

Curriculum Vitae



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PROFESSIONAL POSITIONS

University of Illinois

Professor in Electrical and Computer Engineering (2015-)
Willet Faculty Scholar, College of Engineering (2015-)
Associate Professor in Electrical and Computer Engineering (2012-2015)
Assistant Professor in Electrical and Computer Engineering (2007-2012)
Faculty Affiliate, Mechanical Science and Engineering (2011-)
Research Faculty, Materials Research Laboratory (2010-)
Faculty Affiliate, Beckman Institute (2007-)
Faculty Affiliate, Materials Science and Engineering (2007-)

EpiWorks Inc.

R&D Manager (2003-2007)
Senior Engineer (2001-2003)

University of Illinois

Research Assistant Professor (1998-2001)
Postdoctoral Research Associate (1994-1998). Advisor: James J. Coleman

California Institute of Technology

Postdoctoral Research Fellow (1993-1994). Advisor: Nathan S. Lewis

University of California, Los Angeles

Research Assistant (1989-1993). Advisor: Robert L. Whetten

EDUCATION

Ph.D. in Chemistry, Physical Chemistry, University of California, Los Angeles, 1993
B.S. in Chemistry, Physical Chemistry, Peking University, China, 1986

HONORS and AWARDS

- IEEE Fellow (2017)
- Campus Excellent Teacher ranked by students, UIUC (2015)
- Faculty Entrepreneurial Fellow, Inaugural, College of Engineering, UIUC (2015-2016)
- Deputy Editor, Applied Physics Letters (2015-)
- Willett Faculty Scholar, College of Engineering, UIUC (2015-)
- Distinguished Lecturer, IEEE Nanotechnology Council (2014-2016)
- Board of governors, IEEE Photonics Society (2014-2016)
- A. T. Yang Research Award, ECE, UIUC (2013)
- Plenary Lecture, International Conference on Nano Science and Nano Technology, Korea (2012)
- Dean's Award for Excellence in Research, College of Engineering, UIUC (2012)
- *ONR Young Investigator Program Award*: Massively Parallel Planar III-V Nanowires and Rolled-up Tubes: Novel Platforms for High Linearity Electronics and Integrated Photonic Circuits (2011-14)
- *DARPA Young Faculty Award*: III-V nanowire FinFET on silicon: a bottom-up CMOS compatible approach (2009-2011)
- *NSF CAREER Award*: Semiconductor nanotubes - new nanotechnology building blocks and functionalities (2008-2013)
- Fellow, Center for Advanced Study: An All-Silicon Nanowire Tandem Solar Cell for \$1 per Watt Energy Conversion (2010-2011)

- Finalist, ECE Pratt Teaching award (2010)
- IEEE Senior Member (2008)
- Corresponding author of one of the Best Student Paper awards at IEEE Photonics Society (formerly LEOS) Annual Meeting (2008)
- Corresponding author of Outstanding Symposium Paper at Materials Research Society (2008)

PATENTS (3 Portfolios, 10 Awarded, 11+ Pending)

Patent Portfolio I: Metal-assisted chemical etching (MacEtch)

1. Metal-assisted chemical etching porous silicon formation method (Patent number: 6,790,785, awarded 09/14/2004). Inventors: Xiuling Li, Paul W. Bohn, Jonathan V. Sweedler
2. Metal-assisted chemical etching to produce porous group III-V materials (Patent number: 6,762,134, awarded 07/13/2004). Inventors: Paul W. Bohn, Xiuling Li, Jonathan V. Sweedler, Ilesanmi Adesida
3. Method of forming Nanoscale Three Dimensional Patterns in a Porous Material (Patent number: 8,586,843, awarded 07/16/2013). Inventors: Xiuling Li, David N. Ruzic, Ik Su Chun, Edmond K. C. Chow, Randolph E. Flauta
4. Metal-assisted chemical etching to produce III-V semiconductor nanostructures (Patent number: 8,951,430, awarded 02/10/2015). Inventors: Xiuling Li, Matthew T. Dejarld, Jae Cheol Shin, Winston Chern
5. Method of forming an array of high aspect ratio semiconductor nanostructures (Patent number: 8,980,656, awarded 03/17/2015). Inventors: Xiuling Li, Nicholas X. Fang, Placid M. Ferreira, Winston Chern, Ik Su Chun, Keng Hao Hsu
6. Method of Forming a Metal Pattern on a Semiconducting Substrate for Metal-Assisted Chemical Etching (Patent application number: 61/606,790, pending)
7. Magnetic field-guided MacEtch for 3D metamaterials (Patent application number: 61/904,899, pending). Inventors: Xiuling Li, Wen Huang, Paul Froeter, Weidong Zhou.
8. Optoelectronic device including a buried metal grating for extraordinary optical transmission (EOT) (Patent application number: 62/187,353, pending). Inventors: Xiuling Li, Daniel Wasserman, and Xiang Zhao.
9. Self-anchored Catalyst Metal-assisted chemical Etching (Record number 2016-046, provisional patent filed on 2/24/2016). Inventors: Xiuling Li, Jeongdong Kim, Lingyu Kong, and Sing Yang Chiam.
10. Complementary metal-oxide semiconductor compatible titanium nitride assisted chemical etching (Patent application number 62398722, pending). Inventors: Xiuling Li and Jeongdong Kim

Patent Portfolio II: Strain-induced self-rolled-up membranes (S-RUM)

11. Rolled-up transformer structure for a radio frequency integrated circuit (RFIC) (Patent number: 8,941,460, awarded 01/27/2015). Inventors: Xiuling Li, Wen Huang
12. Rolled-up transmission line structure for a radio frequency integrated circuit (RFIC) (Patent number: 9,018,050, awarded 04/28/2015). Inventors: Xiuling Li, Wen Huang
13. Rolled-up inductor structure for a radio frequency integrated circuit (RFIC) (Patent number: 9,224,532, awarded 12/29/2015). Inventors: Xiuling Li, Placid M. Ferreira, Wen Huang, Xin Yu
14. Extreme miniaturization of on-chip filters for high frequency or wearable electronics using self-rolled-up membrane (S-RUM) technology (Patent application number: 62/144,516). Inventors: Xiuling Li, Wen Huang, Moyang Li.
15. Method of making a chiral structure, and rolled-up structure with modulated curvature (Patent application number: 20150099116). Inventors: Xiuling Li, Paul J. Froeter, Kuen J. Hsia, Wen Huang

16. On-Chip Helical THz Antenna based on Self-Rolled-Up Membrane (S-RuM) Nanotechnology (Patent number: 62280160). Inventors: Xiuling Li, Wen Huang, and Paul J. Froeter.
17. Self-rolled-up graphene-on-diamond nanomembrane on-chip power inductors (Application number: 62394775, pending). Inventors: Xiuling Li and Wen Huang.

Patent Portfolio III: Nanowires

18. Method of fabricating a planar semiconductor nanowire (Patent number: 8,810,009, awarded 08/19/2014). Inventors: Xiuling Li, Seth A. Fortuna
19. Field effect transistor structure comprising a stack of vertically separated channel nanowires (Patent number: 9,224,809, awarded 12/29/2015). Inventors: Xiuling Li, Yi Song
20. One-Sided Source/Drain Contact in FinFET's for Ultimate Scaling (TF 2015-193, disclosure filed). Inventors: Xiuling Li, Yi Song.
21. Design of Asymmetric Gate FinFETs for High Performance Applications (Application No. 62/310,359, pending). Inventors: Xiuling Li, Yi Song.

PEER-REVIEWED JOURNAL PUBLICATIONS (120+ total; h-index 39 according to Google Scholar)

1. "Scaling the Aspect Ratio of Nanoscale Closely-Packed Silicon Vias by MacEtch: Kinetics of Carrier Generation and Mass Transport," J.D. Kim, P.K. Mohseni, K. Balasundaram, S. Ranganathan, J. Pachamuthu, J.J. Coleman, X. Li, *Adv. Funct. Mater.* Accepted.
2. "Enhancement-Mode Ga₂O₃ Wrap-Gate Fin Field-Effect Transistors on Native (100) β-Ga₂O₃ Substrate with High Breakdown Voltage," K. D. Chabak, N. Moser, A. J. Green, D. E. Walker Jr., S. E. Tetlak, E. Heller, A. Crespo, R. Fitch, J. McCandless, K. Leedy, M. Baldini, G. Wagner, Z. Galazka, X. Li, G. Jessen, *Appl. Phys. Lett.* **109**, 213501 (2016). **Selected as the cover image of Nov. 21, 2016 issue.**
3. "Evidences for redox reaction driven charge transfer and mass transport in metal-assisted chemical etching of silicon," L. Kong, B. Dasgupta, Y. Ren, P. K. Mohseni, M. Hong, X. Li, W. K. Chim, and S. Y. Chiam, *Sci. Rep.* **6**, 36583 (2016).
4. "Direct Observation of Dopants Distribution and Diffusion in GaAs Planar Nanowires with Atom Probe Tomography," J. Qu, W. Choi, P. K. Mohseni, X. Li, Y. Zhang, H. Chen, S. Ringer, and R. Zheng, *Appl. Mater. Interfaces*, **8** (39), 26244–26250 (2016).
5. "Enhanced axial confinement in a monolithically integrated self-rolled-up SiN_x vertical microring photonic coupler," X. Yu, L. L. Goddard, X. Li and X. Chen, *Appl. Phys. Lett.* **109**, 111104 (2016).
6. "Ultra-High Aspect Ratio InP Junctionless FinFETs by a Novel Wet Etching Method," Y. Song, P. K. Mohseni, S. H. Kim, J. C. Shin, T. Ishihara, I. Adesida, and X. Li, *IEEE Electron Dev. Lett.* **37**(8), 970-973 (2016).
7. "III-V Nanowire Transistors for Low-Power Logic Applications: a Review and Outlook," C. Zhang and X. Li, *IEEE Trans. Electron Dev.* **63**(1), 223 (2016).
8. "Enhanced Optical Transmission Through MacEtch-Fabricated Buried Metal Gratings," R. Liu, X. Zhao, C. Roberts, L. Yu, P. Mohseni, X. Li, V. Podolskiy, and D. Wasserman, *Adv. Mater.* **28**, 1441-1448 (2016).
9. "A Large-Area, Uniform White Light LED Source on A Stretchable Substrate," CW Sher, KJ Chen, CC Lin, HV Han, HY Lin, ZY Tu, HH Tu, K Honjo, HY Jiang, SL Ou, RH Horng, X. Li, CC Fu, and HC Kuo, *Optics Express*, **23** (19), A1167-A1178 (2015).
10. "Monolithically integrated self-rolled-up microtube-based vertical coupler for 3D photonic integration," X. Yu, E. Arbabi, L. L. Goddard, X. Li and X. Chen, *Appl. Phys. Lett.* **107**, 031102 (2015).

11. "InAs Planar Nanowire Gate-All-Around MOSFETs on GaAs Substrates by Selective Lateral Epitaxy," C. Zhang, W. Choi, P. Mohseni, and X. Li, *IEEE Electron Dev. Lett.* 36, 633 (2015).
12. "Quenched Phonon Drag in Silicon Nanowires Reveals Significant Effect in the Bulk at Room Temperature," J. Sadhu, H. Tian, J. Ma, B. Azeredo, J. Kim, K. Balasundaram, C. Zhang, X. Li, P. Ferreira, and S. Sinha, *Nano Lett.* 15 (5), 3159–3165 (2015).
13. "RF Performance of Planar III-V Nanowire-Array Transistors Grown by Vapor-Liquid-Solid Epitaxy," K. D. Chabak, X. Miao, C. Zhang, D. E. Walker Jr., P. K. Mohseni, and X. Li, *IEEE Electron Dev. Lett.* 36(5), 445-447 (2015).
14. "Evolution of GaAs Nanowire Geometry in Selective Area Epitaxy," K. P. Bassett, P.K. Mohseni, and X. Li, *Appl. Phys. Lett.* 106, 133102 (2015).
15. "Ultra-Small, High-Frequency, and Substrate-Immune Microtube Inductors Transformed from 2D to 3D," X. Yu, W. Huang, M. Li, T. M. Comberiate, S. Gong, J. E. Schutt-Aine, and X. Li, *Sci. Rep.* 5, 9661 (2015).
16. "Wide-Range Correlated Color Temperature Light Generation from Resonant Cavity Hybrid Quantum Dot Light Emitting Diodes," K.-J. Chen, C.-C. Lin, H.-V. Han, C.-Y. Lee, S.-H. Chien, K.-Y. Wang, S.-H. Chiu, Z.-Y. Tu, J.-R. Li, T.-M. Chen, X. Li, M.-H. Shih, and H.-C. Kuo, *J. Selected Topics in Quantum Electronics*, 21(4), 1900407 (2015).
17. "An Analytical Metal Resistance Model and Its Application for Sub-22nm Metal Gate CMOS," X. Miao, R. Bao, U. Kwon, K. Wong, W. Rausch, J. Bruley, P. DeHaven, W. Weng, R. Wachnik, R. Divakaruni, S. Grunow, M. Chudzik, V. Narayanan, X. Li, and S. Krishnan, *IEEE Electron Device Lett.* 36(4), 384-386 (2015).
18. "Efficient Hybrid White Light-emitting Diodes by Organic-Inorganic materials at different CCT from 3000K to 9000K," K.-J. Chen, Y.-C. Lai, B.-C. Lin, C.-C. Lin, S.-H. Chiu, Z.-Y. Tu, M.-H. Shih, P. Yu, P.-T. Lee, X. Li, H.-F. Meng, G.-C. Chi, T.-M. Chen, and H.-C. Kuo, *Optics Express*, 23 (7), A204–A210 (2015).
19. "Assembly of Micro/Nanomaterials into Complex, Three-dimensional Architectures by Compressive Buckling," S. Xu, Z. Yan, K. Jang, W. Huang, H. Fu, J. Kim, Z. Wei, M. Flavin, J. McCracken, R. Wang, A. Badea, H. Liu, D. Xiao, G. Zhou, J. Lee, H. U. Chung, H. Cheng, W. Ren, A. Banks, X. Li, U. Paik, R. G. Nuzzo, Y. Huang, Y. Zhang and J. A. Rogers, *Science*, 347 (6218), 154-159 (2015).
20. "Improvement of Light Quality by DBR Structure in White LED," H.-Y. Lin, K.-J. Chen, S.-W. Wang, C.-C. Lin, K.-Y. Wang, J.-R. Li, P.-T. Lee, M.-H. Shih, X. Li, H.-M. Chen, and H.-C. Kuo, *Optics Express*, 23 (3), A27–A33 (2015).
21. "Inverse Metal-Assisted Chemical Etching Produces Smooth High Aspect Ratio InP Nanostructures," S. H. Kim, P. K. Mohseni, Y. Song, T. Ishihara, and X. Li, *Nano Lett.* 15 (1), 641–648 (2015).
22. "High Speed Planar GaAs Nanowire Arrays with $f_{\max} > 75$ GHz by Wafer-Scale Bottom-up Growth," X. Miao, K. D. Chabak, C. Zhang, P. K. Mohseni, D. E. Walker Jr., and X. Li, *Nano Lett.* 15 (5), pp 2780–2786 (2015). **Selected as the cover image of May 2015 issue.**
23. "Scaling Junctionless Multigate MOSFETs by Step-doping in Channels," Y. Song and X. Li, *Appl. Phys. Lett.* 105 (22), 223506 - 223506-3 (2014).
24. "Site-Controlled Planar GaAs Nanowire Growth: Yield and Mechanism," C. Zhang, X. Miao, P. K. Mohseni, W. Choi, and X. Li, *Nano Lett.*, 14 (12), pp 6836–6841 (2014).
25. "Toward Intelligent Synthetic Neural Circuits: Directing and Accelerating Neuron Cell Growth by Self-Rolled-Up Silicon Nitride Microtube Array," P. Froeter, Y. Huang, O. V. Cangellaris, M. U. Gillette, J. C. Williams and X. Li, *ACS Nano*, 8 (11), 11108–11117 (2014).
26. "Ultrathin InAs Nanowire Growth by Spontaneous Au Nanoparticle Spreading on Indium-Rich Surfaces," K. Jung, P. K. Mohseni, and X. Li, *Nanoscale*, 6, 15293-15300 (2014).

27. "Precision Structural Engineering of Self-Rolled-up 3D Nanomembranes Guided by Transient Quasi-Static FEM Modeling," W. Huang, S. Koric, X. Yu, K. J. Hsia, and X. Li, *Nano Lett.*, 14 (11), 6293–6297 (2014).
28. "Transfer Printing of Tunable Porous Silicon Microcavities with Embedded Emitters," H. Ning, N. A. Krueger, X. Sheng, H. Keum, C. Zhang, K. D. Choquette, X. Li, S. Kim, J. A. Rogers & Paul V. Braun, *ACS Photonics*, 1 (11), 1144–1150 (2014).
29. "Device Architectures for Enhanced Photon Recycling in Thin-Film Multijunction Solar Cells," X. Sheng, M. H. Yun, C. Zhang, A. M. Al-Okaily, M. Masouraki, L. Shen, S. Wang, W. L. Wilson, J. Y. Kim, P. Ferreira, X. Li, E. Yablonovitch, and J. A. Rogers, *Adv. Energy Mater.* 1400919 (2014).
30. "Effect of Diameter Variation on Electrical Characteristics of Schottky Barrier InAs Nanowire MOSFETs," A. Razavieh, P. K. Mohseni, S. Mehrotra, S. Das, S. Suslov, X. Li, G. Klimeck, D. Janes, and J. Appenzeller, *ACS Nano*, 8 (6), 6281–6287 (2014).
31. "Monolithic III-V Nanowire Solar Cells on Graphene via Direct van der Waals Epitaxy," P. K. Mohseni, A. Behnam, J. D. Wood, X. Zhao, K. Yu, N. C. Wang, J. A. Rogers, J. W. Lyding, E. Pop, and X. Li, *Adv. Mater.* 26 (22), 3569-3572 (2014).
32. "III-V Junctionless Gate-All-Around Nanowire MOSFETs for High Linearity Low Power Applications," Y. Song, C. Zhang, R. Dowdy, K. Chabak, P. K. Mohseni, W. Choi, and X. Li, *IEEE Electron Dev. Lett.* 35 (3), 324-326 (2014).
33. "Planar GaAs Nanowire Tri-Gate MOSFETs by Vapor-Liquid-Solid Growth," *Solid State Electronics*, C. Zhang and X. Li, *Solid State Electronics*, 93, 40-42 (2014).
34. "Fabrication of Arbitrarily-Shaped Silicon and Silicon Oxide Nanostructures Using Tip-based Nanofabrication," H. Hu, P. K. Mohseni, L. Pan, X. Li, S. Somnath, J. Felts, M. A. Shannon, and W. P. King, *J. Vac. Sci. Tech. B*, 31(6), 06FJ01 (2013).
35. "Photonic Crystal Membrane Reflectors by Magnetic Field-Guided Metal-Assisted Chemical Etching," K. Balasundaram, P. Mohseni, Y.-C. Shuai, D. Zhao, W. Zhou, and X. Li, *Appl. Phys. Lett.* 103, 214103 (2013).
36. "3D Hierarchical Architectures Based on Self-Rolled-up Silicon Nitride Membranes," P. Froeter, X. Yu, W. Huang, F. Du, M. Li, I. Chun, S. Kim, K. J. Hsia, J.A. Rogers, and X. Li, *Nanotechnology*, 24, 475301 (2013).
37. "Perturbation of Au-assisted Planar GaAs Nanowire Growth by p-Type Dopant Impurities," R. Dowdy, C. Zhang, P. K. Mohseni, S. A. Fortuna, J. Wen, J. J. Coleman, and X. Li, *Optical Mater. Express*, 3(10), 1687-1697 (2013).
38. "DNA Detection using Plasmonic Enhanced Near-infrared Photoluminescence of Gallium Arsenide," L. Tang, I. Chun, Z. Wang, J. Li, X. Li, and Y. Lu, *Analytical Chem.* 85, 9522-7 (2013).
39. "III-As Pillar Array-Based Light Emitting Diodes Fabricated by Metal-Assisted Chemical Etching," P. K. Mohseni, S. H. Kim, X. Zhao, K. Balasundaram, J. D. Kim, L. Pan, J. A. Rogers, J. J. Coleman, and X. Li, *J. Appl. Phys.* 114, 064909 (2013).
40. "Wafer-Scale Production of Uniform InAsP Nanowire Array on Silicon for Heterogeneous Integration", J. C. Shin, A. Lee, P. K. Mohseni, D. Y. Kim, L. Yu, J. H. Kim, H. J. Kim, W. J. Choi, D. Wasserman, K. J. Choi, and X. Li, *ACS Nano* 7, 5463-5471 (2013).
41. "Carbon-doped GaAs Single Junction Solar Microcells Grown in Multilayer Epitaxial Assemblies," D. Kang, S. Arab, S. B. Cronin, X. Li, J. A. Rogers, and J. Yoon, *Appl. Phys. Lett.* 102, 253902 (2013).
42. "Monolithic Barrier-all-around Planar Nanowire High Electron Mobility Transistor with Planar GaAs Nanowire Channel," X. Miao, C. Zhang, and X. Li, *Nano Lett.* 13 (6), 2548, (2013).
43. "Silicon Nanowires with Controlled Sidewall Profile and Roughness Fabricated by Thin-Film Dewetting and Metal-Assisted Chemical Etching," B. Azeredo, J. Sadhu, J. Ma, K. Jacobs, J. Kim, K. Lee and J. Eraker, X. Li, S. Sinha, N. Fang, P. Ferreira, and K. Hsu, *Nanotechnology* 24, 225305, (2013).

44. "A Distributive-Transconductance Model for Border Traps in III-V/High-k MOS Capacitors," C. Zhang, M. Xu, P. D. Ye, and X. Li, *IEEE Electron Dev. Letts.* 34, 735 (2013).
45. "Doubling the Power Output of Bifacial Thin-Film GaAs Solar Cells by Embedding Them in Luminescent Waveguides," X. Sheng, L. Shen, T. Kim, L. Li, X. Wang, R. Dowdy, P. Froeter, K. Shigeta, X. Li, R. G. Nuzzo, N. C. Giebink, and J. A. Rogers, *Adv. Energy Mater.* 3, 991–996 (2013).
46. "Anomalous Modulation of a Zero Bias Peak in a Hybrid Nanowire-Superconductor Device," A.D.K. Finck, D.J. Van Harlingen, P.K. Mohseni, K. Jung, and X. Li, *Phys. Rev. Lett.* 110, 126406 (2013).
47. "InxGa1-xAs Nanowire Growth on Graphene: van der Waals Epitaxy Induced Phase Segregation," P. K. Mohseni, A. Behnam, J. D. Wood, C. English, J. W. Lyding, E. Pop, and X. Li, *Nano Lett.* 13 (3), 1153–1161 (2013).
48. "Relationship between Planar GaAs Nanowire Growth Direction and Substrate Orientation," R. Dowdy, D. Walko, and X. Li, *Nanotechnology* 24, 035304 (2013).
49. "Thermal Conductivity of Silicon Nanowire Arrays with Controlled Roughness," J. S. Sadhu, B. P. Azeredo, K. Hsu, J. Ma, J. Kim, M. Seong, N. X. Fang, X. Li, P. Ferreira, S. Sinha, D. G. Cahill, *J. Appl. Phys.* 112, 114306 (2012).
50. "On-Chip Inductors with Self-rolled-up SiNx Nanomembrane Tubes: a Novel Design for Extreme Miniaturization," W. Huang, X. Yu, R. Xu, P. Froeter, P. Ferreira, and X. Li, *Nano Lett.* 12 (12), 6283–6288, 2012.
51. "Heterogeneous Integration of InGaAs Nanowires on the Rear Surface of Si Solar Cells for Efficiency Enhancement," J. C. Shin, P. Mohseni, K. J. Yu, S. Tomasulo, K. Montgomery, M. L. Lee, J. A. Rogers, and X. Li, *ACS Nano* 6 (12), 11074–11079 (2012).
52. "Flexible Vertical Light Emitting Diodes," R.-H. Kim, S. Kim, Y.M. Song, H. Jeong, T.-I. Kim, J. Lee, X. Li, K.D. Choquette and J.A. Rogers, *Small* 8(20), 3123-3128 (2012).
53. "Vertically Stacked Individually Tunable Nanowire Field Effect Transistors for Low Power Operation with Ultrahigh Radio Frequency Linearity," Y. Song, J. Luo, and X. Li, *Appl. Phys. Lett.* 101, 093509 (2012).
54. "Sub-100 nm Si Nanowire and Nano-Sheet Array Formation by MacEtch using a Non-lithographic InAs Nanowire Mask," J. C. Shin, C. Zhang and X. Li, *Nanotechnology*, 23, 305305 (2012).
55. "Porosity Control in Metal Assisted Chemical Etching of Degenerately Doped Silicon," K. Balasundaram, J. S. Sadhu, J. C. Shin, B. Azeredo, D. Chanda, M. Malik, K. Hsu, J. A. Rogers, Placid Ferreira, Sanjiv Sinha, and X. Li, *Nanotechnology*, 23, 305304 (2012).
56. "Characteristics of Strain-Induced InxGa1-xAs Nanowires Grown on Si (111) Substrates Crystal Growth & Design," J. C. Shin, K. J. Choi, D. Y. Kim, W. J. Choi, X. Li, *Crystal Growth and Design*, 12, 2994-2998 (2012).
57. "Metal Assisted Chemical Etching for High Aspect Ratio Nanostructures: A Review of Characteristics and Applications in Photovoltaics," X. Li, *Curr. Opin. Solid State Mater. Sci.* invited review article, 16, 71-81 (2012).
58. "Two-Dimensional Nanomembranes: Can They Outperform Lower Dimensional Nanocrystals?" B. Nikoobakht and X. Li, *ACS Nano*, 6 (3), 1883–1887 (2012).
59. "Realization of Unidirectional Planar GaAs Nanowires on (110) Substrates," R. Dowdy, D. Walko, S. A. Fortuna, and X. Li, *IEEE Electron Device Lett.* 33, 522-524 (2012).
60. "Experimental Study of Design Parameters in Periodic Silicon Micropillar Array Solar Cells Produced by Soft Lithography and Metal Assisted Chemical Etching," J.C. Shin, D. Chanda, W. Chern, K.J. Yu, J.A. Rogers, and X. Li, *IEEE J. Photovoltaics*, 2, 129-133 (2012).
61. "Self-rolled-up Ring Resonators: a review of geometrical and resonant properties," X. Li, *Advances in Optics and Photonics*, invited article, 3 (4), 366-387 (2011).

62. "Formation of High Aspect Ratio GaAs Nanostructures with Metal Assisted Chemical Etching," M. T. DeJarld, J. C. Shin, W. Chern, D. Chanda, K. Balasundaram, J. A. Rogers, and X. Li, *Nano Lett.*, 11, 5259-5263 (2011).
63. "In_xGa_{1-x}As Nanowires on Silicon: One-Dimensional Heterogeneous Epitaxy, Bandgap Engineering, and Photovoltaics," J. C. Shin, K. H. Kim, K. J. Yu, H. Hu, L. Yin, C. Ning, J. A. Rogers, J. Zuo, and X. Li, *Nano Lett.* 11, 4831-4838 (2011).
64. "Scalable Monolithically Grown AlGaAs-GaAs Planar Nanowire High Electron Mobility Transistor," X. Miao and X. Li, *IEEE Electron. Dev. Lett.*, 32, 1227-1229 (2011).
65. "Epitaxial Growth of Three-dimensionally Architecture Optoelectronic Devices," E. C. Nelson, N. L. Dias, K. P. Bassett, S. N. Dunham, V. Verma, M. Miyake, P. Wiltzius, J. A. Rogers, J. J. Coleman, X. Li, P. V. Braun, *Nature Mater.* 10, 676-681 (2011).
66. "Experimental Verification of Reduced Intersubband Scattering in Ordered Nanopore Lattices," N. L. Dias, A. Garg, U. Reddy, J. D. Young, K. P. Bassett, X. Li, and J. J. Coleman, *Appl. Phys. Lett.* 98, 071109 (2011).
67. "Patterned Quantum Dot Molecule Laser Fabricated by Electron Beam Lithography and Wet Chemical Etching", V.B. Verma, U. Reddy, N.L. Dias, K.P. Bassett, X. Li, and J.J. Coleman, *IEEE J. Quantum Electronics*, 46(12), 1827-1833 (2010).
68. "Direct Heterointegration of III-V Materials on Group IV Substrates", D. Ahmari, B. McDermott, S. Thomas, B. Roof, Q. Hartmann, and X. Li, *ECS Transactions*, 33 (6), 849 – 857 (2010); invited.
69. "Geometry Effect on the Strain Induced Self-Rolling of Semiconductor Membranes", Ik Su Chun, Archana Challa, Brad Derickson, Jimmy Hsia, and X. Li, *Nano Lett.* 10, 3927-3932 (2010).
70. "Tuning the Photoluminescence Characteristics with Curvature for GaAs Quantum Well Microtubes," I. Chun, K. Bassett, A. Challa, and X. Li, *Appl. Phys. Lett.* 96, 251106 (2010).
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BOOK CHAPTERS

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3. "Spatially resolved optical characterization of GaN structures produced by selective area epitaxial lateral overgrowth," X. Li, P.W. Bohn, Y. W. Kim, and J. J. Coleman, in "III-Nitride semiconductors: Growth" Optoelectronic Properties of Semiconductors and Superlattices; v. 19, edited by M.O. Manasreh and I.T. Ferguson. New York: Taylor & Francis, 2003.

BULLETINES

1. "MacEtch: anisotropic metal assisted chemical etching defies the textbook," Xiuling Li, SPIE Newsroom, DOI: 10.1117/2.1201203.004147, March 28, 2012.
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CONFERENCE PROCEEDINGS:

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2. X. Li, K. Chabak, W. Choi, J. Kim, X. Miao, P. Mohseni, Y. Song, D.E.Walker, C. Zhang, "III-V Nanowires and Nano fins: Growth, Etching, and Devices", International Conference on Solid State Devices and Materials (SSDM), Tskuba, 2016.
3. C. Zhang, W. Choi, P. Mohseni and X. Li, "InAs Nanowire Gate-All-Around MOSFETs by Heterogeneous Planar VLS Growth," Device Research Conference, the Ohio State University, 2015.
4. Y. Song, P. K. Mohseni, S. H. Kim, J. C. Shin, C. Zhang, K. Chabak, and X. Li, "InP FinFETs with Damage-Free and Record High-Aspect-Ratio (45:1) Fins Fabricated by Metal-Assisted Chemical Etching," Device Research Conference, the Ohio State University, 2015.
5. P. Froeter, Y. Huang, O. V. Cangelaris, W. Huang, M. U. Gillette, J. Williams, and X. Li, "Superior Neuronal Outgrowth Guidance and Rate Enhancement using Silicon Nitride Self-Rolled-up Membranes," Device Research Conference, the Ohio State University, 2015.
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PRESENTATIONS

Invited Talks (> 83)

1. "Semiconductor Processing: Wet Etch, Dry Etch, and now MacEtch," Conference on Optoelectronic and Microelectronic Materials and Devices (COMMAD), Sydney, Australia, Dec. 2016, invited speaker.
2. "Miniaturization of Passive Electronic Devices by Self-Rolled-Up Membrane Nanotechnology," Materials Research Society (MRS) Fall Meeting, Boston, Dec. 2016, invited speaker.
3. "Heterogeneous Integration III-V Nanowires on Si and van der Waals Substrates," Materials Research Society (MRS) Fall Meeting, Boston, Dec. 2016, invited speaker.

4. "Nanowire Electronics," International Conference on Solid State Devices and Materials (SSDM), Tsukuba, Japan, Sept. 2016, invited speaker.
5. "Growth and hierarchical assembly of nanomaterials," CIMTEC 2016 - 7th Forum on New Materials, Perugia, Italy, June 2016, invited speaker.
6. "Nanowire and Nanomembrane Electronics: performance and scalability," Naval Research Laboratory, May 2016, invited seminar speaker.
7. "Nanowire and nanomembrane electronics: performance and scalability," Vanderbilt University, Mar. 2016, invited speaker of VINCE Colloquium.
8. "Selective Lateral Epitaxy of III-V Nanowires for Scalable and High Performance Electronics," PacificChem, Hawaii, Dec. 2015, invited speaker.
9. "III-V Nanowire-based 3D Electronics Enabled by Selective Lateral Epitaxy," Mater. Research Soc. Boston, Nov. 2015, invited speaker.
10. "Nanowire and Nanomembrane Electronics," IEEE PKU Chapter, Beijing, China, Nov. 2015, IEEE Nano distinguished lecture.
11. "III-V nanowire growth and high speed electronics," NTT International Symposium on Nanoscale Transport and Technology, Atsugi, Japan, Nov. 2015, invited speaker.
12. "Self-rolled-up membrane for passive electronics," AVS Topical, Shanghai, Oct. 2015, keynote speaker.
13. "Planar III-V nanowire for high speed electronics," AVS Topical, Shanghai, Oct. 2015, invited speaker.
14. "III-V nanowires and 2D van der Waals sheets: interfaces and devices," SPIE, San Diego, Aug. 2015, invited speaker.
15. "Nanowire and Nanomembrane Electronics: Performance and Scalability," Airforce Research Laboratory, Dayton, Ohio, June 2015, invited speaker.
16. "Metal-Assisted Chemical Etching (MacEtch): Wet etch, Dry etch, and now MacEtch," Symposium OO, Materials Research Society Meeting, San Francisco, April, 2015, tutorial speaker.
17. "Microtube arrays create cozy space for neurons to grow ... fast," Army Research Office, Workshop on Compound Semiconductors for Biological Applications, Mar. 2015, invited speaker.
18. "Semiconductor Nanoelectronic and Nanophotonic Devices: performance and scalability," Arizona State University, Mar. 2015, invited seminar speaker.
19. "Semiconductor Nanoelectronic and Nanophotonic Devices: performance and scalability," Naval Research Laboratory, Feb. 2015, invited colloquium speaker.
20. "Semiconductor nanostructures for solar water splitting." Hydrogen Production & Fuel Cells Division Symposium, I2CNER, Kyushu, Japan, Feb. 5th, 2015.
21. "Semiconductor Nanoelectronic and Nanophotonic Devices: performance and scalability," Carnegie Mellon, Nov. 2014, invited seminar.
22. "3D hierarchical architectures based on self-rolled-up membranes," SES Annual Technical Meeting, Eringen Medal Symposium, Purdue Univ., Oct. 2014, Keynote speaker.
23. "RF Performance of 3D III-V Nanowire T-Gate HEMTs Grown by VLS Method," Nanowire Growth Workshop, Eindhoven, Netherlands, Aug. 2014, invited speaker.
24. "III-V Nanowire Solar Cells on Graphene via Direct van der Waals Epitaxy," IEEE Summer Topicals Meeting Series: Nanowire Materials and Integrated Photonics (NWIP), Montreal, Canada, July 2014, invited speaker.
25. "Metal-Assisted Chemical Etching (MacEtch): Wet etch, Dry etch, and now MacEtch," ScanDisk, July 2014, invited talk.

26. "Metal-Assisted Chemical Etching (MacEtch): Wet etch, Dry etch, and now MacEtch," Lam Research, June 2014, invited talk.
27. "Au-Free III-V Nanowire Epitaxy Capabilities and Related Devices," Lam Research, June 2014, invited talk.
28. "Semiconductor Nanoelectronic and Nanophotonic Devices: performance and scalability," Norwegian University of Science and Technology, May 2014, invited seminar.
29. "Semiconductor Nanoelectronic and Nanophotonic Devices: performance and scalability," The 6th International Symposium on Bioanalysis, Biomedical Engineering and Nanotechnology (ISBBN 2014), Hunan, China, May 2014, invited speaker.
30. "Nanowire Solar Cells on Graphene by Direct Epitaxy," University of Puerto Rico, Rio Piedras, March 2014, invited seminar.
31. "Semiconductor Nanoelectronic and Nanophotonic Devices: performance and scalability," Nano and Giga Challenges in Electronics, Photonics and Renewable Energy (NGC2014), Tempe, Arizona, March 2014, invited talk.
32. "III-V nanowire arrays for solar hydrogen production," International Conference on Hydrogen Generation, Kyushu, Japan, Jan. 2014, invited talk.
33. "Nanowire Electronics," ISDRS, Washington D.C., Dec. 2013, invited talk.
34. "Nanowire Photovoltaics," Asia Communications & Photonics Conference (ACP), Beijing, Nov. 2013, invited talk.
35. "Semiconductor Nanoelectronic and Nanophotonic Devices: Performance and Scalability," IEEE IEEE Southeastern Michigan Chapter IV and University of Michigan, Nov. 2013, invited lecture.
36. "Van der Waals nanoepitaxy: mechanism and applications," SPIE Optics and Photonics (Nano Epitaxy), San Diego, Aug. 2013, invited talk.
37. "Semiconductor nanowire array based electronic and photovoltaic devices: formation, performance, and scalability," IEEE Nano, Aug. 2013, invited tutorial.
38. "Self-rolled-up micro and nanotubes for photonics and passive electronics," IEEE Nano, Aug. 2013, invited tutorial.
39. "Metal-assisted chemical etching (MacEtch): anisotropic wet etching for optoelectronics," International Conference on Nanophotonics (ICNP)/Conference on Advanced Optoelectronics and Micro/Nano Optics (AOM), Hong Kong, May 2013, invited talk.
40. "Semiconductor nanowire array: from formation to applications," International Conference on Nanophotonics (ICNP)/Conference on Advanced Optoelectronics and Micro/Nano Optics (AOM), Hong Kong, May 2013, invited tutorial.
41. "Semiconductor Nanotechnology: controllability and scalability," University of Texas, Arlington, April 2013, invited speaker.
42. "Semiconductor Nanoelectronic and Nanophotonic Devices: controllability and scalability," Case Western Research University, March 2013, invited speaker.
43. "Semiconductor Nanoelectronic and Nanophotonic Devices: towards controllability and manufacturability," International Conference on Nano Science and Nano Technology, Gwangju, Korea, Nov. 2012, plenary speaker.
44. "Nanowire based solar cells," SPIE/COS Photonics Asia, Beijing, Nov. 2012, invited talk.
45. "Semiconductor Nanoelectronic and Nanophotonic Devices: towards controllability and manufacturability," Integrative NanoScience Institute, Florida State University, Oct. 2012, invited speaker.
46. "Semiconductor Nanoelectronic and Nanophotonic Devices: performance, controllability and manufacturability," Solid State Technology and Devices seminar series, University of California, Berkeley, Oct. 2012, invited speaker.

47. "Ordered array of III-V nanowire growth by MOCVD and applications in nanoelectronics," SPIE Optics and Photonics Meeting, "Nanoepitaxy: Materials and Devices IV", San Diego, 12-16 August, 2012, invited speaker.
48. "III-V Nanowires on Si for Monolithic Tandem Solar Cells," Photonics North Conference, Montreal, Canada, June 2012; invited speaker.
49. "Array Based Nanotechnology Inspired Bio and Energy Applications," NanoCEMMS industry advisory board meeting, UIUC, March 2012; invited speaker.
50. "Rolled-up Tube based Nanophotonics," American Physics Society (APS) March Meeting, Boston, March 2012; invited speaker.
51. "Semiconductor Nanoelectronic and Nanophotonic Devices: towards controllability and manufacturability," Princeton University, Dec. 7th, 2011, invited seminar speaker.
52. "Semiconductor Nanoelectronic and Nanophotonic Devices: towards Controllability and Manufacturability," Lehigh University, Sept. 2nd, 2011, invited seminar speaker.
53. "Semiconductor Nanoelectronic and Nanophotonic Devices: towards Controllability and Manufacturability," The 11th Annual Emerging Information and Technology Conference (EITC), July 2011, University of Chicago, invited talk.
54. "III-V Nanowire FETs," DARPA COSMOS Program PI Meeting, June 2011, Long Beach, CA, invited guest speaker.
55. "III-V Nanoelectronic and Nanophotonic Devices: Towards Controllability and Manufacturability," Nano Photonics and Electronics Industry Affiliates Program, Illinois, May 2011, invited talk.
56. "III-V and Silicon Based Nanoelectronic and Nanophotonic Devices: Towards Controllability and Manufacturability," Center for Quantum Devices Seminar, Northwestern University, March 21, 2011, invited speaker.
57. "III-V Nanoelectronic and Nanophotonic Devices: towards controllability and manufacturability" Applied Physics and Electrical Engineering Joint Colloquium, Harvard University, February 2011, invited speaker.
58. "Planar GaAs Nanowires on GaAs (100) substrates: self-aligned, twin-defect free and transfer-printable," NSF-MEXT (Japan) Young Researchers Exchange Program, Dec. 2010, Kyoto, Japan, invited talk.
59. "Towards High Performance III-V Semiconductor Nanowire-FETs and Nano-lasers," University of Southern California, Nov. 2010, invited seminar speaker.
60. "Ordered Silicon Nanowire Array Based Solar Cells Produced by Metal Assisted Chemical Etching," Photonic Society annual meeting, Denver, Nov. 2010.
61. "Towards High Performance III-V Semiconductor Nanowire-FETs and Nano-lasers," Rensselaer Polytechnic Institute, Oct. 2010, invited seminar speaker.
62. "Towards High Performance III-V Semiconductor Nanowire-FETs and Nano-lasers," Ohio State University, Oct 2010, invited seminar speaker.
63. "Microtube resonators: strain-induced and large area assembled," NSF-MEXT (Japan) Young Researchers Exchange Program, Oct. 2010, UIUC, invited talk.
64. "III-V Planar Nanowire FETs and Rolled-up Tube Based Nanophotonics," Nano-EP seminar series, Sept. 2010, UIUC, invited talk.
65. "Towards High Performance III-V Semiconductor Nanowire-FETs and Nano-lasers," Beijing Institute of Technology, July 2010, invited talk.
66. "Towards High Performance III-V Semiconductor Nanowire-FETs and Nano-lasers," Tsing Hua University, China, July 2010, invited talk.
67. "Towards High Performance III-V Semiconductor Nanowire-FETs and Nano-lasers," Stanford University, May 2010, invited talk.

68. "Towards High Performance III-V Semiconductor Nanowire-FETs and Nano-lasers," Solid State Seminar (S3) Series, April 2010, Norte Dame, invited speaker.
69. "Bottom-up and Manufacturable: New Paradigms in III-V Semiconductor Nanostructures and Device Prospects," NSF Nano-CEMMS Annual Industry Meeting, March 2010, invited talk.
70. "Strain-induced Self-rolling III-V Tubular nanostructure: Formation process and Photonic Application", SPIE Photonic West, San Francisco, Jan 2010, invited talk.
71. "Compound semiconductor 1D nanostructures and Device Prospects," Purdue University, Birk Nanotechnology Center, November 2009, invited talk.
72. "Compound Semiconductor Nanotubes and Nanowires for photonic and electronic Applications," Argonne National Laboratory, Aug. 2009, invited talk.
73. "Compound Semiconductor Nanotubes and Nanowires for photonic and electronic Applications", Department of Microelectronics, Peking University, China, July 2009, invited talk.
74. "Compound Semiconductor Nanotubes and Nanowires for Nanophotonic and Nanoelectronic Applications," Institute for Advanced Materials, Devices, and Nanotechnology (IAMDN), Rutgers University, April 2009, invited talk.
75. "Compound Semiconductor Nanotubes and Nanowires for photonic and electronic Applications," 1st NSF-sponsored US-Argentina Workshop on Nanomaterials, Bariloche, Argentina, March 2009, invited talk.
76. "3D IC and Semiconductor Nanotechnology," IBM, February 2009, invited talk.
77. "Compound semiconductor nanotubes and nanowires," University of California, Los Angeles, February 2009, invited talk.
78. "Compound semiconductor nanotubes and nanowires," Texas Tech University, February 2009, invited talk.
79. "Nanotechnology: compound semiconductor nanotubes and nanowires," ECE 200 seminar, University of Illinois, February 2009.
80. "Nanotechnology: compound semiconductor nanotubes and nanowires," Beckman Institute Nanohour Series, University of Illinois, November 2008.
81. "III-V semiconductor nanotubes and nanowires," University of California, Los Angeles, February 2009, invited talk.
82. "III-V semiconductor nanotubes and planar nanowires," University of Wisconsin, Madison, 2008, invited seminar.
83. "What is your impact factor," NSF Nano-CEMMS graduate student meeting, UIUC, 2010, invited talk.

Contributed Talks and Posters:

1. Kyoocho Jung, Cheyu Liu, JD Kim, Wonsik Choi, Weidong Zhou, Hao-Chung Kuo, and Xiuling Li, "Large Area MoS₂ van der Waals Epitaxy on III-Ns and the Epitaxial Formation of a n-MoS₂/p-InGaN Diode," IEEE Photonics Conference, Oct. 2016, Kona, Hawaii, oral presentation.
2. Wen Huang, Moyang Li, Songbin Gong and Xiuling Li, "RFIC transformer with 12x size reduction and 15x performance enhancement by self-rolled-up membrane nanotechnology," InterPACKICNMM, July 2015, San Francisco, poster.
3. Yi Song, Parsian K. Mohseni, Seung Hyun Kim, Jae Cheol Shin, Chen Zhang, Kelson Chabak, and Xiuling Li, "InP FinFETs with Damage-Free and Record High-Aspect-Ratio (45:1) Fins Fabricated by Metal-Assisted Chemical Etching," 73th Device Research Conference, Columbus, Ohio, 2015, oral presentation.

4. Wen Huang, Moyang Li, Songbin Gong and Xiuling Li, "Self-rolled-up Tube Transformers: Extreme Miniaturization and Performance Enhancement," 73th Device Research Conference, Columbus, Ohio, 2015, oral presentation.
5. Paul Froeter, Yu Huang, Olivia V. Cangellaris, Wen Huang, Martha U. Gillette, Justin Williams and Xiuling Li, "Superior Neuronal Outgrowth Guidance and Rate Enhancement using Silicon Nitride Self-Rolled-up Membranes," 73th Device Research Conference, Columbus, Ohio, 2015, poster presentation.
6. Wonsik Choi, Parsian K. Mohseni, Eric Seabron, William L. Wilson, and Xiuling Li, "Doping Dynamics of Selective Lateral Epitaxy-Grown p-n Junction GaAs Nanowires Revealed Using Scan-Probe Microscopy Techniques," 57th Electronic Materials Conference, Columbus, Ohio, 2015, oral presentation.
7. Wonsik Choi, Parsian K. Mohseni, Eric Seabron, William L. Wilson, and Xiuling Li
8. X. Yu, Ehsan Arbabi, Lynford Goddard, Xiuling Li, and Xiaogang Chen, "Monolithically integrated self-rolled-up tube based vertical coupler with planar waveguide – a new 3D photonic integration scheme," Advanced Photonics, Boston, July 2015, oral presentation.
9. Christopher A. Edwards, Steven J. McKeown, SukWon Hwang, Paul Froeter, Xiuling Li, John A. Rogers, Gabriel Popescu, Lynford L. Goddard, "In-situ measurements of nanoscale phenomena using diffraction phase microscopy," SPIE, San Francisco, CA, Feb. 2015, oral presentation.
10. "RF Performance of 3D III-V Nanowire T-Gate HEMTs Grown by VLS Method," Kelson D., Xin Miao, Chen Zhang, Dennis E. Walker Jr., Xiuling Li, Device Research Conference (DRC), 72nd Annual, Santa Barbara, CA, June 2014, oral presentation.
11. "III-As Pillar Arrays by Metal-Assisted Chemical Etching for Photonic Applications," Parsian Mohseni, Pan Lei, Xiang Zhao, Seung Hyun Kim, Karthik Balasundaram, Jeong Dong Kim, James J. Coleman, and Xiuling Li, CLEO, San Jose, June 2013, oral presentation.
12. "Twinning Superlattice in VLS Grown Planar GaAs Nanowires Induced by Impurity Doping," X. Li, IEEE Photonics Conference, San Francisco, Sept. 2012, oral presentation.
13. "Wafer-Scale InGaAs Nanowire Epitaxy on Si and Graphene Substrates," Parsian Mohseni, Jae Cheol Shin, Xiuling Li, International Symposium on Compound Semiconductors, Santa Barbara, CA, Aug. 2012, oral presentation.
14. "Anisotropic Metal-Assisted-Chemical-Etching for III-V Compound Semiconductors," Parsian Mohseni, Karthik Balasundaram, Matt DeJarld, Jae Cheol Shin, Debashis Chanda, John A. Rogers, and Xiuling Li, International Symposium on Compound Semiconductors, Santa Barbara, CA, Aug. 2012, poster.
15. "Ultrathin InAs Nanowire Growth by Au-assisted TMI_n Dissociation," K. Jung and X. Li, Electronic Materials Conference, Penn State, June 2012, oral presentation.
16. "Semiconductor Nano-Materials and Devices: towards manufacturability," X. Li, NSF Workshop on Micro, Nano, and Bio Systems, Washington DC, March 2012, invited participant, poster.
17. "Planar VLS Grown GaAs Nanowire Array Based HEMTs," X. Miao and X. Li, International Semiconductor Device Research Symposium (ISDRS), College Park, Maryland, Dec. 2011, oral presentation.
18. "Monolithically Grown In_xGa_{1-x}As Nanowire Array on Silicon Tandem Solar Cells with High Efficiency," J. C. Shin and X. Li, IEEE Photonics Conference, Arlington, Oct. 2011, oral presentation.
19. "Characteristics of In_xGa_{1-x}As Nanowires Heteroepitaxially Grown on Silicon," J. C. Shin and X. Li, ACCGE-18 and OMVPE-15 workshop, Aug 2011, oral presentation.
20. "Monolithically Grown AlGaAs-GaAs Planar Nanowire High Electron Mobility Transistor," X. Miao and X. Li, ACCGE-18 and OMVPE-15 workshop, Aug 2011, poster.
21. "Ternary In_xGa_{1-x}As Nanowires on Silicon Substrates: 1D Heterogeneous Epitaxy, Bandgap Engineering, and Photovoltaics," J. C. Shin and X. Li, EMC, June 2011, oral presentation.

22. "Towards Planar GaAs Nanowire Array High Electron Mobility Transistor," X. Miao and X. Li, DRC, June 2011, poster.
23. "Monolithically Grown $\text{In}_x\text{Ga}_{1-x}\text{As}$ Nanowire on Silicon Tandem Solar Cells with High Efficiency," J. C. Shin, K. J. Ho, J.A. Rogers, and X. Li, DRC, June 2011, poster.
24. "Strain-Induced Self-rolling of Semiconductor Membranes: Effect of Geometry, Energetics, and Kinetics," I. Chun, A. Challa, B. Derickson, K. J. Hsia, and X. Li, CLEO, May 2011, oral presentation.
25. "AlGaAs/GaAs nanowire HEMT: planar GaAs nanowire and AlGaAs shell interface study," X. Miao and X. Li, MRS, April 2011, oral presentation.
26. "Silicon Microwire Array Based Solar Cells Produced by Metal-Assisted Chemical Etching," UGIM, June 2010, Purdue University, oral presentation.
27. "Planar $\langle 110 \rangle$ GaAs Nanowires: Effects of Impurity Doping and Substrate Orientation," UGIM, June 2010, Purdue University, poster.
28. "Twinning Superlattice in VLS Grown $\langle 110 \rangle$ Planar GaAs Nanowires Induced by Impurity Doping," EMC, June 2010, Norte Dame, oral presentation.
29. "Non-lithographic Patterning and Metal-Assisted Chemical Etching for Manufacturing of Tunable Light-Emitting Silicon Nanowire Arrays," CLEO/QELS, May 2010, San Jose, oral presentation.
30. "Geometry Dependence of the Strain-driven Self-rolling of Semiconductor Nanotubes," Ik Su Chun, Huan Li, Archana Challa, K Jimmy Hsia, Xiuling Li, TMS annual meeting, 2010, oral presentation.
31. "Planar III-V nanowires," International Conference on 1-dimensional Nanomaterials (ICON), Xiuling Li, oral presentation, Dec. 2009.
32. "Strain Driven Self-rolling III-V Tubes," International Conference on 1-dimensional Nanomaterials (ICON), Xiuling Li et. al., poster presentation, Dec. 2009.
33. "Metal-assisted chemical etching for manufacturing of Si nanowire arrays," International Conference on 1-dimensional Nanomaterials (ICON), Xiuling Li et al., poster presentation, Dec. 2009.
34. "High-Mobility Planar GaAs Nanowires on (100) Substrates for Nanoelectronic Applications," Organometallic Vapor Phase Epitaxy (OMVPE) Workshop, Wisconsin, August 2009, oral presentation.
35. "Ultra-thin-walled III-Arsenide Microtubes with Embedded QW Light Emitters," ACCGE-17, Wisconsin, August, 2009, oral presentation.
36. "GaAs $\langle 110 \rangle$ Nanowires: Planar, Self-aligned, Twin-free, High-mobility and Transfer-Printable," 14th OptoElectronics and Communications Conference, Hong Kong, July 2009, oral presentation.
37. "GaAs FET with a High Mobility Self-Assembled Planar Nanowire Channel on a (100) Substrate", IEEE Device Research Conference, Penn State, June 2009, oral presentation.
38. "Ultra-Thin-Walled III-Arsenide Microtubes with Embedded QW Light Emitters: Room Temperature PL Characteristics", CLEO, Baltimore, May 2009, postdeadline oral presentation.
39. "III-V micro and nanotubes: from formation process to photonic applications," Semiconductor Laser Workshop, Baltimore, May 2009, oral presentation and session organizer.
40. "Self-aligned $\langle 110 \rangle$ planar GaAs nanowires for low twin density and high integratability", MRS 2008 symposium LL, poster presentation.
41. "Metal-semiconductor hybrid micro- and nanotubes: large area assembly, dispersion, functionalization and characterization," MRS 2008 Symposium JJ, oral presentation (recognized as Outstanding Symposium Paper).
42. "Three Dimensional Nanoscale Pattern Formation in Light-emitting Porous Silicon," MRS 2008 Symposium MM, oral presentation.
43. "MOCVD Grown III-V Nanowires: In-plane, Self-aligned and Transfer-printable", IEEE LEOS 2008 annual meeting, oral presentation (best student paper award finalist).

44. "Self-Aligned Planar GaAs Nanowires Grown by MOCVD on GaAs (100) Substrates," CLEO/QELS 2008, oral presentation.
45. "3-D Nanoscale Pattern Formation in Porous Silicon," CLEO/QELS 2008, oral presentation.
46. "Engineered large area fabrication of ordered InGaAs-GaAs nanotube arrays," MRS 2007, oral presentation.

TEACHING

ECE 444 IC Device Theory and Fabrication, *course director*, <http://fabweb.ece.illinois.edu>

ECE 518 Adv. Semiconductor Nanotechnology

ECE 590G Graduate Seminar in Special Topics

TE 401 Develop Breakthrough Projects

SERVICE

Offices held in Professional Societies

1. Nominations and Appointment (N&A) committee, IEEE Photonics Society (2016-)
2. Board of governors, IEEE Photonics Society (2014-2016)
3. IEEE Photonic Society representative to IEEE Nanotechnology Council (2010-2014)

Conference organizing committees served in Professional Societies

1. The 18th International Conference on Metal Organic Vapor Phase Epitaxy (ICMOVPE-XVIII), organizing committee, 2016
2. Device Research Conference, Technical Program Committee (2015-2018)
3. Organizer of the inaugural symposium on Metal-assisted chemical Etching (MacEtch) at MRS (spring 2015)
4. Organizer of the first workshop on Self-Rolled-Up Membrane (S-RUM) Technology (2014)
5. Center for Nano Science and Technology (CNST) Annual Workshop, co-chair (2013)
6. 9th ACM/IEEE Symposium on Nanoscale Architecture (NANOARCH), TPC (2013)
7. IEEE Summer Topical: Micro and Nanocavity Integrated Photonics, organizing committee (2013)
8. CLEO Science & Innovation committee 6: Optical Materials, Fabrication & Characterization (2012, 2013)
9. Electronic Materials Conference (EMC) organizing committee (2012, 2013)
10. Asia Communications & Photonics Conference (ACP) Technical Program Subcommittee 6: energy (2012, 2013)
11. International Semiconductor Device Research Symposium (ISDRS) Program Committee (2011)
12. Symposium organizer for 220th Electrochemical Society Meeting (2011)
13. Device Research Conference (DRC) session chair (2010)
14. Electronic Materials Conference (EMC) session chair (2010)
15. IEEE University Government Industry Micro/Nano Symposium Technical Committee (2010)
16. IEEE Photonic Society *Semiconductor Laser workshop session organizer* (09)
17. IEEE Photonic Society *Semiconductor Laser Technical Committee* (08, 09, 10)

Editorships of Journals

1. Deputy Editor, Applied Physics Letters (2015 -)
2. Associate Editor, IEEE Transaction on Nanotechnology (2015)
3. Associate Editor, Scientific Reports, Nature Publishing Group (2014 -2015)

4. Journal of Electronic Materials, Guest Editor for a special issue (2013)
5. Associate Editor, IEEE Photonics Journal (2012 - 2015)

Reviewer

1. National Science Foundation
2. Army Research Office
3. Department of Energy
4. IEEE, Nature, PNAS, NPG, AAAS, ACS, AIPP, APS, IOP etc. journals
5. External opponent/reviewer for PhD theses

University/campus service

1. College of Engineering: Executive Committee (2016-2017), Curriculum Committee for the new degree of BS in Innovation, Leadership, and Engineering Entrepreneurship (ILEE), Safety Advisory Committee, Search Committees for ECE department head (2014), MNTL director (2014), and ARI associate director (2014).
2. Electrical and Computer Engineering Committees: Curriculum, Colloquium, Public Relations, Graduate Admissions, Graduate Recruitment, Fellowship, and Faculty Search committees.
3. Center for Nanotechnology Science and Technology (CNST): Annual Workshop Organizing Committee, co-Chair, poster judge (2008-).
4. Micro and Nanotechnology Lab (MNTL): Executive Committee (2008-present), Cleanroom Operations & Safety Committee (2012-present).
5. COE, VCR, and Graduate College internal proposal review panels

Outreach activities

1. Principle Investigator for a NSF RET site on Nanotechnology (2014-2017)
2. Faculty Advisor, IEEE Electron Device Society Student Chapter (2010-)
3. Faculty advisor, Nano Electronics and Photonics (nanoEP) Seminar Series (2011-)
4. Instructor, Girls Adventures in Math, Engineering, and Science summer camp (2010-)
5. Speaker, NSF Nano-CEMMS graduate student meeting on industry research (2010)
6. Delegate, NSF US/Japan Young Scientists Exchange Team on Nanomanufacturing (2010)
7. Faculty host, NSF REU students (2009-)
8. Plenary speaker, Evening with Industry for ECE Eta Kappa Nu Honor Society (2007)
9. Panel member, career day at Barkstall Elementary school, Champaign, IL (2007)

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL RESEARCHERS

Current Group Members:

Postdoctoral researcher (1):

Dr. Munho Kim

Graduate students (8):

Paul Froeter, Jeong Dong Kim, Wen Huang, Wonsik Choi, Moyang Li, Lingyu Kong, Cheyu Liu, Eric Seabron

Undergraduate researchers (7):

Clarence Chan, Siyu Liu, Jingchao Zhou, Julian Michaels, Mantian Xue, Mark Kraman, and Qingyi Wang

Former Thesis Students (year of graduation, current affiliation):

Ph.D. degrees: Ik Su Chun (2011, Intel), Ryan Dowdy (2013, Northrup Grumman), Xin Miao (2014, IBM), Ki Jun Yu (2014, UIUC), Kevin Bassett (2015, Honeywell), Chen Zhang (2015, IBM), Karthik Balasundaram (2015, Fenwick & West LLP), Kyoocho Jung (2016, Samsung), Kelson Chabak (2016, Air Force Research Lab), Yi Song (2016, IBM).

M.S. degrees (terminal): Xi Zeng (2008), Archana Challa (2010, Intel), Seth Fortuna (2010, Berkeley), Xiang Zhao (2015, OminiVision), SeungHyun (Ryan) Kim (Korea, military service).

B.S. degrees with thesis: Serena Liou (2009, Northrup Grumman), Winston Chern (2010, MIT), Hsing-Keng Tsai (2010), Mathew DeJarld (2011, Michigan), Mohammad Malik (2011, Microsoft), Michael Liu (2011, UIUC), Paul Froeter (2012, UIUC), SeungHyun (Ryan) Kim (2012, UIUC), Aiyin Liu (2012, UIUC), Moyang Li (2013, UIUC), and Jeong Bin Lim (2014, UIUC), Yixuan (Nancy) Zhao.

Former Postdoctoral Researchers (years of training, current affiliation)

Jae Cheol Shin (2010-2011, Assistant Professor, Yeungnam Univ. Korea), Xin Yu (2011-2014, UIUC), and Dr. Parsian Mohseni (2012-2015, Assistant Professor, Rochester Institute of Technology)