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EDUCATION

Ph. D., Materials Science and Engineering, Georgia Institute of Technology, Atlanta, GA, Dec., 2005.

Master of Engineering, Chemical Engineering, Hunan University, Changsha, China, Jun., 2001.

Bachelor of Science, Materials Science and Engineering, Jilin University, Changchun, China, Jul., 1998.

APPOINTMENTS

- Aug. 2017 – Current, Professor, Department of Materials Science and Engineering, University of Wisconsin at Madison
- Aug. 2014 – Aug. 2017, Associate Professor, Department of Materials Science and Engineering, University of Wisconsin at Madison
- Sept. 2008 – Aug. 2014, Assistant Professor, Department of Materials Science and Engineering, University of Wisconsin at Madison
- Sept. 2008, KAUST (King Abdullah University of Science and Technology) Research Fellow, School of Materials Science and Engineering, Georgia Institute of Technology
- Feb. 2008 – Sept. 2008, Research Scientist I, School of Materials Science and Engineering, Georgia Institute of Technology.
- Jan. 2006 – Jan. 2008, Postdoctoral Fellow, School of Materials Science and Engineering, Georgia Institute of Technology

AWARDS

- Vilas Faculty Early Career Investigator Award (2017)
- Spangler Faculty Scholar Award, UW-Madison (2015)
- NSF CAREER Award (2012)
- DARPA Young Faculty Award (2011)
- 3M Non-tenured Faculty Award (2011)
- Ross Coffin Purdy Award, by *American Ceramic Society* (2009)
- KAUST (King Abdullah University of Science and Technology) Research Fellow (2008)
- Sigma Xi Best Faculty Paper Award, *Georgia Tech Chapter* (2008)
- Young Innovators Under 35 Award (TR35) by *Technology Review* (2007)

PUBLICATIONS

Peer Reviewed Journal Publications (total citation: >9,000; h-index: 43)

1. F. Wu, Y. Yu, H. Yang, L.N. German, Z. Li, J. Chen, W. Yang,* L. Huang, W. Shi, L. Wang, *Xudong Wang** "Simultaneous Enhancement of Charge Separation and Hole Transportation in TiO2-SrTiO3 Core-Shell Nanowire Photoelectrochemical System" ***Adv. Mater.***, Accepted (2017).
2. C. Yao, X. Yin, Y. Yu, Z. Cai,* *Xudong Wang** "Chemically-Functionalized Natural Cellulose Materials for Effective Triboelectric Nanogenerator Development" ***Adv. Funct. Mater.*** Accepted (2017).
3. Y. Yu, Z. Zhang, X. Yin, A. Kvit, Q. Liao, Z. Kang, X. Yan, Y. Zhang,* *Xudong Wang** "Enhanced Photoelectrochemical Efficiency and Stability Using A Conformal TiO_2 Film on A Black Silicon Photoanode" ***Nature Energy***, 2, 17045 (2017).
4. F. Wang, Y. Yu, X. Yin, P. Tian, *Xudong Wang** "Wafer-scale synthesis of ultrathin CoO nanosheets with enhanced electrochemical catalytic properties" ***J. Mater. Chem. A***, 5, 9060-9066 (2017).
5. J. Li, *Xudong Wang** "Research Update: Materials design of implantable nanogenerators for biomechanical energy harvesting" ***APL Materials***, 5, 073801 (2017).
6. Z. Li, F. Wang, *Xudong Wang**, "Hierarchical Branched Vanadium Oxide Nanorod@Si Nanowire Architecture for High Performance Supercapacitors" ***Small***, 3, 1603076, (2017).
7. J. Su, Z. Li, Y. Yu, *Xudong Wang**, "Atomic Layer Deposition for Advanced Electrode Design in Photoelectrochemical and Triboelectric Systems" ***Adv. Mater. Interfaces***, 4, 1600835 (2017).
8. Q. Pang, Y. Zhao, X. Bian, Y. Ju, *Xudong Wang*, Y. Wei*, B. Liu, F. Du, C. Wang, G. Chen* "Hybrid graphene@MoS2@TiO2 microspheres for use as a high performance negative electrode material for lithium ion batteries" ***J. Mater. Chem. A***, 5, 3667-3674 (2017).
9. X. Yin, *Xudong Wang** "Kinetics-Driven Crystal Facets Evolution at the Tip of Nanowires: A New Implementation of the Ostwald-Lussac Law" ***Nano Letters***, 16, 7078-7084 (2016).
10. Z. Zhang, C. Yao, Y. Yu, Z. Hong, M. Zhi, *Xudong Wang** "Mesoporous Piezoelectric Polymer Composite Films with Tunable Mechanical Modulus for Harvesting Energy from Liquid Pressure Fluctuation" ***Adv. Funct. Mater.***, 26, 6760-6765 (2016).
11. C. Yao, A. Hernandez, Y. Yu, Z. Cai, *Xudong Wang** "Triboelectric Nanogenerators and Power-Boards from Cellulose Nanofibrils and Recycled Materials" ***Nano Energy***, 30, 103-108 (2016).
12. F. Wang, J.H. Seo, G. Luo, M.B. Starr, Z. Li, D. Geng, X. Yin, S. Wang, D.G. Fraser, D. Morgan, Z. Ma, *Xudong Wang** "Nanometer-Thick Single-Crystalline Nanosheets Grown at the Water-Air Interface" ***Nat. Comm.***, 7, 10444 (2016).
13. Z. Li, C. Yao, Y.-C. Wang, S. Mikael, S. Gunasekaran, Z. Ma, Z. Cai, *Xudong Wang** "High-Density Platinum Nanoparticle-Decorated Titanium Dioxide Nanofiber Network for Efficient Capillary Photocatalytic Hydrogen Generation" ***J. Mater. Chem. A***, 4, 11672-11679 (2016).
14. Y. Yu, H. Sun, H. Orbay, F. Chen, C.G. England, W. Cai, *Xudong Wang** "Biocompatibility and in vivo operation of implantable mesoporous PVDF-based nanogenerators" ***Nano Energy***, 27, 275–281 (2016).
15. C. Yao, F. Wang, Z. Cai, *Xudong Wang** "Aldehyde-functionalized porous nanocellulose for effective removal of heavy metal ions from aqueous solutions" ***RSC Adv.***, 6, 92648-92654 (2016).
16. L. Zhang, Y. Yu, G.P. Eyer, G. Suo, L.A. Kozik, M. Fairbanks, *Xudong Wang*, T.L. Andrew* "All-Textile Triboelectric Generator Compatible with Traditional Textile Process" ***Adv. Mater. Technol.***, 1, 1600147 (2016).
17. F. Cao, J. Xiong, F. Wu, Q. Liu, Z. Shi, Y. Yu, *Xudong Wang*,* L. Li* "Enhanced Photoelectrochemical Performance from Rationally Designed Anatase/Rutile TiO2 Heterostructures" ***ACS Appl. Mater. Interfaces***, 8, 12239–12245 (2016).

18. Z. Zhang, D. Geng, *X.D. Wang** "Calculation of the piezoelectric and flexoelectric effects in nanowires using a decoupled finite element analysis method" ***J. Appl. Phys.***, 119, 154104 (2016).
19. Y. Yu, *Xudong Wang** "Chemical modification of polymer surfaces for advanced triboelectric nanogenerator development" ***Extreme Mech. Lett.***, 9, 514–530 (2016).
20. J. Su, Z. Li, Y. Zhang, Y. Wei, *Xudong Wang** "N-Doped and Cu-doped TiO2-B nanowires with enhanced photoelectrochemical activity" ***RSC Adv.***, 6, 16177 (2016).
21. F. Wang, X. Yin, *Xudong Wang** "Morphological control in the adaptive ionic layer epitaxy of ZnO nanosheets" ***Extreme Mech. Lett.***, 7, 64-70 (2016).
22. X. Yin, D. Geng, *Xudong Wang* * "Inverted Wedding Cake Growth Operated by the Ehrlich–Schwoebel Barrier in Two-Dimensional Nanocrystal Evolution" ***Angew. Chem. Int. Ed.***, 55, 2217-2221 (2016).
23. M. Cho, J.-H. Seo, D. Zhao, J. Lee, K. Xiong, X. Yin, Y. Liu, S. Liu, M. Kim, T.J. Kim, *Xudong Wang*, W. Zhou, Z. Ma* "Amorphous Si/SiO_2 distributed Bragg reflectors with transfer printed single-crystalline Si nanomembranes" ***J. Vac. Sci. Tech. B.***, 34, 040601 (2016).
24. J.W. Choi, Z. Li, C.T. Black, D.P. Sweat, *Xudong Wang*, P. Gopalan* "Patterning at the 10 nanometer length scale using a strongly segregating block copolymer thin film and vapor phase infiltration of inorganic precursors" ***Nanoscale***, 8, 11595-11601 (2016).
25. X. Yin, J. Shi, X. Niu, H. Huang, *Xudong Wang* * "Wedding Cake Growth Mechanism in One-Dimensional and Two-Dimensional Nanostructure Evolution" ***Nano Lett.***, 15, 7766–7772 (2015).
26. W. Yang, Y. Yu, M.B. Starr, X. Yin, Z. Li, A. Kvit, S. Wang, P. Zhao, *Xudong Wang** "Ferroelectric Polarization-Enhanced Photoelectrochemical Water Splitting in TiO_2–$BaTiO_3$ Core–Shell Nanowire Photoanodes" ***Nano Lett.***, 15, 7574-7580 (2015).
27. H. Li, Y. Yu, M.B. Starr, Z. Li, *Xudong Wang** "Piezotronic-Enhanced Photoelectrochemical Reactions in $Ni(OH)_2$-Decorated ZnO Photoanodes" ***J. Phys. Chem. Lett.***, 6, 3410-3416 (2015).
28. Y. Yu, Z. Li, Y. Wang, S. Gong, *Xudong Wang** "Sequential Infiltration Synthesis of Doped Polymer Films with Tunable Electrical Properties for Efficient Triboelectric Nanogenerator Development" ***Adv. Mater.***, 27, 4938-4944 (2015).
29. Y. Mao, D. Geng, E. Liang, *Xudong Wang** "Single-electrode triboelectric nanogenerator for scavenging friction energy from rolling tires" ***Nano Energy***, 15, 227-234 (2015).
30. M.B. Starr, *Xudong Wang** "Coupling of piezoelectric effect with electrochemical processes" ***Nano Energy***, 14, 296-311 (2015).
31. M. Cho, J.-H. Seo, J. Lee, D. Zhao, H. Mi, X. Yin, M. Kim, *Xudong Wang*, W. Zhou, Z. Ma "Ultra-thin distributed Bragg reflectors via stacked single-crystal silicon nanomembranes" ***Appl. Phys. Lett.***, 106, 181107 (2015).
32. Y. Yu, J. Li, D. Geng, J. Wang, L. Zhang, T.L. Andrew, M.S. Arnold, *Xudong Wang** "Development of Lead Iodide Perovskite Solar Cells Using Three-Dimensional Titanium Dioxide Nanowire Architectures" ***ACS Nano***, 9, 564–572 (2015).
33. Z. Li, F. Wang, A. Kvit, *Xudong Wang** "Nitrogen Doped 3D Titanium Dioxide Nanorods Architecture with Significantly Enhanced Visible Light Photoactivity" ***J. Phys. Chem. C***, 119, 4397-4405 (2015).
34. H. Hong, F. Wang, Y. Zhang, S.A. Graves, S.B.Z. Eddine, Y. Yang, C.P. Theuer, R.J. Nickles, *Xudong Wang**, W. Cai* "Red Fluorescent Zinc Oxide Nanoparticle: A Novel Platform for Cancer Targeting" ***ACS Appl. Mater. Interfaces***, 7, 3373–3381 (2015).
35. Z. Li, C. Yao, F. Wang, Z. Cai, *Xudong Wang** "Cellulose nanofiber-templated threedimension TiO2 hierarchical nanowire network for photoelectrochemical photoanode" ***Nanotechnology***, 25, 504005 (2014).

36. *Xudong Wang**, Z. Li, J. Shi, Y. Yu "One-Dimensional Titanium Dioxide Nanomaterials: Nanowires, Nanorods, and Nanobelts" ***Chem. Rev.***, 114, 9346–9384 (2014).
37. Z. Zhang, Q. Liao, Y. Yu, *Xudong Wang**, Y. Zhang, "Enhanced photoresponse of ZnO nanorods-based self-powered photodetector by piezotronic interface engineering" ***Nano Energy***, 9, 237–244 (2014).
38. F. Wang, *Xudong Wang** "Mechanisms in the solution growth of freestanding two-dimensional inorganic nanomaterials" ***Nanoscale***, 6, 6398-6414 (2014).
39. Y. Yu, X. Yin, A. Kvit, *Xudong Wang** "Evolution of Hollow TiO_2 Nanostructures via the Kirkendall Effect Driven by Cation Exchange with Enhanced Photoelectrochemical Performance" ***Nano Lett.***, 14, 2528–2535 (2014).
40. Y. Mao, H. Yang, J. Chen, J. Chen, Y. Tong, *Xudong Wang** "Significant performance enhancement of ZnO photoanodes from $Ni(OH)_2$ electrocatalyst nanosheets overcoating" ***Nano Energy***, 6, 10-18 (2014).
41. Y. Mao, P. Zhao, G. McConohy, H. Yang, Y. Tong, *Xudong Wang** "Sponge-Like Piezoelectric Polymer Films for Scalable and Integratable Nanogenerators and Self-Powered Electronic Systems" ***Adv. Energy. Mater.***, 4, 130624 (2014).
42. Z. Li, C. Yao, Y. Yu, Z. Cai, *Xudong Wang** "Highly-Efficient Capillary Photoelectrochemical Water Splitting Using Cellulose Nanofiber-Templated TiO_2 Photoanodes" ***Adv. Mater.***, 26, 2262-2267 (2014).
43. F. Wang, J.-H. Seo, Z. Li, A.V. Kvit, Z. Ma, *Xudong Wang** "Cl-Doped ZnO Nanowires with Metallic Conductivity and Their Application for High-Performance Photoelectrochemical Electrodes" ***ACS Appl. Mater. Interfaces***, 6, 1288–1293 (2014).
44. J. Shi, Z. Li, A. Kvit, S. Krylyuk, A.V. Davydov, *Xudong Wang** "Electron Microscopy Observation of TiO2 Nanocrystal Evolution in High-Temperature Atomic Layer Deposition" ***Nano Lett.***, 13 5727-5734 (2013).
45. *Xudong Wang** "Piezotronics: A new field of strain-engineered functional semiconductor devices" ***The Bulletin of the American Ceramic Society***, 92(6) 18-23 (2013).
46. M.B. Starr, *Xudong Wang** "Fundamental Analysis of Piezocatalysis Process on the Surfaces of Strained Piezoelectric Materials" ***Scientific Reports***, 3, 2160 (2013).
47. F. Wang, J.E. Jakes, D. Geng, *Xudong Wang** "Spontaneous Phase Transformation and Exfoliation of Rectangular Single-Crystal Zinc Hydroxy Dodecylsulfate Nanomembranes" ***ACS Nano***, 7, 6007-6016 (2013).
48. D. Geng, A. Pook, *Xudong Wang** "Mapping of strain–piezopotential relationship along bent zinc oxide microwires" ***Nano Energy***, 2, 1225-1231 (2013).
49. J. Shi, P. Zhao, *Xudong Wang** "Piezoelectric-Polarization-Enhanced Photovoltaic Performance in Depleted-Heterojunction Quantum-Dot Solar Cells", ***Adv. Mater.***, 25, 916-921 (2013).
50. *Xudong Wang**, J. Shi, "Evolution of titanium dioxide one-dimensional nanostructures from surface-reaction-limited pulsed chemical vapor deposition" ***J. Mater. Res.***, 28, 270-279 (2013).
51. Q. Zhang , X. Deng , P.Z.G. Qian, *Xudong Wang** "Spatial modeling for refining and predicting surface potential mapping with enhanced resolution" ***Nanoscale***, 5, 921-926 (2013).
52. B. Nikoobakht*, *Xudong Wang**, A. Herzing, J. Shi "Scalable synthesis and device integration of self-registered one-dimensional zinc oxide nanostructures and related materials" ***Chem. Soc. Rev.***, 42, 342-365 (2013).
53. M. Leong, D. Bayerl, J. Shi, *Xudong Wang* "Evolution of Lead Titanate Nanostructures from Nanoparticle Self-Assembly" ***Sci. Adv. Mater.***, 4, 832-836 (2012).

54. J. Shi, *Xudong Wang* "Hierarchical TiO2–Si nanowire architecture with photoelectrochemical activity under visible light illumination" ***Energy Environ. Sci.***, 5, 7918-7922 (2012).
55. M.B. Starr J. Shi, *Xudong Wang* "Piezopotential-Driven Redox Reactions at the Surface of Piezoelectric Materials" ***Angew. Chem. Int. Ed.*** 51, 5962-5966 (2012).
56. J. Shi M.B. Starr, *Xudong Wang* "Band Structure Engineering at Heterojunction Interfaces via Piezotronic Effect" ***Adv. Mater.*** 24, 4683–4691 (2012).
57. F. Wang, J.H. Seo, Z. Ma, *Xudong Wang* "Substrate-Free Self-Assembly Approach toward Large-Area Nanomembranes" ***ACS Nano***, 6, 2602-2609 (2012).
58. A.B. Yankovich, B. Puchala, F. Wang, J.-H. Seo, D. Morgan, *Xudong Wang*, Z. Ma, A.V. Kvit, P.M. Voyles "Stable p-Type Conduction from Sb-Decorated Head-to-Head Basal Plane Inversion Domain Boundaries in ZnO Nanowires" ***Nano Lett.***, 12, 1311-1316 (2012)
59. D.J. Bayerl, *Xudong Wang* "Three-Dimensional Kelvin Probe Microscopy for Characterizing In-Plane Piezoelectric Potential of Laterally Deflected ZnO Micro-/Nanowires" ***Adv. Funct. Mater.***, 22, 652-660 (2012).
60. *Xudong Wang* "Piezoelectric nanogenerators-Harvesting ambient mechanical energy at the nanometer scale" ***Nano Energy***, 1, 13-24 (2012).
61. J. Shi, M.B. Starr, H. Xiang, Y. Hara, M.A. Anderson, J.-H. Seo, Z. Ma, *Xudong Wang* "Interface Engineering by Piezoelectric Potential in ZnO-Based Photoelectrochemical Anode" ***Nano Lett.***, 11, 5587-5593 (2011).
62. J. Shi, *Xudong Wang* "Functional semiconductor nanowires via vapor deposition" ***J. Vac. Sci. Technol. B***, 29, 060801 (2011). (invited review article + cover)
63. S. Bai, W. Wu, Y. Qin, N. Cui, D.J. Bayerl, *Xudong Wang* "High-Performance Integrated ZnO Nanowire UV Sensors on Rigid and Flexible Substrates" ***Adv. Funct. Mater.***, 21, 4464–4469 (2011).
64. C. Sun, J. Shi, D.J. Bayerl, *Xudong Wang* "PVDF microbelts for harvesting energy from respiration", ***Energy Environ. Sci.***, 4, 4508-4512 (2011).
65. H. Hong, J. Shi, Y. Yang, Y. Zhang, J.W. Engle, R.J. Nickles, *Xudong Wang*, W. Cai, "Cancer-Targeted Optical Imaging with Fluorescent Zinc Oxide Nanowires" ***Nano Lett.***, 11, 3744–3750 (2011).
66. J. Shi, Y. Hara, C. Sun, M.A. Anderson, *Xudong Wang* "Three-Dimensional High-Density Hierarchical Nanowire Architecture for High-Performance Photoelectrochemical Electrodes" ***Nano Lett.***, 11, 3413-3419 (2011).
67. J. Shi, H. Hao, Y. Ding, Y, Yang, F. Wang, W. Cai, *Xudong Wang* "Evolution of zinc oxide nanostructures through kinetics control" ***J. Mater. Chem.***, 21(2011) 9000 - 9008. (journal cover)
68. F. Wang, J.-H. Seo, D. Bayerl, J. Shi, H. Mi, Z. Ma, D. Zhao, Y. Shuai, W. Zhou, *Xudong Wang* "An aqueous solution-based doping strategy for large-scale synthesis of Sb-doped ZnO nanowires" ***Nanotechnology***, 22 (2011) 225602.
69. J. Shi, *Xudong Wang* "Growth of Rutile Titanium Dioxide Nanowires by Pulsed Chemical Vapor Deposition" ***Cryst. Growth & Design***, 11 (2011) 949-954.
70. J. Shi, C. Sun, M. B. Starr, *Xudong Wang* "Growth of Titanium Dioxide Nanorods in 3D-Confined Spaces." ***Nano Lett.***, 11 (2011) 624-631.
71. C. Sun, J. Shi, *Xudong Wang* "Fundamental study of mechanical energy harvesting using piezoelectric nanostructures" ***J. Appl. Phys.***, 108 (2010) 034309.
72. F. Wang, Y. Hwang, P.Z.G. Qian, *Xudong Wang* "A Statistics-Guided Approach to Precise Characterization of Nanowire Morphology" ***ACS Nano***, 4 (2010) 855-862.

73. J. Shi, *Xudong Wang* "Strain versus Dislocation Model for Understanding the Heteroepitaxial Growth of Nanowires", ***J. Phys. Chem. C***, 114 (2010) 2082–2088.
74. J. Shi, S. Grutzik and *Xudong Wang* "Zn Cluster Drifting Effect for the Formation of ZnO 3D Nanoarchitecture" ***ACS Nano***, 3 (2009) 1594–1602. (journal cover)
75. C. Xu, *Xudong Wang* and Z.L. Wang "Nanowire Structured Hybrid Cell for Concurrently Scavenging Solar and Mechanical Energies" ***J. Am. Chem. Soc.***, 131 (2009) 5866-5872.
76. J.R. Morber, *Xudong Wang*, J. Liu, R.L. Snyder Z.L. Wang "Wafer-Level Patterned and Aligned Polymer Nanowire/ Micro- and Nanotube Arrays on any Substrate", ***Adv. Mater.***, 21 (2009) 2072-2076.
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80. J. Liu, P. Fei, J. Song, *Xudong Wang*, C. Lao, R. Tummala and Z. L. Wang "Carrier density and Schottky barrier on the performance of DC nanogenerator", ***Nano Lett.***, 8 (2008) 328-332.
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84. *Xudong Wang*, J. Song, J. Liu and Z.L. Wang "DC Nanogenerator Driven by Ultrasonic Wave", ***Science*** 316 (2007) 102-105.
85. *Xudong Wang*, J. Liu, J. Song and Z.L. Wang "Integrated Nanogenerators in Bio-fluid", ***Nano Lett.*** 7 (2007) 2475-2479.
86. X.H. Zhang, B. Domercq, *Xudong Wang*, S. Yoo, T. Kondo, Z.L. Wang and B. Kippelen "High performance pentacene field-effect transistors using Al_2O_3 gate dielectrics prepared by atomic layer deposition (ALD)", ***Org. Electron.*** 8 (2007) 718-726.
87. M. Kirkham, *Xudong Wang*, Z.L. Wang and R.L. Snyder "Solid Au nanoparticles as a catalyst for growing aligned ZnO nanowires: a new understanding of the VLS process", ***Nanotechnology*** 18 (2007) 365304.
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92. J.H. Huang*, *Xudong Wang** (*equally contributed) and Z.L. Wang, "Controlled Replication of Butterfly Wings for Achieving Tunable Photonic Properties", ***Nano Lett.*** 6 (2006) 2325-2331. (highlighted by *Materials World*, Feb. 2007)

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110. *Xudong Wang*, P. Gao, J. Li, C.J. Summers and Z.L. Wang "Rectangular Porous ZnO-ZnS Nanocables and ZnS Nanotubes", ***Adv. Mater.*** 14 (2002) 1732-1735.

Invited Book Chapters

1. Y. Yu and *Xudong Wang** "Semiconductor Nanowires for Energy Harvesting", Chapter 9 in Semiconductor Nanowires II: Properties and Applications, ed. S.A. Dayeh, A.F. i Morral and C. Jagadishi, Elsevier, (2015).
2. *Xudong Wang** "Piezoelectric and Piezotronic Effects in Energy Harvesting and Conversion", Chapter 4 in Nanotechnology for the Energy Challenge, ed. J. Garcia-Martinez, Wiley-VCH (2013).
3. *Xudong Wang** and J. Shi "Piezoelectric Nanogenerators for Self-powered Nanodevices", Chapter 5 in Piezoelectric Nanomaterials for Biomedical Applications, ed. G. Ciofani, and A. Menciassi, Springer, (2012).
4. J. Shi, and *Xudong Wang** "Bio-inspired 3D Nanoarchitectures", Chapter 2 in *Three-Dimensional Nanoarchitectures*, ed. W. Zhou et al., Springer (2011).
5. *Xudong Wang*, and Z.L. Wang "Mechanical Energy Harvesting Using Wurtzite Nanowires", Chapter 7 in *Nano-Bio-Electronic, Photonic and MEMS Packaging*, ed. C.P. Wong et al., Springer (2009).
6. *Xudong Wang*, Z.L. Wang, H.J. Jiang, L. Zhu, C.P. Wong and J.E. Morris "Nanomaterials and Nanopackaging", Chapter 15 in *Materials for Advanced Packaging*, ed. D. Lu and C.P. Wong, Springer (2009).
7. J. H. Song, *Xudong Wang*, J. Liu, W. Mai, J. Zhou and Z.L. Wang "ZnO Nanowire and Nanobelts: Aligned Growth, Mechanical Properties and Applications in Nanogenerators", in *Metal oxide nanostructures for field emission applications*, ed. R.T.Rajendra Kumar, American Scientific Publishers (2008).
8. *Xudong Wang* and Z. L. Wang "Photonic Crystals and Devices" in *Advanced Scanning Microscopy for Nanotechnology*, ed. W. L. Zhou and Z. L. Wang, Springer (2006).
9. Z. L. Wang, *Xudong Wang* and R. P. Gao "Nanotubes, Nanowires and Nanobelts", in *Microsystems and Nanotechnology*, ed. Z. Y. Zhou, R. Zhu and Z. L. Wang, Science Publisher, Beijing, China (2006).
10. *Xudong Wang* and Z.L. Wang "Nanobelts and Nanowires of Functional Oxides", Chapter 4 in *Nanoengineering of Structural, Functional and Smart Materials*, ed. Mark.J.Schulz, CRC Press (2005).

Patents

1. ***Xudong Wang***, Chunhua Yao, Zhiyong Cai, Yanhao Yu "Triboelectric Power Fiberboards from Cellulose Nanofibrils and Recycled Materials" US Patent pending, (2016).
2. ***Xudong Wang,*** Yanchao Mao, Ping Zhao "Nano-porous piezoelectric polymer film for mechanical energy harvesting", US Patent No 9,444,030, (2016).
3. ***Xudong Wang***, Zhaodong Li, Zhiyong Cai, Chunhua Yao "Capillary Photoelectrochemical Water Splitting Based on Nano Cellulose Templates", US Patent pending, 14/166,740 (2014).
4. ***Xudong Wang***, Jian Shi "Methods for the growth of three-dimensional nanorod networks", U.S. Patent No. 8,771,822 (2014).
5. ***Xudong Wang***, Fei Wang, Alex Kvit "Solution-based Synthesis of Doped ZnO Nanostructures", US Patent pending, WARF: P130385US01. (Aug. 2013)
6. ***Xudong Wang***, Zhengqiang Ma, Fei Wang, Jung-Hun Seo "Wafer-scale production of single, free-standing oxides nanomembranes for transparent and flexible electronics", US Patent No. 8,502,218 (2013).
7. Z. L. Wang, ***Xudong Wang***, J. R. Morber, J. Liu "One-step synthesis and patterning of aligned polymer nanowires on a substrate" US Patent No. 8,053,376.

8. Z. L. Wang, ***Xudong Wang***, J.H. Song J. Zhou, J.-H. He "Nanogenerator Compressing Piezoelectric Semiconducting Nanostructures and Schottky Conductive Contacts" US Patent No. 8,039,834.
9. Z. L. Wang, ***Xudong Wang*** "Hybrid Solar Nanogenerator Cells" US Patent No. 7,705,523.
10. Z. L. Wang, ***Xudong Wang***, Y. Qin, R. Yang "Flexible Nanogenerators" US Patent No. 7,982,370.
11. ***Xudong Wang***, Z. L. Wang, E. Graugnard, J. S. King, and C. J. Summers "Large Scale Patterned Growth of Aligned One-Dimensional Nanostructures", US patent No. 7,351,607.

Invited Conference Presentations

1. "Flexible Polymer Nanogenerators for Biomechanical Energy Harvesting", European Advanced Materials Congress, Stockholm, Sweden, Aug. 22-24, 2017.
2. "Nanometer-Thick Oxides Thin Films for High Performance Photoelectrochemical Electrode Development" ICMAT, Singapore, June 19, 2017.
3. "Flexible Polymer Nanogenerators for Biomechanical Energy Harvesting", ECS Meeting, New Orleans, LA, May 28 - June 1, 2017
4. "Piezotronics-Regulated Electrochemical and Catalytic Materials and Devices", MRS Spring Meeting, Phoenix, AZ, April 17-21, 2017.
5. "Materials Engineering for the Development of Flexible Nanogenerators", Materials Challenges in Alternative and Renewable Energy, Jeju Island, Korea, Feb. 20-24, 2017.
6. "Ultrathin nanosheets of functional oxide materials" 2017 5th SKKU Workshop on Materials Frontier Research, Seoul, Korea, Feb. 20-21, 2017.
7. "Piezotronics-Regulated Electrochemical and Catalytic Materials and Devices", Electronic Materials and Applications Conference, Orlando, FL, Jan. 18-20, 2017.
8. "Triboelectricity from Car Tires" IDTechEx Show, Santa Clara, CA, Nov. 16-17, 2016.
9. "Materials Engineering for the Development of Flexible Nanogenerators" the International Conference on Nanoenergy and Nanosystems 2016, Beijing, China, July 13-15, 2016.
10. "Piezotronics Enhancement in Solar Energy Harvesting and Electrochemical Catalytic Systems" The 11th Sino-US Symposium on Nanoscale Science and Technology, Nanjing, China, June 18-20, 2016.
11. "Piezotronics-regulated electrochemical and catalytic materials and devices" the 3rd International Conference on Nanogenerators and Piezotronics, Rome, Italy, June 15-17, 2016.
12. "Piezotronics-regulated electrochemical and catalytic materials and devices" Ceramics for Energy Workshop, San Diego, CA, June 3-4, 2016.
13. "Nanogenerators: Harvesting Mechanical Energy from Environment" Sustainable Energy Challenges and Solutions Seminar, Wisconsin Energy Institute, March 7, 2016.
14. "Piezotronics-regulated electronic, electrochemical and catalytic performance in piezoelectric semiconductor materials and devices" International Workshop on Self-powered Intelligent Nanodevices and Nanosystems, Singapore, Feb. 29, 2016.
15. "Development of Hierarchical 3D Nanowire Architectures by High-Temperature Derivatives of Atomic Layer Deposition" 2015 Synthesis and Processing Science Principal Investigators' Meeting, Gaithersburg, MD, Nov. 2-4, 2015.
16. "High-Performance Photoelectrodes from 3D Nanowire Architectures by High-Temperature Derivatives of Atomic Layer Deposition", International Workshop on Thin-Films for Electronics, Electro-optics, Energy, and Sensors, Suzhou, China, Jul. 4 - 6, 2015.

17. "Development of Hierarchical 3D Nanowire Architectures by High-Temperature Derivatives of Atomic Layer Deposition for Efficient Solar Energy Conversion", 15th International Conference on Atomic Layer Deposition, Portland, OR, June 28-July 1, 2015.
18. "3D Nanowire Architectures and Piezocatalysis Effect for Efficient Electrochemical Hydrogen Evolution" TMS Annual Meeting, Orlando, FL, March 18, 2015
19. "Piezotronics-Enabled/Enhanced Charge Transfer in the Applications of Energy Conversion" the First International Conference on Nanoenergy and Nanosystems 2014, Beijing, China, Dec. 8-10, 2014.
20. "Strain-Regulated Electronic, Electrochemical and Catalytic Performance in Piezoelectric Semiconductor Materials and Devices" MRS Fall Meeting 2014, Boston, December 1-5, 2014.
21. "Design and Synthesis of Hierarchical 3D Nanowire Architectures by High-Temperature Derivatives of Atomic Layer Deposition", MRS Fall Meeting 2014, Boston, December 1-5, 2014.
22. "Piezotronic Effect in Electrochemical Processes and Solar Energy Conversion", 2nd International Conference on Nanogenerators and Piezotronics, Atlanta, GA, June 9-11, 2014.
23. "Piezotronic Effect in Electrochemical Processes and Solar Energy Conversion", MRS Spring Meeting, San Francisco, CA, Apr. 21-25, 2014.
24. "3D TiO_2 Nanostructures Grown by High Temperature ALD for High-Efficiency Photoelectrochemical Anodes", AIChE Midwest Regional Conference, Chicago, IL, March 10, 2014.
25. "3D Nanowire Architectures for Highly-efficient Photoelectrochemical Anodes", Energy Materials Nanotechnology Spring Meeting, Las Vegas, NV, Feb. 27-March 2, 2014.
26. "3D Nanowire Architectures for Highly-Efficient Photoelectrochemical Anodes", 7th International Conference on Materials for Advanced Technologies (ICMAT), Singapore, Jun. 30-Jul. 5, 2013.
27. "Evolution of TiO_2 One-Dimensional Nanomaterials from Surface-Reaction-Limited Pulsed Chemical Vapor Deposition", MRS Spring Meeting, San Francisco, CA, Apr. 1-5, 2013.
28. "Piezotronic Effect in Electrochemical Processes and Soar Energy Conversion", Xiangshan Conference on the frontier of Piezotronics and Nanogenerators, Beijing, China, Dec.5-7, 2012.
29. "Three-Dimensional Nanowire Architectures for Highly-Efficiency Photoelectrochemical Electrodes", 222nd Meeting of ECS, Honolulu, HI, Oct. 7-12, 2012.
30. "High Density Branched TiO_2 Nanowire Architectures for Efficient Photocatalyzed Water Splitting", MS&T 2012 meeting, Pittsburg, PA, Oct. 7-11, 2012.
31. "3D Nanowire Architectures for Highly-Efficient Photoelectrochemical Anodes", The 12th Emerging Information and Technology Conference, Toronto, Ontario, Canada, Aug. 16-17, 2012.
32. "Coupling between Piezoelectric Effect and Electrochemical Reactions – A New Route of Energy Conversion", MRS Spring Meeting, San Francisco, CA, Apr. 9-13, 2012.
33. "Solution-based strategies for synthesizing ZnO nanostructures with controlled morphology and composition", Invited talk, SPIE-Photonics West, San Francisco, CA, Jan. 22-26, 2012.
34. "Nanogenerators: Generating Electricity from the Human Body", Nite @ The Lab Lecture, Wisconsin Alumni Association, Jan. 4, 2012.
35. "Three-Dimensional Nanowire Networks for Highly-Efficiency Photoelectrochemical Electrodes" Invited presentation, 7th Annual Minnesota Nanotechnology Workshop, University of Minnesota-Twin City, MN, Nov. 15-16, 2011.
36. "Piezoelectric Nanogenerators for Mechanical Energy Harvesting", Invited presentation, IMAPS 2011-44th International Symposium on Microelectronics, Long Beach, CA, Oct. 9-13, 2011.
37. "Novel Nanostructures and Applications of Zinc Oxide and Titanium Dioxide", Technical seminar, 3M, St Paul, MN, Aug. 1, 2011.

38. "Growth and Applications of Novel ZnO Nanomaterials", Invited seminar, ASM-Milwaukee Chapter, New Technology Night, Milwaukee, WI, Feb. 8, 2011.
39. "Multifunctional ZnO Nanostructures: from material growth to novel applications", Invited presentation, SPIE-Photonics West, San Francisco, CA, Jan. 22-27, 2011.
40. "ZnO Nanostructures for Mechanical Energy Harvesting" Invited presentation, ACerS-Electronic Materials and Applications 2011, Orlando, Jan. 19-21, 2011.
41. "Piezoelectric Zinc Oxide Nanostructures and Their Potential for Mechanical Energy Scavenging", Invited presentation, MS&T 2010 meeting, Houston, TX, October 17-21, 2010.
42. "Novel ZnO-Based Nanomaterials and Nanodevices", Invited presentation, NSF/MEXT Exchange, University of Illinois Urbana-Champaign, October 3-4, 2010.
43. "Powering the Nanoworld", (Invited talk as 2007 TR35 honoree) Emerging Technology Conference, MIT, Boston, MA, Sept. 25-27, 2007.