

RESEARCH INTERESTS

Dr. Kim's current research interests and activities aims investigating Terahertz science and technologies for sensing and imaging, exploring new hybrid nanostructures for electronics, photonics, and sensing architectures. It includes THz Biomedical imaging, Near field microscopy for biosensing, Metamaterials and novel devices for THz source and detectors, developing the optical and terahertz spectroscopy of such nanostructures in order to understand the fundamental properties of charge transfer, as well as novel nanostructure compounds (quantum dots, nanowires, nanotubes) for energy harvesting devices.

EDUCATION

1999 Ph.D., Electrical and Computer Engineering, Northwestern University, Evanston, IL
1994 M.S., Physics, Northwestern University, Evanston, IL
1992 B.S., Physics, Yonsei University, Seoul, Korea

APPOINTMENTS

2013- **Associate Professor**, ECE Department, University of Alabama, Tuscaloosa, AL.
2007-2013 **Assistant Professor**, ECE Department, University of Alabama, Tuscaloosa, AL.
2002-2007 **Research Associate, Consulting Assistant/Associate Professor**,
EE Department, Stanford University, Stanford, CA.
2000-2002 **Research Scientist**, Agilent Technologies, San Jose, CA
1999-2000 **Senior Research Engineer**, Samsung Electronics, Suwon, Korea
1994-1999 **Research Assistant**, Center for Quantum Devices, Northwestern University.
1992-1993 **Research Assistant**, National Science Research Institute, Yonsei University, Korea

ACADEMIC ACTIVITIES

Teaching: *The University of Alabama (2007-present):*

- ▣ ECE 332 "Electronics I"
- ▣ ECE 462/562 "Semiconductor Optoelectronics" (Undergraduate and Graduate)
- ▣ ECE 466/566 "Fundamentals of Nanotechnologies" (Undergraduate and Graduate)
- ▣ ECE 492/494 "Capstone Senior Design" (Undergraduate, Supervise projects)
- ▣ ECE 662 "Advanced Nanosciences" (Graduate)
- ▣ FLC 101 Freshmen Learning Community, "Being Creative for Engineers" (service course for Freshmen)
- ▣ ECE 491/493 "Undergraduate Research" (Directing undergraduates for the research)

Other:

- ▣ *Faculty Advisor of Eta Kappa Nu (Honor Society)*

- ☐ *Mentor of Emerging Scholars in Undergraduate Research Program*

PATENTS

- ☐ US 6,680,964. “Moisture passivated planar index-guided VCSEL”
- ☐ US 9,118,163 “Methods and apparatus for generating terahertz radiation”
- ☐ US Patent Application (14/676,213), “Methods and apparatus for generating terahertz radiation”

HONORS AND AWARDS

- ☐ NSF CAREER AWARD (2010)
- ☐ Departmental Meritorious Research Award (2010)
- ☐ First Place Prize (student Joseph Lukens), IEEE SoutheastCon Undergraduate Research Paper Competition (2011).
- ☐ **Invited to White House representing NSF**, on “New work place flexibility policies to support America’s scientists and their families” (2011)
- ☐ HKN Outstanding Instructor Award (2014)
- ☐ IEEE Senior member (2014)
- ☐ Best Poster Award (2nd place), META 15, the 6th International Conference on Metamaterials, Photonics Crystals and Plasmonics (2015)
- ☐ Inducted to National Academy of Inventors (2016)
- ☐ Outstanding Research by the Doctoral Student Award, College of Engineering, University of Alabama (2016)
- ☐ Best Poster Award (2nd place), Women in STEM Experience Symposium, University of Alabama (2016)

PROFESSIONAL SERVICES

- ☐ Member of “Nanosig organization and Nanoelectronics and Nanophotonics subsection”, “Berkeley-MIT-Stanford Nanotechnology” Association”, “Nanotechnology Report Group, Bay Area Science Infrastructure Consortium”, “Stanford Nanofabrication Facility User Network” (2000-2006)
- ☐ Member of “TryNano” for Nanotechnology education
- ☐ SPIE award committee (2006- present)
- ☐ SPIE Early career award committee (2007-present)
- ☐ SPIE Early career award committee chair (2012- present)
- ☐ SPIE Scholarship committee (2012- present)
- ☐ IEEE Electron Device Society Student award committee (Administrative committee) (2011-present)

- ▣ Conference Program Committee Member for: Electronic Materials Symposium (EMS-TMS), 2004-2005; SPIE Symposia Committee 2007, 2008; SPIE International Symposium on Integrated Optoelectronic Devices (Photonics West), 2003, 2004, 2005; SPIE's Photonics Asia Conference, 2004; UKC-Nanotechnology and Science Symposium, 2004; Nanoelectronics and Nanophotonics symposium, 2004; 5th International conference on Quantum Dots, 2008; IEEE Nano Materials and Devices Conference, 2012
- ▣ *Reviewer for:* Applied Physics Letters; Journal of Applied Physics; Journal of Physics and Chemistry of Solids; Nanotechnology, Journal of Lightwave Technologies, Journal of Crystal Growth, IEEE Photonics Technology Letter
- ▣ Proposal Review and Panel for NSF, NASA, NIH, CFI, KRF
- ▣ *Member of:* IEEE; Materials Research Society (MRS); Eta Kappa Nu (HKN); International Society for Optical Engineering (SPIE); Society of Women Engineers (SWE).

POSTDOCTORAL FELLOW AND GRADUATE STUDENTS ADVISED

- ▣ *Fellows:* Joseph Brewer (Rare Earth Solar); Chin-Jen Chiang
- ▣ *Ph.D's Degree awarded:* David Wilbert (2014), Gang Shen (2014), Mohammad P. Hokmabadi (2016)
- ▣ *Master's Degree with Thesis Graduated:* Babatunde Ajilore (2011), Soner Balci (2012), Lee Butler (2012), William Baughman (2014), Hamdullah Yokus (2014), Elmer Rivera (2015), Ju-Hung Kim (2015)
- ▣ *Current Ph.D students:* Soner Baici, Joseph Waters, Muliang Zhu, Sourav Garg, Elizabeth Philip, M. Zeki Gungordu, Abu Shahab Mollah, Arbaaz Khan

INVITED TALKS

1. "Investigation and Exploration of Terahertz Spectrum and Devices for Biosensing", SPIE Optics and Photonics Conference, San Diego, CA (2016) **Invited**
2. "Terahertz metamaterials: design, implementation, modeling and applications", SPIE Defense and Commercial Sensing Conference, Baltimore, MD (2016) **Invited**
3. "Perspective of THz biomedical Imaging", SPIE Defense and Commercial Sensing Conference, Baltimore, MD (2016) **Invited**
4. "THz metamaterials and its application in slow light", South East Ultrafast Conference, Raleigh, NC (2016) **Invited**
5. "Slow light by hybridized concentric twisted double split ring resonators and THz applications", MINT Review Workshop, UA (2015) **Invited**
6. "Polarization controllable THz stereometamaterial absorber", US-Korea Conference, Atlanta, GA (2015) **Invited**
7. "Investigation of 2D materials and metasurfaces in THz frequency", 12th Korea-US Forum on nanotechnology, Arlington, VA (2015) **Invited**

8. "THz Metamaterials for Imaging and Sensing Technology," Colloquium, Universidad Autonoma de Madrid, Spain (2014) **Invited**
9. "Investigation and Application of Terahertz Spectroscopy and Spectral Imaging", Colloquium, Univ. Joseph Fourier, Grenoble, France (2014) **Invited**
10. "Probing materials using THz technology", Research Seminar, Department of Metallegical Engineering, UA (2014) **Invited**
11. "Terahertz technology for sensing and imaging", Research seminar, Department of Electrical and Computer Engineering, UA (2014) **Invited**
12. "THz generation and carrier dynamics of nanomaterials", MINT Review Workshop, (2014) **Invited**
13. "Flexible and 3-Dimensional Conformal Polarization Controllable THz Stereometamaterial Absorber", Nanotechnology for Defense Conference, Chantilly, VA (2014) **Invited**
14. "Investigation of SiGe Nanowires THz Emission", 39th International conference on Infrared, Millimeter and Terahertz Waves, Tucson, AZ (2014) (**Keynote presentation**) **Invited**
15. "Nanophotonics for future Optoelectronics", Photonics Convergence Conference, Gwangju, Korea (2014) **Invited**
16. "Hybrid Nanostructures for Optoelectronics", Nano Korea, Women in Nano, Seoul, Korea (2014) **Invited**
17. "Terahertz spectroscopy: From carrier dynamics of semiconductor nanostructures to bio-molecular dynamics in solution" SouthEastern Ultrafast Conference, Baton Rouge, LA (2014) **Invited**
18. "THz Metamaterials Photonics for Sensing and Imaging", Nanotechnology for Defense Conference, Tucson, AZ (2013) **Invited**
19. "THz Metamaterials Photonics and Nanostructures Characterization", NANO Korea 2013, Seoul, South Korea (2013) **Invited**
20. "Terahertz Biomedical Imaging and Functional Tissue Imaging", BioAlabama Conference, Birmingham, AL (2013) **Invited**
21. "THz Metamaterial Perfect Absorber for Imaging and Sensing Technology", South East Ultrafast Conference, Georgia Institute Technology, Atlanta, GA (2013) **Invited**
22. "Highly Efficient, Polarization Insensitive Terahertz Metamaterial Perfect Absorber and Imaging", International Photonics and Optoelectronics Meetings, Wuhan, China (2012) **Invited**
23. "High Sensitivity and High selectivity THz Biomedical Imaging", Bio Alabama Tech Conference, Birmingham, AL (2012) **Invited**
24. "High Sensitivity and High selectivity THz Biomedical Imaging", THz-Bio Workshop, South Korea (2012) **Invited**
25. "THz Photonics for Biomedical Application", SEUFC, Orlando, FL (2012) **Invited**
26. "Hybrid nanostructure based on quantum dots and nanowires", IEEE NMDC (Nanomaterials Device Conference) Jeju, Korea (2011) **Invited**

27. "Infrastructure of Terahertz imaging and sensing technologies", University of Alabama, Huntsville, Physics, Colloquium, (2011) **Invited**
28. "Infrastructure of Terahertz Imaging and Sensing Technology," SouthEast Ultrafast Conference, Oak Ridge, TN, January (2011) **Invited**
29. "BRIGE: Infrastructure of Terahertz Imaging and Sensing Technology," NSF ECCS Conference , Honolulu, HI, December (2010) **Invited**
30. "Biophotonics and Advanced Nanotechnology Laboratory at University of Alabama," *BioNano Technology Workshop, HudsonAlpha, Huntsville, AL, June (2009)* **Invited**
31. "Nanostructure Enhanced Terahertz Technology for Sensing and Imaging," Sixth NSF sponsored US-Korea Forum on Nanotechnology, Las Vegas, NV, April (2009) **Invited**
32. "Terahertz Technology and Nanostructures," *AMRDEC, Huntsville, AL, October (2008)* **Invited**
33. "THz bio-medical imaging: technologies and perspectives," University of Alabama, Birmingham, Physics Department Colloquium, September (2008) **Invited**
34. "THz bio-medical imaging: technologies and perspectives," Northwestern University, Biomedical Engineering Department, Evanston, IL (2007) **Invited**
35. "THz bio-medical imaging: technologies and perspectives," University of Alabama, Electrical and Computer Engineering Department, Tuscaloosa, AL (2007) **Invited**
36. "Quantum Dots: The Enabling Technology for Future Integrated Smart Sensors and Medical Imaging" *Stony Brook State University of New York, Colloquium, April, Stony Brook, NY (2006)* **Invited**
37. "Quantum Dots: The Enabling Technology for Future Integrated Smart Sensors and Medical Imaging" *University of Illinois at Chicago, Colloquium, April, Chicago, IL (2006)* **Invited**
38. "Quantum Nanostructure: from Photonic Devices to Integrated Smart Sensor System". *Georgia Institute of Technology, Colloquium, July, Atlanta, GA (2005)* **Invited**
39. "Quantum Nanostructure from Photonic Devices to Biological Sensing," USC Material Science Engineering Colloquium, January, Los Angeles, CA (2004) **Invited**
40. "Review on recent development of quantum dots: From optoelectronic devices to novel bio-sensing applications," *SPIE Photonics West Conference, January, San Jose, CA (2003)* **Invited**
41. "Recent research Progress in quantum dots and InGaAsN long wavelength lasers," *Colloquium, Yonsei University, Seoul, Korea (2002)* **Invited**
42. "Current State of the art Optoelectronic Devices based on Highly Strained Materials," International Symposium on the Physics of Semiconductors and Applications (ISPSA) ,Cheju, Korea. (2002) **Invited**
43. "Recent progress in quantum dots and emerging new materials InGaAsN for long wavelength lasers," *Colloquium, Seoul National University, Seoul Korea (2002)* **Invited**
44. "MOCVD Growth and Characterization of Epitaxial Quantum Dots for Optoelectronic Devices,". *ICASE Colloquium (NASA), January, NASA Langley Research Center, VA, USA (2001)* **Invited**

45. "MOCVD Growth and Characterization of Epitaxial Quantum Dots for Optoelectronic Devices,". *Workshop on Quantum structures and physics, Seoul National University, Seoul, Korea(1999)* **Invited**

PRESENTATIONS

1. "Independent component analysis applications on THz sensing and imaging", SPIE Defense and Commercial Sensing Conference, Baltimore, MD (2016)
2. "Large area 2D MoS2 monolayers: growth, devices and applications", AL EPSCoR Review Meeting (2016)
3. "Fabrication and measurement of ZnO single-nanowire photon sensors", AL EPSCoR Review Meeting (2016)
4. "Low pressure CVD growth and characterization of 2D MoS2 monolayers for bio applications", Nanobio Summit 2015 Birmingham, AL (2015)
5. "Hybridized concentric twisted DSRRs leading to plasmon induced transparency and slow light application in THz frequency", Metamaterials' 2015, Metamaterials Congress, Oxford, UK (2015)
6. "Terahertz Spectroscopy Used to Distinguish Breast Epithelial Cell Lines", 40th International conference on Infrared, Millimeter and Terahertz Waves, Hong Kong, China (2015)
7. "THz Emission from InP and InGaAs Nanowires Fabricated Using Electron Beam Lithography", 40th International conference on Infrared, Millimeter and Terahertz Waves, Hong Kong, China (2015)
8. "Slow Light by Hybridized Concentric-Twisted Double Split Ring Resonators and THz Application", 40th International conference on Infrared, Millimeter and Terahertz Waves, Hong Kong, China (2015)
9. "Polarization controllable THz metamaterial absorber", META'15, the 6th International Conference on Metamaterials, Photonic Crystals and Plasmonics, New York, NY (2015)
10. "Hybridized concentric-twisted DSRRs leading to plasmon induced transparency", META'15, the 6th International Conference on Metamaterials, Photonic Crystals and Plasmonics, New York, NY (2015)
11. "Investigation of robust flexible conformal THz perfect metamaterial absorber", META'15, the 6th International Conference on Metamaterials, Photonic Crystals and Plasmonics, New York, NY (2015)
12. "Polarization independent terahertz metamaterial absorber and its electric circuit", META'15, the 6th International Conference on Metamaterials, Photonic Crystals and Plasmonics, New York, NY (2015)
13. "Flexible and polarization controllable THz metamaterial absorber", International Workshop on Optical Terahertz Science and Technology, San Diego, CA (2015)
14. "Silicon-germanium and germanium nanowires for efficient THz emission", International Workshop on Optical Terahertz Science and Technology, San Diego, CA (2015)

15. "Modeling of the synthesis and nano characterization of ZnO nanorods for defense optoelectronics applications", Nanotechnology for Defense Conference, Chantilly, VA (2014)
16. "Synthesis and optical properties of undoped and aluminum doped ZnO nanowires for optoelectronic nanodevice applications", IEEE Summer Topical Meeting, Montreal, Canada (2014)
17. "Effect of Al properties of ZnO nanowires grown by chemical vapor deposition", EMC 2014, Santa Barbara, CA (2014)
18. "Comparative study of proton-irradiated AlGaN/GaN and AlInN/GaN transistor structures using atom probe tomography", EMC 2014, Santa Barbara, CA (2014)
19. "Chemical vapor deposition of ZnO nanowires under different growth regimes", EMC 2014, Santa Barbara, CA (2014)
20. "Polarization controllable stereometamaterials absorber", 39th International conference on Infrared, Millimeter and Terahertz Waves, Tucson, AZ (2014)
21. "Investigation Carrier dynamics of Al doped ZnO using THz time domain spectroscopy", 39th International conference on Infrared, Millimeter and Terahertz Waves, Tucson, AZ (2014)
22. "Effects of Saline on Terahertz Absorption of Aqueous Glucose at Physiological Concentrations Probed by THz-TDS", 38th International conference on Infrared, Millimeter and Terahertz Waves, Mainz, Germany (2013)
23. "Identification of Tissue Interaction of Terahertz radiation Toward Functional Tissue Imaging by Terahertz Spectroscopic Imaging", 38th International conference on Infrared, Millimeter and Terahertz Waves, Mainz, Germany (2013)
24. "Analysis of Terahertz Metamaterial Perfect Absorber by Using a Novel Quasi-Static RLC Circuit Model", 38th International conference on Infrared, Millimeter and Terahertz Waves, Mainz, Germany (2013)
25. "Terahertz Time Domain Spectroscopy and Carrier Dynamics of Al doped ZnO Nanowires", International Workshop on Optical Terahertz Science and Technology, Kyoto, Japan (2013)
26. "Identification of Tissue Interaction of Terahertz radiation Toward Functional Tissue Imaging", *International Workshop on Optical Terahertz Science and Technology, Kyoto, Japan (2013)*
27. "High Sensitivity Terahertz Metamaterials Perfect Absorbers for Sensing and Imaging", International Workshop on Optical Terahertz Science and Technology, Kyoto, Japan (2013)
28. "Terahertz Metamaterial Absorbers for Sensing and Imaging", Progress In Electromagnetics Research Symposium, Taipei, Taiwan (2013)
29. "Terahertz Functional Tissue Imaging", Progress In Electromagnetics Research Symposium, Taipei, Taiwan (2013)
30. "High Resolution Field Distributions in Metamaterial Structures using Apertureless Terahertz Near-field Imaging", *SPIE Photonics West, San Francisco, CA (2013)*
31. "Theoretical and Experimental Investigation of Hybrid Broadband Terahertz Metamaterial Absorber", *SPIE Photonics West, San Francisco, CA (2013)*
32. "Identification of Tissue Interaction of Terahertz radiation Toward Functional Tissue Imaging", *SPIE Photonics West, San Francisco, CA (2013)*

33. "Terahertz Metamaterials Perfect Absorbers for Sensing and Imaging", *SPIE Photonics West, San Francisco, CA (2013)*
34. "Laser assisted atom probe tomography of III-Nitride semiconductors and ZnO nanostructures", *IEEE NMDC Conference, Honolulu, HI (2012)*
35. "Temperature dependent carrier dynamics of ZnO nanowires by terahertz time domain spectroscopy", *IEEE NMDC Conference, Honolulu, HI (2012)*
36. "Highly efficient polarization insensitive terahertz metamaterial perfect absorber and imaging", *IEEE Photonics Conference, San Francisco, CA (2012)*
37. "Terahertz biomedical imaging technology", *Functional imaging for regenerative medicine, NIST, Gaithersburg, MD (2012)*
38. "Nanoscale Characteristics of Single Crystal Zinc Oxide Nanowires", *IEEE NANO 2011, Portland, OR, August (2011)*
39. "Quantum Dot Functionalized ZnO Nanowire/P3HT Hybrid Photovoltaic Devices," *IEEE NANO 2011, Portland, OR, August (2011)*
40. "Charge carrier lifetime in poly(3-hexylthiophe)/ZnO nanowire array based photovoltaic devices", *APS March Meeting, Dallas, TX, March (2011)*
41. "Terahertz spectroscopy of semiconductor materials and nanostructures," *APS March Meeting, Dallas, TX, March (2011)*
42. "Synthesis and optical properties of ZnO nanowires for nanophotonics," *IEEE NANO 2010, Seoul Korea, August (2010)*
43. "High resolution, two-dimensional image mapping of ZnO nanowires by confocal microphotoluminescence and microRaman Spectroscopy," *IEEE NANO 2010, Seoul Korea, August (2010)*
44. "Synthesis and optical properties of ZnO nanowires for nanophotonics," *IEEE UGIM 2010, West Lafayette, IN, June (2010)*
45. "Optical Properties of Closely Coupled Dilute Nitride Mid-infrared InNSb Quantum Dots," *IEEE-NANO, Arlington, TX (2008).*
46. "Optical Properties of Closely Coupled Dilute Nitride Mid-infrared InNSb Quantum Dots," *5th International Conference on Semiconductors Quantum Dots. Gyeongju, Korea (2008),*
47. "Comparative Analysis of Bio-Medical Imaging at 3.7um Terahertz with a High Power Quantum Cascade Laser," *US-Korea International Conference (UKC), Washington D.C. (2007),*
48. "Optical Properties and Characteristics of Dilute Nitride InN(As)Sb Quantum Well and Quantum Dot grown by MBE for Infrared Sensors Application," *Electronic Materials Conference, June, Notre Dame, IN (2007),*
49. "Comparative Analysis of Bio-Medical Imaging at 3.7 Terahertz with a High Power Quantum Cascade Laser" *IEEE LEOS Annual Meeting, October, Montreal, Canada (2006)*
50. "Investigation of Nitrogen Induced closely coupled Sb based Quantum Dots for Infrared Sensors Application" *Material Research Society, November, Boston (2006)*

51. "Investigation of Optical Properties of Nitrogen Incorporated Sb based Quantum Well and Quantum Dots for Infrared Sensors Application" *Material Research Society, November, Boston (2006)*
52. "Infrared InN(As)Sb Quantum Dots for Integrated Smart Sensor Application," *SPIE Photonics West Conference, January, San Jose, CA (2006)*
53. "Bio-Medical Imaging with a Terahertz Quantum Cascade Laser," *SPIE Photonics West Conference, January, San Jose, CA (2006)*
54. "Bio-Medical Terahertz Imaging with a Quantum Cascade Laser," *SPIE, Optics East, October, Boston, MA (2005)*
55. "Growth and Characterization of In(N)Sb/InAs Infrared Quantum Dots for Smart Sensor Application," *Electronic Materials Conference, June, Santa Barbara, CA (2005)*
56. "Multi-color quantum dot infrared photodetectors," *IEEE LEOS Annual Meeting, November, Puerto Rico (2004)*
57. "Multi-color quantum dot infrared photodetectors," *US-Korea International Conference (UKC), Dunham, NC (2004)*
58. "Multi-color quantum dot infrared photodetectors," *Electronic Materials Conference, June, Notre Dame, IN (2004)*
59. "Novel Terahertz nanostructure light sources," *SPIE, Defense and Security Symposium, April, Orlando, FL (2004)*
60. "Novel Terahertz nanostructure light sources," *SPIE Photonics West Conference, January, San Jose, CA (2004)*
61. "Characteristics of long wavelength quantum dot lasers," *IEEE LEOS Annual Meeting, October, Tucson, AZ (2003)*
62. "Characteristics of InGaAs/InGaP Quantum Dot Infrared Photodetector Grown by Metal Organic Chemical Deposition," *Material Research Society Fall Meeting, November, Boston, MA (2000)*
63. "Fabrication and characteristics of reliable operation of visible vertical cavity surface emitting lasers for POF application,". *The 10th Seoul International Symposium on the Physics of Semiconductors and Applications (ISPSA), Cheju, Korea (2000)*
64. "Fabrication and characteristics of reliable operation of visible vertical cavity surface emitting lasers for POF application," *7th Conference on Optoelectronics and Optical Communication, Pohang, Korea (2000)*
65. "Continuous Operation of 650-670 nm vertical cavity surface emitting laser diodes," *International Symposium Ultra-parallel Optoelectronics, February, Japan (2000)*
66. "Characteristics of self-assembled InGaAs/InGaP quantum dot mid-infrared photoconductive detectors grown by low pressure MOCVD," *SPIE Photonics West Conference, January, San Jose, CA (1999)*
67. "Growth and Characterization of self-assembled InGaAs/InGaP quantum dots for mid-infrared photoconductive detector by LP-MOCVD," *194th Electrochemical Society Meeting, November, Boston, MA (1998)*

68. "Growth and characterization of InGaAs/InGaP quantum dots for mid-infrared photodetectors," 4th International Conference on Electronic Materials (IUMRS), August, Cheju, Korea (1998)

LIST OF PUBLICATIONS

BOOKS

1. **S.M. Kim** and P. Kung, eds, "Hybrid nanostructure architecture: Materials, Electronics, Photonics and sensors" (Pan Stanford Publishing Pte. Ltd, 2016)

BOOK CHAPTERS

1. **S. M. Kim**, and M. Hokmabadi, "Terahertz Spectroscopy of biological Molecules," in *Terahertz biomedical Science and Technology*, pp 153-172, Edited by J. H. Son, Taylor & Francis Books, Inc (2014)
2. **S.M. Kim** and P. Kung, "Hybrid nanostructures for photovoltaic applications," in *Dekker Encyclopedia of Nanoscience & Nanotechnology*, 3rd Ed., eds. S.E. Lyshevski, (Boca Raton: CRC Press, 2014).
3. L. Larson, **S.M. Kim**, P. Kung, Q. Yu, Z. Liu, W. Geertz, "Nanotechnology in electronics," in *Organization for Economic Co-operation and Development (OECD) / Working Party on Manufactured Nanomaterial (WPMN)*, eds. W. Trybula and D. Newberry, (2012).
4. **S. Kim** and M. Razeghi, "Advances in Quantum Dot Structures" *Semiconductors and Semimetals*, Volume 73 *Processing and Properties of Compound Semiconductors*, Ed. by R. Willardson and E. Weber, pp. 119-214, Academic Press (2001).
5. **S. Kim** and M. Razeghi, "Recent advances in quantum dot optoelectronic devices and future trends" *Handbook of Advanced Electronic and Photonic Materials and Devices - Volume 2: Semiconductor Devices*, pp. 133-153, Academic Press (2000).
6. **S. Kim** and M. Razeghi, "Quantum Dot Optoelectronic Devices," *Recent Research Developments in Applied Physics*, Research Signpost (1998).

REFEREED JOURNALS ARTICLES

1. J. H. Kim, M. P. Hokmabadi, S. Balci, E. Rivera, D. Wilbert, P. Kung, and **S. M. Kim**, "Investigation of robust flexible conformal THz perfect metamaterial Absorber", *App. Phys. A*. 122, (2016)
2. M. P. Hokmabadi, E. Philips, E. Rivera, P. Kung, and **S.M. Kim**, "Plasmon induced transparency by hybridizing concentric-twisted double split ring resonators", *Nature Sci Rep*. 5: 15735 (2015) [10.1038/srep15735](https://doi.org/10.1038/srep15735)
3. M. P. Hokmabadi, J. H. Kim, E. Rivera, P. Kung, **S. M. Kim**, "Impact of substrate and bright resonances on group velocity in metamaterial without dark resonator", *Nature Scientific Reports*, 5: 14373 (2015) doi: [10.1038/srep14373](https://doi.org/10.1038/srep14373)
4. J.L. Pau, J. Waters, E. Rivera, **S.M. Kim**, and P. Kung, "Low leakage current ZnO nanowire Schottky photodiodes built by dielectrophoretic contact," *IEEE Electron Device Letters*, v36,n8, 814-816 (2015) [10.1109/LED.2015.2442678](https://doi.org/10.1109/LED.2015.2442678)
5. M. P. Hokmabadi, M. Zhu, P. Kung, and **S.M. Kim**, "Comprehensive study of terahertz metamaterial absorber by applying a hybrid approach on its circuit analogue", *Optical Materials Express* 5(8):1772 (2015) doi: [10.1364/OME.5.001772](https://doi.org/10.1364/OME.5.001772)

6. W. J. Lee, S. H. Jung, J. M Bae, J. W. Ma, K. S. Jeong, J. H. Kim, S. H. Oh, **S. M. Kim**, M. H. Cho, J. Park, "Nonequilibrium Photoexcited-Carrier Dynamics at Confined Surface of Si_{1-x}Gex Nanowires Measured by Optical Pump-THz Probe Spectroscopy", Nature Scientific Reports (under review, 2015)
7. A. Garcia, C. García Núñez, P. Rodraguez, G. Shen, **S. M. Kim**, P. Kung, J. Piqueras, J. Pau, "Continuous-flow system and monitoring tools for the dielectrophoretic integration of nanowires in light sensor arrays" Nanotechnology, 26, no. 11 (2015): 115502.
8. D. S. Wilbert, M. Hokmabadi, P. Kung, and **S. M. Kim**, "Spectroscopic Characteristics of Three Dimensional Split-Ring Resonator Arrays at Terahertz Frequencies", Journal of Nanoscience and Nanotechnology, 15, no. 3, 2289-2293 (2015) <http://dx.doi.org/10.1166/jnn.2015.10221>
9. M. Hokmabadi, D. S. Wilbert, P. Kung, and **S.M. Kim**, "Study of polarization dependent frequency selective THz stereometamaterial perfect absorber", Phys. Rev. Appl. no. 4: 044003 (2014) <http://dx.doi.org/10.1103/PhysRevApplied.1.044003>
10. A. Mohanta, J. Simmons, H. O. Everitt, G. Shen, **S. M. Kim**, and P. Kung, "Effect of pressure and Al doping on structural and optical properties of ZnO nanowires synthesized by chemical vapor deposition", J. of Luminescence, V 146, 470 (2014) <http://dx.doi.org/10.1016/j.jlumin.2013.10.028>
11. C. García Núñez, J.L. Pau, E. Ruíz, A. García Marín, B.J. García, J. Piqueras, G. Shen, D.S. Wilbert, **S.M. Kim**, P. Kung, "Enhanced fabrication process of zinc oxide nanowires for optoelectronics", Thin Solid Films, (2014) <http://dx.doi.org/10.1016/j.tsf.2013.12.011>
12. C.G. Nunez, A.F. Brana, J.L. Pau, D. Ghita, B.J. Garcia, G. Shen, D.S. Wilbert, S.M. Kim, and P. Kung, "Surface optical phonons in GaAs nanowires grown by Ga-assisted chemical beam epitaxy," Journal of Applied Physics 115, no. 3 (2014): 034307.
13. D. Wilbert, M. Hokmabadi, P. Kung, and **S. M. Kim**, "Equivalent-Circuit Interpretation of the Polarization Insensitive Performance of THz Metamaterial Absorbers", IEEE Trans. Terahertz Sci. and Tech. V3, n6, 846-850 (2013)
14. W. Baughman, H. Yokus, S. Balci, D. S. Wilbert, P. Kung, **S. M. Kim**, "Observation of hydrofluoric acid burns on osseous tissues by means of terahertz spectroscopic Imaging", IEEE Trans. Terahertz Sci. and Tech. V3, n4, 387 (2013)
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