

# CURRICULUM VITAE

## 1. Personal Information

**Name:** Jae-Hong Lim

**Address:** Department of Materials Science and Engineering, Gachon University, 1342 Seongnamdaero, Sujeong-gu, Seongnam-si, Gyeonggi-do, South Korea, 13120

**E-mail:** [limjh@gachon.ac.kr](mailto:limjh@gachon.ac.kr)



## Educations

Ph. D. Materials Science and Engineering, Gwangju Institute of Science and Technology (GIST), Gwangju, Korea (2002 ~ 2007)  
(Thesis Title: “*Growth of ZnO and its application to ZnO homojunction LED and transparent ohmic contact for GaN LED*”)

M.S Department of Ceramic Engineering, Yonsei University, Seoul, Korea (1999 ~ 2001)  
(Thesis Title: “*Fabrication and characterization of micro supercapacitor for MEMs*”)

B.S Department of Ceramic Engineering, Yonsei University, Seoul, Korea (1992 ~ 1999)

## Professional Career

2019.3~ Associate Professor, Department of Materials Science and Engineering, Gachon University

2015.1~2019.2 Principal Researcher in Electrochemistry Research Group, Materials Processing Division, Korea Institute of Materials Science

2015.1~ Adjunct Professor in Engineering School, Pusan National University

2010. 4~2014.12 Senior Researcher in Electrochemistry Research Group, Materials Processing Division, Korea Institute of Materials Science

2008. 4~ 2010. 2 Postdoctoral Researcher at Nano Electrochemical System Lab. in UC Riverside

2007. 6~ 2008.3 Postdoctoral Researcher at Quantum Semiconductors Lab. in UC Riverside

2004. 4~ 2005. 4 Student representative on an advisory committee for Samsung Electro-Mechanics

2001. 8 ~ 2002. 8 Researcher at Optical Telecommunication Research Center, LG Cable in Gyeonggi-do, Korea

1999. 2 ~ 2001. 8 Student Researcher at Thin Film Technology Research Center in Korea Institute of Science and Technology (KIST), Seoul, Korea

## **2. Patents**

### **- International patents**

1. A Thermoelectric Semiconductor module and A Manufacturing Method of The same PCT/KR2016/003811, 2016-04-12
2. AN ELECTRONIC MATERIALS AND MANUFACTURING METHOD OF THE SAME, PCT/KR2016/003796, 2016-04-11
3. Metal oxide thin film with three-dimensional nano-ripple structure, preparing method of the same and organic solar cell containing the same, PCT/KR2016/002488, 2016-03-11
4. A Heat Sink comprising a Metal Mesh and Fabricating Method of the same, PCT/KR2013/003372, 2013-04-22

### **- Domestic patents**

1. A Heating Wire and A PLANAR HEATING SHEET comprising THE SAME, registration No. 10- 1812024, 2017-12-19
2. Semiconductor module using electrochemical deposition and manufacturing method thereof, registration No. 10-1781985, 2017-09-20
3. Thermoelectric property measurement system, registration No. 10-1695569, 2017-01-05
4. A Cover Plate for Electro Plating, registration No. 10-1734302, 2017-05-12
5. AN ELECTRONIC MATERIALS AND MANUFACTURING METHOD OF THE SAME, registration No. 10-1767908, 2017-08-08
6. A Thermoelectric Semiconductor module and A Manufacturing Method of The same, registration No. 10-1741106, 2017-05-23
7. A Probe Pin and a Manufacturing Method of the same, registration No. 10- 1632619, 2016-06-16
8. A Manufacturing Method of metal mesh electrode and a Organic Electroluminescence Display Device comprising the metal mesh electrode, registration No. 10- 1577656, 2015-12-09
9. An Electrode Pattern and Manufacturing Method thereof, registration No. 10- 1556218, 2015-09-22
10. Core-shell type nanocomposites included fullerene particle using barrier layer of hole transport layer and preparation method thereof, and solar cell comprising the same, registration No. 10- 1559098, 2015-10-02
11. Carbon fiber comprising ZnO nano-rod and fabrication method of the same, registration No. 10- 1504154, 2015-03-13

12. Probe pin and Manufacturing Method thereof, registration No. 10-1379426, 2014-03-24
13. A Thermoelectric Semiconductor module and A Manufacturing Method of The same, registration No. 10-1386682, 2014-04-11
14. Current Collector comprising Metal Mesh layer, registration No. 10-1386680, 2014-04-11
15. Current Collector comprising Metal Mesh layer 2, registration No. 10-1386678, 2014-04-11
16. Method of forming Core-Shell Nano-Composite containing Fullene and Manufacturing Method of Solar cell using the same, registration No. 10-1370436, 2014-02-27
17. Heat Sink comprising Metal Mesh layer, registration No. 10-1422218, 2014-07-16
18. Heat Sink comprising Metal Mesh layer, registration No. 10-1425995, 2014-07-28
19. A damage measuring apparatus of pipe arrangement comprising piezoelectric devices, registration No. 10-1407623, 2014-06-09
20. A Manufacturing Method of Thermoelectric Semiconductor, registration No. 10-1402229, 2014-05-26
21. A Manufacturing Method of Thermoelectric Semiconductor, registration No. 10-1472436, 2014-12-08
22. A Thermoelectric Semiconductor module and A Manufacturing Method of The same, registration No. 10-1439461, 2014-09-25
23. Manufacturing Method of Super-Hydrophobic Carbon fiber, registration No. 10-1307332, 2013-09-04
24. A Thermoelectric Semiconductor module and A Manufacturing Method of The same, registration No. 10-1324257, 2013-10-25
25. Probe pin and Manufacturing Method thereof, registration No. 10-1296352, 2013-08-07
26. A Solar cell and Manufacturing Method thereof, registration No. 10-1239845, 2013-02-27
27. A Manufacturing Method of Thermoelectric Semiconductor, registration No. 10-1208065, 2012-11-28
28. Method of Mold substrate and Manufacturing Method thereof probe pin, registration No. 10-1185938, 2012-09-19
29. Method of Mold substrate and Manufacturing Method thereof probe pin, registration No. 10-1177878, 2012-08-22
30. Method of Metal oxide Nanowire-wall conducting layer and A Manufacturing Method of The same, registration No. 10-1218381, 2012-12-27
31. A Manufacturing Method of Light emission Diode, registration No. 10-1239848, 2013-02-27
32. Light emission Diode and Manufacturing Method of the same, registration No. 10-1198357, 2012-10-31
33. Method of forming Groove of Solar cell and Manufacturing Method of Solar cell using the

- same, registration No. 10-1152410, 2012-05-25
34. A Manufacturing Method of High Efficient Organic Solar Cell using Core/Shell Metal-Oxide Nanoparticles, registration No. 10-1131564, 2012-03-22
  35. Method of ohmic contact to p-type ZnO, registration No. 10-0588486, 2006.06.02
  36. Method of transparent electrode for ohmic contact top-AlGaInN compound semiconductor using zinc oxide, registration No. 10-0564912, 2006.03.21
  37. Preparation Method of Ohmic Contact to Compound Semiconductor Using ZnO, registration No. 10-0543414, 2006.01.09

### 3. Authorship scholarly Books or Articles

#### International papers

1. Jiwon Kim, Kyu Hyoung Lee, Sung-Dae Kim, **Jae-Hong Lim**, and Nosang V. Myung, “Enhancement in thermoelectric performance of p-type Sb<sub>2</sub>Te<sub>3</sub> films by in-situ generation of Ag<sub>2</sub>Te nanoprecipitates” Applied Surface Science, 2018, 436, 785
2. Seung-Hwan Lee, Jin-Myung Choi, **Jae-Hong Lim**, Jozeph Park, Jin-Seong Park, “A study on the thermoelectric properties of ALD-grown aluminum-doped tin oxide with respect to nanostructure modulations”, Ceramics International, 2018, 44, 1978
3. Jiwon Kim, **Jae-Hong Lim**, Nosang V Myung, “Composition-and crystallinity-dependent thermoelectric properties of ternary BixSb<sub>2</sub>-xTey films Applied Surface Science”, Applied Surface Science, 429, 158-163
4. Yongchao Ma, Jihoon Lee, Yanliang Liu, Pesi Mwitumwa Hangoma, Woon Ik Park, **Jaehong Lim**, Yun Kyung Jung, Jung Hyun Jeong, Sung Heum Park, Kwang Ho Kim, “Synchronized-pressing fabrication of cost-efficient crystalline perovskite solar cells via intermediate engineering”, Nanoscale, 2018, in-press
5. Changyol Yang, Kyoungsoon Moon, Jae-Won Song, Jiwon Kim, Jung-Ho Lee, **Jae-Hong Lim**, Bongyoung Yoo, “Spalling of Thin Si Layer via Electroless and Electrodeposit-Assisted Stripping (E2AS) with All-Wet Process for Fabrication of Low-Cost Flexible Single-Crystalline Si Solar Cell”, 2018, 165, D243
6. Sanghwa Yoon, Jiwon Kim, **Jae-Hong Lim**, Bongyoung Yoo, “Cobalt Iron-Phosphorus Synthesized by Electrodeposition as Highly Active and Stable Bifunctional Catalyst for Full Water Splitting”, Journal of The Electrochemical Society, 2018, 165, H271
7. Ziqi Yu, Laia Ferrer-Argemi, Jiwon Kim, **Jae-Hong Lim**, Nosang V Myung, Jaeho Lee, “Phase-dependent thermal conductivity of electrodeposited antimony telluride films”, Journal of Materials Chemistry C, 2018, 6, 3410

8. Jiwon Kim, Kyu Hyung Lee, Sung-Dae Kim, **Jae-Hong Lim**, Nosang V Myung, “Simple and effective fabrication of Sb<sub>2</sub>Te<sub>3</sub> films embedded with Ag<sub>2</sub>Te nanoprecipitates for enhanced thermoelectric performance”, *Journal of Materials Chemistry A*, 2018, 6, 349
9. Seil Kim, Young-In Lee, Seung Han Ryu, Tae-Yeon Hwang, Yoseb Song, Sungho Seo, Bongyoung Yoo, **Jae-Hong Lim**, Hong-Baek Cho, Nosang V Myung, Yong-Ho Choa, “Synthesis and thermoelectric characterization of bulk-type tellurium nanowire/polymer nanocomposites”, *Journal of Materials Science*, 2017, 52, 12724
10. Sanghwa Yoon, **Jae-Hong Lim**, Bongyoung Yoo, “Efficient Si/SiO<sub>x</sub>/ITO Heterojunction Photoanode with an Amorphous and Porous NiOOH Catalyst formed by NiCl<sub>2</sub> activation for Water Oxidation”, *Electrochimica Acta*, 2017, 237, 37
11. Jiwon Kim, Hyunsung Jung, **Jae-Hong Lim**, Nosang V Myung, “Facile Control of Interfacial Energy-Barrier Scattering in Antimony Telluride Electrodeposits”, *Journal of Electronic Materials*, 2017, 46, 2347
12. Sanghwa Yoon, Jung-Yeul Yun, **Jae-Hong Lim**, Bongyoung Yoo, “Enhanced electrocatalytic properties of electrodeposited amorphous cobalt-nickel hydroxide nanosheets on nickel foam by the formation of nickel nanocones for the oxygen evolution reaction”, *Journal of Alloys and Compounds*, 2017, 693, 964
13. Jiwon Kim, Joo-Youl Lee, **Jae-Hong Lim**, Nosang V Myung, “Optimization of Thermoelectric Properties of p-type AgSbTe<sub>2</sub> Thin Films via Electrochemical Synthesis”, *Electrochimica Acta* 2016, 196, 579-586
14. Sanghwa Yoon, Jae-Hong Lim, Bongyoung Yoo, “Electrochemical synthesis of cuprous oxide on highly conducting metal micro-pillar arrays for water splitting”, *Journal of Alloys and Compounds* 2016 677, 66-71
15. Kyu Hyung Lee, Byungki Ryu, Hee Jung Park, Kimoon Lee, Jong Wook Roh, Sang Il Kim, Sungwoo Hwang, Soon-Mok Choi, Jong-Young Kim, Jeong Hoon Lee, **Jae-Hong Lim**, Sung Wng Kim, “Enhancement of the thermoelectric figure of merit in n-type Cu<sub>0.008</sub>Bi<sub>2</sub>Te<sub>2.7</sub>Se<sub>0.3</sub> by using Nb doping” *Journal of the Korean Physical Society* 2016, 68 (1), 7-11
16. Sanghwa Yoon, Sung-Dae Kim, Si-Young Choi, **Jae-Hong Lim**, Bongyoung Yoo, “Hierarchical Shape Evolution of Cuprous Oxide Micro-and Nanocrystals by Surfactant-Assisted Electrochemical Deposition”, *Crystal Growth & Design* 2015, 15 (10), 4969-4974
17. Jiwon Kim, **Jae-Hong Lim**, Wayne Bosze, Nosang V Myung, “Optimizing thermoelectric property of antimony telluride nanowires by tailoring composition and crystallinity”, *Materials Research Express* 2015, 2 (8), 085006
18. Jiwon Kim, Miluo Zhang, Wayne Bosze, Su-Dong Park, **Jae-Hong Lim**, Nosang V Myung, “Maximizing thermoelectric properties by nanoinclusion of  $\gamma$ -SbTe in Sb<sub>2</sub>Te<sub>3</sub> film via

- solid-state phase transition from amorphous Sb–Te electrodeposits”, *Nano Energy*, 2015, 13, 727-734
19. Seil Kim, Young-In Lee, Yo-Min Choi, Hyo-Ryoung Lim, **Jae-Hong Lim**, Nosang V Myung, Yong-Ho Choa, “Thermochemical hydrogen sensor based on chalcogenide nanowire arrays”, *Nanotechnology*, 2015, 26, 145503
  20. Youngsup Song, In-Joon Yoo, Na-Ri Heo, Dong Chan Lim, Dongyun Lee, Joo Yul Lee, Kyu Hwan Lee, Kwang-Ho Kim, **Jae-Hong Lim**, “Electrodeposition of thermoelectric Bi<sub>2</sub>Te<sub>3</sub> thin films with added surfactant”, *Current Applied Physics*, 2015, 15, 261
  21. Hyeona Mun, Kyu Hyoung Lee, Suk Jun Kim, Jong-Young Kim, Jeong Hoon Lee, **Jae-Hong Lim**, Hee Jung Park, Jong Wook Roh, Sung Wng Kim, “Fe-Doping Effect on Thermoelectric Properties of p-Type Bi<sub>0.48</sub>Sb<sub>1.52</sub>Te<sub>3</sub>”, *Materials*, 2015, 8, 959
  22. Qi Xun Xia, Kwan San Hui, Kwun Nam Hui, Sung Dae Kim, **Jae Hong Lim**, Si Young Choi, Luo Jiang Zhang, Rajaram S Mane, Je Moon Yun, Kwang Ho Kim, “Facile synthesis of manganese carbonate quantum dots/Ni(HCO<sub>3</sub>)<sub>2</sub>–MnCO<sub>3</sub> composites as advanced cathode materials for high energy density asymmetric supercapacitors”, *Journal of Materials Chemistry A*, 2015, 3, 22102
  23. Sun-Young Park, Dong Chan Lim, Eun Mi Hong, Joo-Yeoul Lee, Jinhee Heo, **Jae Hong Lim**, Chang-Lyoul Lee, Young Dok Kim, Guido Mul, “Selective Modulation of Charge-Carrier Transport of a Photoanode in a Photoelectrochemical Cell by a Graphitized Fullerene Interfacial Layer”, *ChemSusChem*, 2015, 8, 172
  24. **Jae-Hong Lim**, Gyeong-Jin Shin, Tae-Yeon Hwang, Hyo-Ryoung Lim, Young-In Lee, Kyu-Hwan Lee, Sung-Dae Kim, Min-Wook Oh, Su-Dong Park, Nosang V Myung, Yong-Ho Choa, “Three-dimensional hierarchical Te–Si nanostructures” *Nanoscale*, 2014 6, 11697 ([Front cover image](#))
  25. Sanghwa Yoon, Misung Kim, In-Soo Kim, **Jae-Hong Lim**, Bongyoung Yoo, “Manipulation of cuprous oxide surfaces for improving their photocatalytic activity”, *J. Mater. Chem. A*, 2014, 2, 11621 ([Back cover image](#))
  26. Tae-Yeon Hwang, Guk-Hwan An, **Jae-Hong Lim**, Nosang V Myung, Yong-Ho Choa, “Morphology control of ordered Si nanowire arrays by nanosphere lithography and metal-assisted chemical etching” *Jpn. J. Appl. Phys.* 53 (2014) 05HA07-1
  27. Kwang-Dae Kim, Dong Chan Lim, Myung-Geun Jeong, Hyun Ook Seo, Bo Yeol Seo, Joo Yul Lee, Youngsup Song, Shinuk Cho, **Jae-Hong Lim**, Young Dok Kim, “Enhanced Stability of Organic Photovoltaics by Additional ZnO Layers on Rippled ZnO Electron-collecting Layer using Atomic Layer Deposition” *Bull. Korean Chem. Soc.* 2014, Vol. 35, 353

28. Chong Hyun Chang, Miluo Zhang, **Jae-Hong Lim**, Yongho Choa, Sudong Park, Nosang V. Myung, "Synthesis of PbTe and PbTe/Te Nanostructures by Galvanic Displacement of Cobalt Thin Films", *Electrochimica Acta* 138 (2014) 334–340
29. Miluo Zhang, Jiwon Kim, Seil Kim, Hosik Park, Hyunsung Jung, N. George Ndirfor-Angwafor, **Jae-Hong Lim**, Yongho Choa, and Nosang V. Myung, "Galvanically Displaced Ultralong  $Pb_xSe_yNi_z$  Hollow Nanofibers with High Thermopower" *Chem. Mater.* 2014, 26, 2557–2566
30. Misung Kim, Sanghwa Yoon, Hyunsung Jung, Kun-Jae Lee, Dong-Chan Lim, In-Soo Kim, Bongyoung Yoo, and **Jae-Hong Lim** "The influence of polarity of electrodeposited Cu<sub>2</sub>O thin films on the photoelectrochemical performance", *Japanese Journal of Applied Physics* 2014, 53, 08NJ01-1
31. In-Joon Yoo, Youngsup Song, Dong Chan Lim, Nosang V. Myung, Kyu Hyoung Lee, Minju Oh, Dongyun Lee, Yang Do Kim, Seil Kim, Yong-Ho Choa, Joo Yul Lee, Kyu Hwan Lee, and **Jae-Hong Lim** "Thermoelectric Characteristics of  $Sb_2Te_3$  Thin Films Formed via Surfactant-Assisted Electrodeposition", *Journal of Materials Chemistry A*, 2013, 1, 5430
32. In-Joon Yoo, Nosang V. Myung, Dong Chan Lim, Youngsup Song, Young-Keun Jeong, Yang Do Kim, Kyu Hwan Lee, and **Jae-Hong Lim**, "Electrodeposition of  $BixTe_y$  thin films for thermoelectric application", *Thin Solid Films*, 2013, 546, 48
33. In-Joon Yoo, Dong Chan Lim, Nosang V. Myung, Young-Keun Jeong, Yang Do Kim, Kyu Hwan Lee, and **Jae-Hong Lim**, "Electrical/Thermoelectric Characterization of Electrodeposited  $BixSb_{2-x}Te_3$  Thin Films", *Electronic Materials Letter*, 2013, 9, 687
34. Heng C Su, Miluo Zhang, Wayne Bosze, Jae-Hong Lim, Nosang V Myung, "Metal nanoparticles and DNA co-functionalized single-walled carbon nanotube gas sensors" *Nanotechnology* 24 (2013) 505502
35. Syed Mubeen, Min Lai, Ting Zhang, Jae-Hong Lim, Ashok Mulchandani, Marc A. Deshusses, Nosang V. Myung, "Hybrid tin oxide-SWNT nanostructures based gas sensor." *Electrochimica Acta*, 2013, 92, 484
36. Kwang-Dae Kim, Dong Chan Lim, Hyun Ook Seo, Joo Yul Lee, Bo Yeol Seo, Da Ji Lee, Youngsup Song, Shinuk Cho, **Jae-Hong Lim**, Young Dok Kim, "Enhanced performance of organic photovoltaics by  $TiO_2$ -interlayer with precisely controlled thickness between ZnO electron collecting and active layers." *Applied Surface Science*, 2013, 279, 380
37. Kwang-Dae Kim, Dong Chan Lim, Jinhee Hu, Jung-Dae Kwon, Myung-Geun Jeong, Hyun Ook Seo, Joo Yul Lee, Ka-Young Jang, **Jae-Hong Lim**, Kyu Hwan Lee, Yongsoo Jeong, Young Dok Kim, and Shinuk Cho, "Surface Modification of a ZnO Electron-Collecting Layer Using Atomic Layer Deposition to Fabricate High-Performing Inverted Organic Photovoltaics." *ACS Applied Materials & Interfaces*, 2013, 5, 8718

38. Hyunsung Jung, Jae-Hong Lim, Hosik Park, Jiwon Kim, Yong-Ho Choa, and Nosang V. Myung, *"Lithographically Patterned p-Type Sb<sub>2</sub>Te Nanoribbons with Controlled Morphologies and Dimensions"* The Journal of Physical Chemistry C, 2013, 117, 17303.
39. Da-Bok Jeong, **Jae-Hong Lim**, Joun Lee, Hosik Park, Miluo Zhang, Young-In Lee, Yong-Ho Choa, Nosang V. Myung, *"Template-free synthesis of vertically oriented tellurium nanowires via a galvanic displacement reaction."* Electrochimica Acta, 2013, 111, 200
40. Diana Elazema, Hyunsung Jungb, Tingjun Wua, **Jae-Hong Lim**, Kyu-Hwan Lee, Nosang V. Myung, *"Morphology change of galvanically displaced one-dimensional tellurium nanostructures via controlling the microstructure of sacrificial Ni thin films."*, Electrochimica Acta, 2013, 106, 447
41. Chong Hyun Chang, Hyunsung Jung, Youngwoo Rheem, Kyu-Hwan Lee, Dong-Chan Lee, Yongsoo Jeong, **Jae-Hong Lim**, and Nosang V. Myung, *"Electrochemical Synthesis of CdTe/SWNT Hybrid Nanostructures and Their Tunable Electrical and Optoelectrical Properties"*, Nanoscale, 2013, 5, 1616
42. Sanghwa Yoon, **Jae-Hong Lim**, and Bongyoung Yoo, *"Oxygen Re-adsorption of a Single ZnO Nanobridge by Joule Heating under Ultraviolet Illumination"*, Applied Physics Express 5 (2012) 105003
43. Nilay Kumar Dey, Eun Mi Hong, Kang Ho Choi, Young Dok Kim, **Jae-Hong Lim**, Kyu Hwan Lee, Dong Chan Lim, *"Growth of carbon nanotubes on carbon fiber by thermal CVD using Ni nanoparticles as catalysts"*, Procedia Engineering, 2012, 36, 556
44. **Jae-Hong Lim**, Ashok Mulchandani, and Nosang V. Myung, *"Single-Walled Carbon Nanotubes Based Chemicapacitive Sensors"* Journal of Nanoscience and Nanotechnology, 2012, 12, 1517
45. Eun Kyung Lee, Dong Chan Lim, Kyu Hwan Lee, and **Jae-Hong Lim**, *"Self-Aligned Ni-P Ohmic Contact Scheme for Silicon Solar Cells by Electroless Deposition"*, Electronic Materials Letters, 2012, 8, 391
46. Sandra C. Hernandez, James Kakoullis, Jr., **Jae Hong Lim**, Syed Mubeen, Carlos M. Hangarter, Ashok Mulchandani, Nosang V. Myung, *"Hybrid ZnO/SWNT Nanostructures Based Gas Sensor"*, Electroanalysis, 2012, 24, 1613
47. **Jae-Hong Lim**, MiYeong Park, Dong-Chan Lim, Nosang V. Myung, Jung-Ho Lee, Young-Keun Jeong, Bongyoung Yoo, Kyu Hwan Lee, *"Synthesis and thermoelectric/electrical characterization of electrodeposited Sb<sub>2</sub>Te thin films"*, Materials Research Bulletin, 2012, 47, 2748
48. Sanghwa Yoon, Ilgoo Huh, **Jae-Hong Lim**, Bongyoung Yoo, *"Annealing effects on electrical and optical properties of ZnO thin films synthesized by the electrochemical method"*, Current Applied Physics 12 (2012) 784



49. Hyunsung Jung, Hoyoung Suh, Carlos M. Hangarter, **Jae Hong Lim**, Young-In Lee, Yong-Ho Choa, Kimin Hong, and Nosang V. Myung, “*Programmable synthesis of shape-, structure-, and composition-modulated one-dimensional heterostructures by galvanic displacement reaction*”, Appl. Phys. Lett. 100, 223105 (2012)
50. Dong Chan Lim, Kwang-Dae Kim, Sun-Young Park, Eun Mi Hong, Hyun Ook Seo, **Jae Hong Lim**, Kyu Hwan Lee, Yongsoo Jeong, Changsik Song, Eunji Lee, Young Dok Kim and Shinuk Cho, “*Towards Fabrication of High-Performing Organic Photovoltaics: New Donor-Polymer, Atomic Layer Deposited Thin buffer layer and Plasmonic Effects*”, Energy and Environmental Science, 2012, 5, 9803
51. Shenghua Jiang, Fang Liu, Min-Gyu Kim, **Jae-Hong Lim**, Kun-Jae Lee, Yong-Ho Choa, Kyung Song, Wilfred Chen, Nosang V. Myung, and Hor-Gil Hur,” *Synthesis of Chalcogenide Ternary and Quaternary Nanotubes through Directed Compositional Alterations of Bacterial As-S Nanotubes*”, Journal of Materials Chemistry, 2011, 21(28): 10277-10279
52. Sung-Woo Cho, Young Tae Kim, Won Hyun Shim, Sun-Young Park, Kwang-Dae Kim, Hyun Ook Seo, Nilay Kumar Dey, **Jae-Hong Lim**, Yongsoo Jeong, Kyu Hwan Lee, Young Dok Kim, and Dong Chan Lim “*Influence of surface roughness of aluminum-doped zinc oxide buffer layers on the performance of inverted organic solar cells*”, Appl. Phys. Lett. 2011, 98, 023102
53. **Jae-Hong Lim**; Ashok Mulchandani; Nosang V Myung, SINGLE-WALLED CARBON NANOTUBES BASED CHEMICAPACITIVE SENSORS, Journal of Nanoscience and Nanotechnology, 2011, 12(2): 1517-1520
54. **JAE-HONG LIM**, MI YEONG PARK, DONG CHAN LIM, BONGYOUNG YOO, JUNG-HO LEE, NOSANG V. MYUNG, and KYU HWAN LEE, “*Electrodeposition of p-Type SbxTey Thermoelectric Films*” Journal of Electronic Materials, 2011. 40(5): p. 1321-1325.
55. Lim, D.-C.K., Young-Tae ; Shim, Won-Hyun ; Jang, A-Young ; **Lim, Jae-Hong** ; Kim, Yang-Do ; Jeong, Yong-Soo ; Kim, Young-Dok ; Lee, Kyu-Hwan, “*Wet-Chemically Prepared NiO Layers as Hole Transport Layer in the Inverted Organic Solar Cell*” Bulletin of the Korean Chemical Society 2011. 32(3): p. 1067.
56. Dong Chan Lim, Won Hyun Shim, Kwang-Dae Kim, Hyun Ook Seo, **Jae-Hong Lim**, Yongsoo Jeong, Young Dok Kim, Kyu Hwan Lee ”*Spontaneous formation of nanoripples on the surface of ZnO thin films as hole-blocking layer of inverted organic solar cells*”, Solar Energy Materials and Solar Cells, 2011, 95, 3036–3040
57. **Jae-Hong Lim**, K.H.Lee, D.C. Lim, “*ZnO Light Emitting Diodes Using ZnO Quantum Dots Embedded in an Amorphous Silicon-Oxide Matrix*”. Journal of the Korean Physical Society, 2011. 58(6): p. 1664.

58. J.-K. Cho, J.-H.K., **J.-H. Lim**, K.-H. Lee and S.-G. Kang, “*Effects of triethanolamine and polyethylene glycol additives on electrodeposition of Sn–Ag solder alloy*” *Materials Science and Technology*, 2011. 7(5): p. 970.
59. Syed Mubeen, **Jae-Hong Lim**, Aarti Srirangarajan, Ashok Mulchandani, Marc A. Deshusses, Nosang V. Myung “*Gas Sensing Mechanism of Gold Nanoparticles Decorated Single-Walled Carbon Nanotubes*”, *Electroanalysis*, 2011, 23, 2687
60. Shim, W. H.; Park, M. Y.; Park, D. S.; Kim, Y. T.; Park, S. Y; **Lim, J. -H.**; Lee, K. H.; Jeong, Y. S.; Kim, Y. D.; Kim, K. -D.; Seo, H. O.; Lim, D. C. “*Effect of Sol-Gel Prepared ZnO Electron Selective Layer on the Performance of Inverted Organic Solar Cells*” *Molecular Crystals and Liquid Crystals*, Volume 538, Number 1, 2011 , pp. 164-170(7)
61. Shim, W. H.K., Young Tea; Park, Mi Yeong; **Lim, Jae-Hong**; Kim, Yang Do; Lee, Kyu Hwan; Jeong, Yongsoo; Lim, Dong Chan, “*Effects of Electrodeposited Ga-doped ZnO Buffer Layer on the Performance of Inverted Organic Solar Cells*” *Journal of Nanoelectronics and Optoelectronics*, 2010. 5: p. 181-185.
62. **Lim, J.-H.**, Nopparat Phiboolsirichit, Syed Mubeen, Youngwoo Rheem, Marc A. Deshusses, Ashok Mulchandani, and Nosang V Myung, “*Sensing Performance of Polyaniline Functionalized Single-Walled Carbon Nanotubes*” *Nanotechnology*, 21, 075502 (2010).
63. **Lim, J.H.**, K.H. Lee, and D.C. Lim, “*Enhanced performance in GaN light emitting diode by patterned ZnO transparent conducting oxide*” *Journal of the Korean Physical Society*, 2010. 57(5): p. 1229-1232.
64. Hyunsung Jung, Youngwoo Rheem, Nicha Chartuprayoon, **Jae-Hong Lim**, Kyu-Hwan Lee, Bongyoung Yoo, Kun-Jae Lee, Yong-Ho Choa, Peng Wei, Jing Shi and Nosang V. Myung, „*Ultra-long Bismuth Telluride Nanoribbons Synthesis by Lithographically Patterned Galvanic Displacement*” *Journal of Materials Chemistry*, 2010, 20(44): 9982-9987.
65. **Jae-Hong Lim**, Nopparat Phiboolsirichit, Syed Mubeen, Youngwoo Rheem, , Marc A. Deshusses, Ashok Mulchandani, and Nosang V Myung, “*Electrical and Sensing Properties of Single Walled Carbon Nanotubes Network based Field Effect Transistors: Effect of Alignment and Selective Breakdown*” *Electroanalysis*, 22, 99 (2010).
66. L. Li, Z. Yang, Z. Zuo, J.H. Lim, J.L. Liu, “*Thermal stability of CdZnO thin films grown by molecular-beam epitaxy*” *Applied Surface Science*, 256, 4734 (2010)
67. Min Lai, **Jae-Hong Lim**, Syed Mubeen, Youngwoo Rheem, Ashok Mulchandani, Marc A Deshusses, and Nosang V. Myung, “*Size-controlled electrochemical synthesis and properties of SnO<sub>2</sub> nanotubes*” *Nanotechnology*, 20, 185602 (2009).
68. Z Yang, **J-H Lim**, S Chu, Z Zuo, JL Liu, “*Study of the effect of plasma power on ZnO thin films growth using electron cyclotron resonance plasma-assisted molecular-beam epitaxy*”, *Applied Surface Science*, 255, 3375 (2008)

69. S. Chu, **J. H. Lim**, L. J. Mandalapu, Z. Yang, L. Li, and J. L. Liu, “*Sb-doped p-ZnO/Ga-doped n-ZnO homojunction ultraviolet light emitting diodes*”, Appl. Phys. Lett. 92, 091110 (2008).
70. R. Navamathavana, Chi Kyu Choia, Eun-Jeong Yang, **Jae-Hong Lim**, Dae-Kue Hwang and Seong-Ju Park, “*Fabrication and characterizations of ZnO thin film transistors prepared by using radio frequency magnetron sputtering*”, Solid-State Electronics, 52, 813. (2008).
71. I. K. Park, J. Y. Kim, M. K. Kwon, C. Y. Cho, **J. H. Lim**, and S. J. Park, “*Phosphor-free white light-emitting diode with laterally distributed multiple quantum wells*”, Appl. Phys. Lett. 92, 091110 (2008).
72. I. K. Park, M. K. Kwon, J. O. Kim, S. B. Seo, J. Y. Kim, **J. H. Lim**, S. J. Park, and Y. S. Kim, “*Green light-emitting diode with self-assembled In-rich InGaN quantum dots*”, Appl. Phys. Lett. 91, 133105 (2007).
73. Min-Suk Oh, Dae-Kue Hwang, **Jae-Hong Lim**, Yong-Seok Choi, and Seong-Ju Park, “*Current-driven hydrogen incorporation in zinc oxide*”, Appl. Phys. Lett. **91**, 212102 (2007).
74. D. K. Hwang, M. S. Oh, **J. H. Lim**, Y. S. Choi, and S. J. Park, “*ZnO-based light-emitting metal-insulator-semiconductor diodes*”, Appl. Phys. Lett. 91, 121113 (2007).
75. D. K. Hwang, M. S. Oh, **J. H. Lim**, and S. J. Park, “*ZnO thin films and light-emitting diodes*”, J. Phys. D 40, R387 (2007).
76. Min-Suk Oh, Dae-Kue Hwang, **Jae-Hong Lim**, Yong-Seok Choi, and Seong-Ju Park, “*Improvement of Pt Schottky contacts to n-type ZnO by KrF excimer laser irradiation*”, Appl. Phys. Lett. 91, 042109 (2007).
77. Il-Kyu Park, Min-Ki Kwon, Seong-Bum Seo, Ja-Yeon Kim, **Jae-Hong Lim**, and Seong-Ju Park, “*Ultraviolet light-emitting diodes with self-assembled InGaN quantum dots*”, Appl. Phys. Lett. **90**, 111116 (2007).
78. Dae-Kue Hwang, Min-Suk Oh, **Jae-Hong Lim**, Chang-Goo Kang, and Seong-Ju Park, “*Effect of annealing temperature and ambient gas on phosphorus doped p-type ZnO*”, Appl. Phys. Lett. 90, 021106 (2007).
79. **Jae-Hong Lim**, Chang-Ku Kang, Kyoung-Kook Kim, Il-Kyu Park, Dae-Kue Hwang, and Seong-Ju Park, “*UV electroluminescence emission from ZnO light-emitting diodes grown by high temperature RF-sputtering*”, Advanced Materials, **18**, 2720 (2006).
80. Min-Suk Oh, Dae-Kue Hwang, **Jae-Hong Lim**, Eun-Jeong Yang, Chang-Ku Kang, and Seong-Ju Park, “*Low resistance nonalloyed Ni/Au ohmic contacts to p-GaN irradiated by KrF excimer laser*”, Appl. Phys. Lett. 89, 042107 (2006).
81. Seok-In Na, Ga-Young Ha, Dae-Seob Han, Seok-Soon Kim, Ja-Yeon Kim, **Jae-Hong Lim**, Dong-Joon Kim, Kyeong-Ik Min, and Seong-Ju Park, “*Selective wet etching of p-GaN for efficient GaN-based light-emitting diodes*”, IEEE Photonic Tech. Lett. **18**, 1512 (2006).

82. R. Navamathavan, Eun-Jeong Yang, **Jae-Hong Lim**, Dae-Kue Hwang, Jin-Yong Oh, Jin-Ho Yang, Jae-Hyung Jang, and Seong-Ju Park, "*Effects of electrical bias stress on the performance of ZnO based thin film transistors fabricated by radio frequency magnetron sputtering*", J. Electrochem. Soc. **153**, G385 (2006).
83. Ja-Yeon Kim, Seok-In Na, Ga-Young Ha, Min-Ki Kwon, Il-Kyu Park, **Jae-Hong Lim**, Seong-Ju Park, Min-Ho Kim, Dongyoul Choi, and Kyeongik Min, "*Thermally stable and highly reflective AgAl reflector in flip-chip GaN light-emitting diodes*", Appl. Phys. Lett. **88**, 043507 (2006).
84. R. Navamathavan, **Jae-Hong Lim**, Dae-Kue Hwang, Baek-Hyun Kim, Jin-Yong Oh, Jin-Ho Yang, Hyun-Sik Kim, and Seong-Ju Park, "*Thin film transistors based on ZnO fabricated by radio frequency magnetron sputtering*", J. Kor. Phys. Soc. **48**, 271 (2006).
85. Jin-Ho Yang, Hyun-Sik Kim, **Jae-Hong Lim**, Dae-Kue Hwang, Jin-Yong Oh, and Seong-Ju Park, "*The Effect of Ar/O<sub>2</sub> Sputtering Gas on the Phosphorus-Doped p-Type ZnO Thin Films*", J. Electrochem. Soc. **153**, G242 (2006).
86. Sung-Pyo Jung, Denise Ullery, Chien-Hung Lin, and Henry P. Lee, **Jae-Hong Lim**, Dae-Kue Hwang, Ja-Yeon Kim, Eun-Jeong Yang, and Seong-Ju Park, "*High-performance GaN-based light-emitting diode using high-transparency Ni/Au/Al-doped ZnO composite contacts*", Appl. Phys. Lett. **87**, 181107 (2005).
87. Dae-Kue Hwang, Soon-Hyung Kang, **Jae-Hong Lim**, Eun-Jeong Yang, Jin-Yong Oh, Jin-Ho Yang, and Seong-Ju Park, "*p-ZnO/n-GaN heterostructure ZnO light-emitting diode*", Appl. Phys. Lett. **86**, 222101 (2005).
88. Dae-Kue Hwang, Hyun-Sik Kim, **Jae-Hong Lim**, Jin-Yong Oh, Jin-Ho Yang, and Seong-Ju Park, "*Study of the photoluminescence of phosphorus-doped pp-type ZnO thin films grown by radio-frequency magnetron sputtering*", Appl. Phys. Lett. **86**, 151917 (2005).
89. **Jae-Hong Lim**, Dae-Kue Hwang, Jin-Ho Yang, Jin-Yong Oh, Eun-Jeong Yang, and Seong-Ju Park, "*Highly transparent and low resistance gallium doped indium oxide contact to p-type GaN*", Appl. Phys. Lett. **87**, 042109 (2005).
90. **Jae-Hong Lim**, Dae-Kue Hwang, Hyun-Sik Kim, Jin-Ho Yang, R. Navamathavan, and Seong-Ju Park, "*The effect of interlayers on the indium oxide doped ZnO ohmic contact to p-type GaN*", J. Electrochem. Soc. **152**, G491 (2005).
91. **Jae-Hong Lim**, Kyoung-Kook Kima, Dae-Kue Hwang, Hyun-Sik Kim, Jin-Yong Oh, and Seong-Ju Park, "*Formation and effect of thermal annealing for low resistance Ni/Au ohmic contact to phosphorous doped p-type ZnO*", J. Electrochem. Soc. **152**, G179 (2005).
92. **Jae-Hong Lim**, Dae-Kue Hwang, Min-Ki Kwon, Il-Kyu Park, Seok-in Na, Seong-Ju Park, "Highly transparent ZnO spreading layer for GaN based LED." physica status solidi (c) 2.7 (2005) 2533-2535.

93. Jin-yong Oh, **Jae-Hong Lim**, Dae-kue Hwang, Hyun-sik Kim, R. Navamathavan, Kyoung-kook Kim, and Seong-Ju Park, "*Growth of buffer-free high quality ZnO epilayer on sapphire (0001) using radio-frequency magnetron sputtering*", J. Electrochem. Soc. **151**, G623 (2004).
94. **Jae-Hong Lim**, Dae-Kue Hwang, Hyun-Sik Kim, Jin-Yong Oh, Jin-Ho Yang, R. Navamathavan, and Seong-Ju Park, "*Low resistivity and transparent indium oxide doped ZnO ohmic contact to p-type GaN*", Appl. Phys. Lett. **85**, 6191 (2004).
95. Kyoung-Kook Kim, Hyun-Sik Kim, Dae-Kue Hwang, **Jae-Hong Lim**, and Seong-Ju Park, "*The realization of p-type ZnO thin films via phosphorus doping and thermal activation of the dopant*", Appl. Phys. Lett. **83**, 63 (2003).
96. Han-Ki Kim, Tae-Yeon Seong, **Jae-Hong Lim**, Young-Woo Ok, Won il Cho, Young Hwa Shin, and Young Soo Yoon, "*Correlation between the microstructures and the cycling performance of RuO<sub>2</sub> electrodes for thin-film microsupercapacitors*", J. Vac. Sci. Technol. **B20**, 1827 (2002)
97. **Jae-Hong Lim**, Doo Jin Choi, Han-Ki Kim, Won Il Cho, and Young Soo Yoon, "*Thin Film Supercapacitors using a sputtered RuO<sub>2</sub> Electrode*", J. Electrochem. Soc. **148**, A275 (2001).

## **Book**

1. **Jae-Hong Lim**, and Seong-Ju Park, "Ch. 7 Contacts to ZnO in Zinc oxide bulk, thin films and nanostructures", Elsevier (2006).