn, Sakeb Hasan Choudhury, Daeseok Lee, Manzar Siddik, Minseok Jo, **Sungeun Park**, Young Do Kim, Dong Hwan Kim, Hyunsang Hwang: *Estimation of Interfacial Fixed Charge at Al<sub>2</sub>O<sub>3</sub>/SiO<sub>2</sub> Using Slant-Etched Wafer for Solar Cell Application*. Japanese Journal of Applied Physics 07/2011; 50(7)., DOI:10.1143/JJAP.50.071503
  52. Hyun-Ho Kim, Seong-Tak Kim, **Sungeun Park**, Joo-Yong Song, Young-Do Kim, Sung-Ju Tark, Soon-Woo Kwon, Se-Wang Yoon, Chang-Sik Son, Dong-Hwan Kim: *Back Surface Field Properties with Different Surface Conditions for Crystalline Silicon Solar Cells*. Korean Journal of Materials Research 05/2011; 21(5)., DOI:10.3740/MRSK.2011.21.5.243
  53. Sung Ju Tark, Min Gu Kang, **Sungeun Park**, Seung Hun Lee, Chang-Sik Son, Jeong Chul Lee, Donghwan Kim: *Characterization of hydrogenated Al-doped ZnO films prepared by multi-step texturing for photovoltaic applications*. Current Applied Physics 05/2011; 11(3):362-367., DOI:10.1016/j.cap.2010.08.005
  54. Young-Woo Ok, Ajeet Rohatgi, Yeon-Ho Kil, **Sungeun Park**, Dong-Hwan Kim, Joon-Sung Lee, Chel-Jong Choi: *Abnormal Dopant Distribution in POCl<sub>3</sub>-Diffused N<sup>+</sup> Emitter of Textured Silicon Solar Cells*. IEEE Electron Device Letters 03/2011; 32(3):351-353., DOI:10.1109/LED.2010.2098840
  55. Young Do Kim, **Sungeun Park**, Jooyong Song, Sung Ju Tark, Min Gu Kang, Soonwoo Kwon, Sewang Yoon, Donghwan Kim: *Surface passivation of crystalline silicon wafer via hydrogen plasma pre-treatment for solar cells*. Solar Energy Materials and Solar Cells 01/2011; 95(1):73-76., DOI:10.1016/j.solmat.2010.04.049
  56. Byung-Jun Kang, **Sungeun Park**, Seung-Hun Lee, Hyun-Ho Kim, Bong-Gul Shin, Soon-Woo Kwon, Jai-Won Byeon, Se-Wang Yoon, Dong-Hwan Kim: *Effect of Saw-Damage Etching Conditions on Flexural Strength in Si Wafers for Silicon Solar Cells*. Korean Journal of Materials Research 11/2010; 20(11):617-622., DOI:10.3740/MRSK.2010.20.11.617
  57. Myung-II Jeong, **Sungeun Park**, Dong-Hwan Kim, Joon-Sung Lee, Yun-Chang Park, Kwang-Soon Ahn, Chel-Jong Choi: *Transmission Electron Microscope Study of Screen-Printed Ag Contacts on Crystalline Si Solar Cells*. 10/2010; 157(10):H934-H936., DOI:10.1149/1.3473812
  58. Sung Ju Tark, Min Gu Kang, **Sungeun Park**, Ji Hoon Jang, Jeong Chul Lee, Won Mok Kim, Joon Sung Lee, Donghwan Kim: *Development of surface-textured hydrogenated ZnO:Al*

*thin-films for  $\mu$ c-Si solar cells.* Current Applied Physics 11/2009; 9(6):1318-1322., DOI:10.1016/j.cap.2008.12.015

59. **Sungeun Park**, Sung Ju Tark, Joon Sung Lee, Heejin Lim, Donghwan Kim: *Effects of intrinsic ZnO buffer layer based on P3HT/PCBM organic solar cells.* Solar Energy Materials and Solar Cells 06/2009; 93(6-93):1020-1023., DOI:10.1016/j.solmat.2008.11.033

## [특허]

1. 반도체 전극 구조물의 형성 방법 및 이를 이용한 실리콘 태양 전지의 제조 방법, 10-2015-0067550 (2015) 김동환, 김영도, **박성은**, 김찬석, 강윤목, 이해석
2. Manufacturing Method of Printing Pattern for Solar Cell, Korean patent/10-1170109 (2012) Donghwan Kim, Sung Ju Tark, **Sungeun Park**, Jooyong Song
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