

Curriculum Vitae



Xiuling Li

Department of Electrical and Computer Engineering

Department of Chemistry (by coutesey)

The University of Texas at Austin

xiuling.li@utexas.edu

TABLE OF CONTENTS

Professional positions	2
Education	2
Honors and awards	2 – 3
Patents	3 – 4
Journal publications	4 – 15
Conference proceedings	16 – 20
Presentations, invited	20 – 28
Presentations, contributed	28 – 31
Teaching and Services	31 – 34
Student supervision	33 - 34

PROFESSIONAL POSITIONS

University of Texas, Austin

Professor in Electrical and Computer Engineering
Temple Foundation Endowed Professorship #3 (08/2021 -)
Professor in Chemistry
Fellow of the Dow Professorship (08/2021 -)

University of Illinois

Interim Director of Nick Holonyak Jr. Micro and Nanotechnology Laboratory (01/2020 – 08/2021)
Donald Bigger Willett Professor in Engineering (03/2020- 08/2021)
Professor in Electrical and Computer Engineering (2015- 2020)
Willet Faculty Scholar, College of Engineering (2015-2020)
Associate Professor in Electrical and Computer Engineering (2012-2015)
Assistant Professor in Electrical and Computer Engineering (2007-2012)
Faculty Affiliate, Mechanical Science and Engineering (2011-2021)
Research Faculty, Materials Research Laboratory (2010-2021)
Faculty Affiliate, Beckman Institute (2007-2021)
Faculty Affiliate, Materials Science and Engineering (2007-2012)

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

- 1st place poster award in the “Laboratory Head” category, Welch Conference (2023)
- Department Service Award, UT ECE (2023)
- Qualcomm Innovation Fellowship (to students, 2023)
- **IEEE Pioneer Award in Nanotechnology (2022)**
- **Fellow, AAAS (2021)**
- **Fellow, National Academy of Inventors (2020)**
- Fellow, Big Ten Academic Alliance (BTAA) Academic Leadership Program (2020)
- **Fellow, Optical Society of America (2019)**
- **Fellow, American Physical Society (2018)**
- **Fellow, IEEE (2017)**

- Deputy Editor, Applied Physics Letters (2015-)
- Board of governors, IEEE Photonics Society (2014-2016)
- Distinguished Lecturer, IEEE Nanotechnology Council (2014-2016)
- Faculty Entrepreneurial Fellow, Inaugural, College of Engineering, UIUC (2015-2016)
- Campus Excellent Teacher ranked by students, UIUC (2015, 2020)
- A. T. Yang Research Award, ECE, UIUC (2013)
- 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 (2011-2014)
- **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)

PATENTS (3 Portfolios, 21 Awarded, 5+ Pending)

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

1. Metal-assisted chemical etching porous silicon formation method (Application number: 09/662,682, **issued** 09/14/2004). Inventors: Xiuling Li, Paul W. Bohn, Jonathan V. Sweedler
2. Metal-assisted chemical etching to produce porous group III-V materials (Application number: 09/989,050, **issued** 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 (Application number: 13/062,130, **issued** 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 (Application number: 13/833,462, **issued** 02/10/2015). Inventors: Xiuling Li, Matthew T. Dejarld, Parsian Mohseni, Jae Cheol Shin, Winston Chern
5. Method of forming an array of high aspect ratio semiconductor nanostructures (Application number: 13/503,123, **issued** 03/17/2015). Inventors: Xiuling Li, Nicholas X. Fang, Placid M. Ferreira, Winston Chern, Ik Su Chun, Keng Hao Hsu
6. Apparatus and Method for Magnetic-Field Guided Metal-Assisted Chemical Etching, (Application number 14/541,765, **issued** 7/11/2017). Inventors: Xiuling Li, Weidong Zhou, Wen Huang
7. Self-anchored Catalyst Metal-assisted chemical Etching (Application number: 15/441,745, **issued** 07/30/2018). Inventors: Xiuling Li, Jeongdong Kim, Lingyu Kong, Munho Kim
8. Catalyst-Assisted Chemical Etching with a Vapor-Phase Etchant (Application number: 15/712,498, **issued** 02/28/2019). Inventors: Xiuling Li and Jeongdong Kim
9. Optoelectronic device including a buried metal grating for extraordinary optical transmission (EOT) (Application number: 15/200,345, **issued** 03/25/2019). Inventors: Xiuling Li, Daniel Wasserman, and Xiang Zhao
10. Optoelectronic Device Having an Antireflective Surface (Application number: 16/034,774, U.S. Patent No. 10,741,705, **issued** 08/11/2020). Inventors: Xiuling Li, Munho Kim, Jeong Dong Kim
11. Catalyst-Assisted Chemical Etching with a Vapor-Phase Etchant (Application number: 16/361,514 **issued** 05/2020). Inventors: Xiuling Li, Jeong Dong Kim, Dane J. Sievers, Lukas Janavicius

12. Light emitting diode (LED) structures for a microLED device, and method for producing an array of LED structures (Application number: 18/124,132, filed on 03/21/2023). Inventors: Xiuling Li and Clarence Chan

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

13. Rolled-up transformer structure for a radio frequency integrated circuit (RFIC) (Application number: 14/051,208, **issued** 01/27/2015). Inventors: Xiuling Li, Wen Huang
14. Rolled-up transmission line structure for a radio frequency integrated circuit (RFIC) (Application number: 14/051,192, **issued** 04/28/2015). Inventors: Xiuling Li, Wen Huang
15. Rolled-up inductor structure for a radio frequency integrated circuit (RFIC) (Application number: 14/051,188, **issued** 12/29/2015). Inventors: Xiuling Li, Placid M. Ferreira, Wen Huang, Xin Yu
16. Tubular Resonant Filter and Method of Making a Tubular Resonant Filter (Application number: 15/092,979, **issued** 06/19/2018). Inventors: Xiuling Li, Wen Huang, Moyang Li
17. Rolled-up power inductor and array of rolled-up power inductors for on-chip applications (Application number: 15/704,262, **issued** 03/2019). Inventors: Xiuling Li and Wen Huang
18. Helical antenna and method of modulating the performance of a wireless communications device (Application number: 15/408,893, **issued** 4/30/2019). Inventors: Xiuling Li, Wen Huang, and Paul J. Froeter
19. Rolled-up magnetic component for on-chip applications and method of making a rolled-up magnetic component (Patent number: 11/031,456, **issued** 6/8/2021). Inventors: Xiuling Li, Wen Huang, J. Ni, G. Eden, Z. Ou, and Q. Chen
20. On-Chip Nanoscale Storage System Using Chimeric DNA (Application number: 16/593,450, **issued** 7/20/2023). Inventors: Olgica Milenkovic, Nagendra Athreya, Apratim Khandelwal, Jean-Pierre Leburton, Xiuling Li, Charles Schroeder, Kasra Tabatabaei, and Bo Li.
21. Electrically Controlled Nanofluidic DNA Sluice for Data Storage Applications (pending). Inventors: Jean-Pierre Leburton, Xiuling Li, Nagendra B Athreya, Apratim Khandelwal
22. Electroplating method for enhancing the performance of rolled-up passive components (application number: 63/093,363, provisional patent filed 10/19/2020). Inventors: Xiuling Li, Apratim Khandelwal, and Zhendong Yang.
23. Tunable ultra-small monolithically-rolled-up components by piezoelectric actuation (application number: 63/497,221, provisional patent filed 04/20/2023). Inventors: Xiuling Li, Zhendong Yang, and Kristen Nguyen.

Patent Portfolio III: Nanowires

24. Method of fabricating a planar semiconductor nanowire (Patent number: 12/989,558, **issued** 08/19/2014). Inventors: Xiuling Li, Seth A. Fortuna
25. Field effect transistor structure comprising a stack of vertically separated channel nanowires (Patent number: 13/896,537, **issued** 12/29/2015 and **licensed to a major global semiconductor company**). Inventors: Xiuling Li and Yi Song
26. High electron mobility transistor (HEMT) comprising stacked nanowire or nanosheet heterostructures (patent 17/712,683 filed 04/04/2022). Inventors: Xiuling Li and Shaloo Rakheja.

PEER-REVIEWED JOURNAL PUBLICATIONS (>170):

(ORCID: <https://orcid.org/0000-0003-3698-5182>)

(h-index 59, <https://scholar.google.com/citations?user=mqgv9xyaaaaj&hl=en>)

1. “Enhancing the Performance of Self-rolled-up 3D Power Inductors via Deterministic Electroplating on Curved Surfaces,” Z. Yang, A. Khandelwal, A. Wang, K. Nguyen, S. Wicker, Y. V. Shao, and X. Li, submitted.
2. “Damage-free Efficiency Scaling of Micro-LEDs by Metal-assisted Chemical Etching,” C. Y. Chan, H. C. Roberts, Y. Xiao, P. J. Froeter, D. J. Siever, Z. Mi, and X. Li, under review.
3. “Demystifying Metal-Assisted Chemical Etching of GaN and Related Heterojunctions,” C. Y. Chan, J. P. Menzel, Y. Dong, Z. Long, A. Waseem, X. Wu, Y. Xiao, A. Xie, E. K. C. Chow, S. Rakheja, V. S. Batista, Z. Mi, and X. Li, under review.
4. “Strain-Induced Self-Rolled-up Microtubes for Multifunctional On-Chip Microfluidics Applications,” *Biomicrofluidics*, 17, 051501 (2023). **Invited paper.**
5. “Temperature Dependent Characteristics of β -Ga₂O₃ FinFETs by MacEtch,” Z. Ren, H.-C. Huang, H. Lee, C. Chan, H. C. Roberts, X. Wu, A. Waseem, A. F. M. A. U. Bhuiyan, H. Zhao, W. Zhu and X. Li, *Appl. Phys. Lett.* 123, 043505, 2023. <https://doi.org/10.1063/5.0159420>
6. “Programmable Vapor-Phase Metal-Assisted Chemical Etching for Versatile High-Aspect Ratio Silicon Nanomanufacturing,” L. L. Janavicius, J. A. Michaels, C. Chan, D. J. Sievers, and X. Li, *Appl. Phys. Rev.* 10, 011409 (2023); **Featured Article.** <https://aip.scitation.org/doi/10.1063/5.0132116>
7. “There Is Plenty of Room All-Around,” *IEEE Nanotechnology Magazine*, X. Li, 1 – 5 (2023). <https://ieeexplore.ieee.org/document/10011401>
8. “A Review of Recent Progress in β -Ga₂O₃ Epitaxial Growth: effect of substrate orientation and precursors in MOCVD,” A. Waseem, Z. Ren, H.-C. Huang, K. Nguyen, X. Wu, and X. Li, *Phys. Status Solidi A*, 2200616 (2022). <https://doi.org/10.1002/pssa.202200616>
9. “ β -Ga₂O₃ FinFETs with ultra-low Hysteresis by Plasma-Free Metal-Assisted Chemical Etching,” H.-C. Huang, Z. Ren, A. U. Bhuiyan, Z. Feng, Z. Yang, X. Luo, A. Q. Huang, A. Green, K. Chabak, H. Zhao, and X. Li, *Appl. Phys. Lett.* 121, 052102 (2022). <https://doi.org/10.1063/5.0096490> **Editor's Pick.**
10. “Self-rolled-up Aluminum Nitride-based 3D Architectures Enabled by Record-high Differential Stress,” A. Khandelwal, Z. Ren, S. Namiki, Z. Yang, N. Choudhary, C. Li, P. Wang, Z. Mi, and X. Li, *ACS Appl. Mater. Interfaces*, 14, 25, 29014–29024 (2022). <https://doi.org/10.1021/acsami.2c06637>
11. “Position control of Self-grown III-V Nanowire Arrays on Si Substrates via Micron-size Patterns by Photolithography,” Y. H. Song, D. G. Kim, D. W. Lee, J. W. Hwang, P. K. Mohseni, J. C. Shin, and X. Li, *Crystal Growth & Design*, 22 (4), 2266–2271 (2022). <https://doi.org/10.1021/acs.cgd.1c01351>
12. “Selective Area Heteroepitaxy of p-i-n Junction GaP Nanopillar Arrays on Si (111) by MOCVD,” W. Choi, H.-C. Huang, S. Fan, P. K. Mohseni, M. L. Lee, and X. Li, *IEEE J. Quantum Electron.* 58(4), 3200106 (2022). <https://ieeexplore.ieee.org/document/9714910>
13. “Self-Assembled Microtubular Electrodes for on-Chip Low-Voltage Electrophoretic Manipulation of Charged Particles and Macromolecules,” A. Khandelwal, N. Athreya, M. Q. Tu, L. Janavicius, Z. Yang, O. Milenkovic, J.-P. Leburton, C. Schroeder, and X. Li, *Microsystems & Nanoengineering*, Article 27 (2022). <https://www.nature.com/articles/s41378-022-00354-6>
14. “Physical Modeling of Monolithic Self-rolled-up Microtube Interdigital Capacitors,” *IEEE Transactions on Components, Packaging and Manufacturing Technology*, X. Luo, Z. Yang, M. Kraman, L. Sang, Y. Zhang, X. Li, and W. Huang, (2021). DOI: 10.1109/TCPMT.2021.3128884
15. “Wet etch, dry etch, and MacEtch of β -Ga₂O₃: a review of characteristics and mechanism,” H.-C. Huang, Z. Re, C. Chan, and X. Li, *J. Mater. Res.* 36, 4756–4770 (2021); invited feature paper review. <https://doi.org/10.1557/s43578-021-00413-0>

16. "Electrically Controlled Nanofluidic DNA Sluice for Data Storage Applications," N. B. M. Athreya, A. Khandelwal, X. Li, and J.-P. Leburton, *ACS Appl. Nano Mater.* 4 (10), 11063–11069 (2021). <https://doi.org/10.1021/acsanm.1c02519>
17. "Nonlocal Time-Resolved Terahertz Spectroscopy in the Near Field," A. Pizzuto, E. Castro-Camus, W. Wilson, W. Choi, X. Li, and D. M. Mittleman, *ACS Photonics*, 8 (10), 2904–2911 (2021). Doi: 10.1021/acsp Photonics.1c01367
18. "Homoepitaxial GaN Micropillar Array by Plasma-Free Photo-Enhanced MacEtch," C. Chan, S. Namiki, J. Hite, M. Mastro, S. B. Qadri, and X. Li, *J. Vac. Sci. Technol. A* 39, 053212 (2021). Doi: 10.1166/6.0001231 **Featured Article and Cover of Sept./Oct. Issue.**
19. "Monolithic Lateral pn Junction GaAs Nanowire Diodes via Selective Lateral Epitaxy," W. Choi, G. Zhang, H.-C. Huang, P. K. Mohseni, C. Zhang, J. D. Kim, and X. Li, *Nanotechnology*, 32, 505203 (2021). <https://doi.org/10.1088/1361-6528/ac05e8>
20. "Producing Silicon Carbide Micro and Nanostructures by Plasma-Free Metal-Assisted Chemical Etching," J. A. Michaels, L. Janavicius, X. Wu, C. Chan, H.-C. Huang, S. Namiki, M. Kim, D. Sievers, and X. Li, *Adv. Func. Mater.* 31, 2103298 (2021). <https://doi.org/10.1002/adfm.202103298>
21. "Elastocapillary Force Induced Alignment of Large Area Planar Nanowires," K. Jung, W. Choi, Wonsik, H.-C. Huang, J. D. Kim, K. Chabak, and X. Li, *ACS Appl. Mater. Interfaces*, 13, 9, 11177 (2021) doi: 10.1021/acsami.0c20289.
22. "Anti-reflective porous Ge by open-circuit and lithography-free metal-assisted chemical etching," Y.-Y. Zhang, S.-H. Shin, H.-J. Kang, S. Jeon, S. H. Hwang, W. Zhou, J.-H. Jeong, X. Li, and M. Kim, *Appl. Surf. Sci.* 546, 149083 (2021). <https://doi.org/10.1016/j.apsusc.2021.149083>
23. "Enhancing Performance of GaAs Photodiodes via Monolithic Integration of Self-Formed Graphene Quantum Dots and Antireflection Surface Texturing," S. Namiki, H.-C. Huang, J. Soares, X. Wu, J. D. Kim, B. Jiang, V. Srikumar, and X. Li, *Adv. Photon. Res.* 2: 2000134 (2021). <https://doi.org/10.1002/adpr.202000134>
24. "Au-Free Low-Temperature Ohmic Contacts for AlGaIn/AlN/GaN Heterostructures," X. Wang, H.-C. Huang, B. Green, X. Gao, D. Rosenmann, X. Li, and J. Shi *J. Vac. Sci. Technol. B* 38, 062206 (2020). <https://doi.org/10.1166/6.0000287>.
25. "Monolithic Heterogeneous Integration of 3D Microwave L-C Elements by Self-Rolled-up Membrane Nanotechnology," Z. Yang, M. D. Kraman, Z. Zheng, H. Zhao, J. Zhang, S. Gong, Y. V. Shao, W. Huang, P. Wang, and X. Li, *Adv. Func. Mater.* 30, 2004034 (2020). **First experimental demonstration of monolithic rolled-up L-C network.**
26. "Kirigami Inspired Self-assembly of 3D Structures," A. M. Abdullah, X. Li, P. V. Braun, J. A. Rogers, and K. J. Hsia, *Adv. Funct. Mater.* 1909888 (2020). doi.org/10.1002/adfm.201909888
27. "Hybrid Integration of n-MoS₂/p-GaN Diodes by Quasi-van der Waals Epitaxy," C.-Y. Liu, H.-C. Huang, W. Choi, J. Kim, K. Jung, W. Sun, N. Tansu, W. Zhou, H.-C. Kuo, and X. Li, *ACS Appl. Electron. Mater.* 2, 419-425 (2020). DOI: 10.1021/acsaelm.9b00607
28. "Monolithic mtesla Level Magnetic Induction by Self-Rolled-up Membrane Technology," W. Huang, Z. Yang, M. D. Kraman, Q. Wang, Z. Ou, M. M. Rojo, A. S. Yalamarthy, V. Chen, F. Lian, J. H. Ni, S. Liu, H. Yu, L. Sang, J. Michaels, D. J. Sievers, J. G. Eden, P. V. Braun, Q. Chen, S. Gong, D. G. Senesky, E. Pop, and X. Li, *Sci. Adv.* 6, eaay4508 (2020).
29. "Effect of Perforation on the Thermal and Electrical Breakdown of Self-Rolled-up Nanomembrane Structures," J. A. Michaels, D. Wood, P. Froeter, W. Huang, D. Sievers, and X. Li, *Adv. Mater. Interfaces*, 6, 1901022 (2019). DOI: 10.1002/admi.201901022
30. "Ultrathin Silicon Nanomembrane in a Tubular Geometry for Enhanced Photodetection," C. Xu, R. Pan, Q. Guo, X. Wu, G. Li, G. Huang, Z. An, X. Li, and Y. F. Mei, *Adv. Opt. Mater.* 7, 1900823 (2019).

31. "CMOS-Compatible Catalyst for MacEtch: Titanium Nitride Assisted Chemical Etching in Vapor Phase for High Aspect Ratio Silicon Nanostructures," J.D. Kim, M. Kim, C. Chan, N. Draeger, J.J. Coleman, and X. Li, *ACS Appl. Mater. Interfaces*, 11, 27371-27377 (2019). doi: 10.1021/acsami.9b00871.
32. "High Aspect Ratio β -Ga₂O₃ Fin Arrays with Low Interface Charge Density by Inverse Metal-Assisted Chemical Etching," H.-C. Huang, M. Kim, X. Zhan, K. Chabak, J. D. Kim, A. Kvit, D. Liu, Z. Ma, J.-M. Zuo, and X. Li, *ACS Nano*, 13, 8, 8784-8792 (2019). <https://doi.org/10.1021/acsnano.9b01709>.
33. "Monolithic radio frequency SiN_x self-rolled-up nanomembrane interdigital capacitor modeling and fabrication" by L. Sang, H. Zhou, Z. Yang, M. Kraman, H. Zhao, J. Michaels, D. Sievers, J. Schutt-Aine, X. Li, W. Huang, *Nanotechnology*, 30, 364001 (2019).
34. "Laterally confined photonic crystal surface emitting laser incorporating monolayer tungsten disulfide," X. Ge, M. Minkov, S. Fan, X. Li, and W. Zhou, *npj 2D Mater. App.* 3, 16 (2019).
35. "Reconfigurable nanoscale soft materials," Z. Ou, A. Kima, W. Huang, P. V. Braun, X. Li, and Q. Chen, *Curr. Opin. Solid State Mater. Sci.* 2018. DOI: 10.1016/j.cossms.2018.12.002
36. "Nanoscale Groove Textured β -Ga₂O₃ by Room Temperature Inverse Metal-assisted chemical Etching and Photodiodes with Enhanced Responsivity," M. Kim, H.C. Huang, J.D. Kim, K.D. Chabak, A.R.K. Kalapala, W. Zhou, and X. Li, *Appl. Phys. Lett.* 113 (22), 222104 (2018). <https://doi.org/10.1063/1.5053219>
37. "Colloidal Metal–Organic Framework Hexapods Prepared from Postsynthesis Etching with Enhanced Catalytic Activity and Rollable Packing," Z. Ou, X. Song, W. Huang, X. Jiang, S. Qu, Q. Wang, P. V. Braun, J. S. Moore, X. Li, and Q. Chen, *ACS Appl. Mater. Interfaces*, 10 (48), 40990 (2018). DOI: 10.1021/acsami.8b17477
38. "Aligning Synthetic Hippocampal Neural Circuits via Self-Rolled-Up Silicon Nitride Microtube Arrays," O. Cangellaris, E. Corbin, P. Froeter, J. Michaels, X. Li, and M. Gillette, *ACS Appl. Mater. Interfaces*, 10 (42), 35705 (2018). DOI: 10.1021/acsami.8b10233
39. "Enhanced performance of Ge photodiodes via monolithic antireflection texturing and α -Ge self-passivation by inverse metal-assisted chemical etching," M. Kim, S. Yi, J. D. Kim, X. Yin, J. Li, J. Bong, D. Liu, S.-C. Liu, A. Kvit, W. Zhou, X. Wang, Z. Yu, Z. Ma, and X. Li, *ACS Nano*, 12 (7), 6748 (2018). DOI: 10.1021/acsnano.8b01848
40. "Anisotropic Rolling and Controlled Chirality of Nanocrystalline Diamond Nanomembranes toward Biomimetic Helical Frameworks," Z. Tian, W. Huang, B. Xu, X. Li, and Y. Mei, *Nano Lett.* 18 (6), pp 3688–3694, (2018). DOI: 10.1021/acs.nanolett.8b00828
41. "Self-folded Gripper-like Architectures from Stimuli-responsive Bilayers," A. Abdullah, P. Braun, J.A. Rogers, X. Li, and K.J. Hsia, *Adv. Mater.* (2018). DOI: 10.1002/adma.201801669.
42. "Three-dimensional radio frequency transformers based on a self-rolled-up membrane platform," W. Huang, J. Zhou, P. Froeter, K. Walsh, S. Liu, M. Li, J. Michaels, D. Sievers, S. Gong, and X. Li, *Nature Electronics*, 1, 305-313 (2018). DOI: 10.1038/s41928-018-0073-5 **First experimental demonstration of rolled-up transformers.**
43. "Low index contrast heterostructure photonic crystal cavities with high quality factors and vertical radiation coupling," X. Ge, M. Minkov, S. Fan, X. Li, and W. Zhou, *Appl. Phys. Lett.* 112, 141105 (2018).
44. "Self-Anchored Catalyst Interface Enables Ordered Via Array Formation from Sub-micron to millimeter Scale for Poly- and Single-Crystalline Silicon," J.D. Kim, M. Kim, L. Kong, P. Mohseni, S. Ranganathan, J. Pachamuthu, W.K. Chim, S.Y. Chiam, J.J. Coleman, and X. Li, *ACS Appl. Mater. Interfaces*, 10 (10), pp 9116–9122 (2018).
45. "Downscaling inductors with graphene," *Nature Electronics, News and Views*, W. Huang and X. Li, 1(1), 6 (2018).

46. "Passive wavelength tuning and multichannel photonic coupling using monolithically integrated vertical micro resonators on ridge waveguides," X. Yu, L. L. Goddard, J. Zhu, X. Li, and X. Chen, *Appl. Phys. Lett.*, 112, 021108 (2018).
47. "Morphable 3D Mesostructures and Microelectronic Devices by Multistable Buckling Mechanics," H. Fu, K. Nan, W. Bai, W. Huang, K. Bai, L. Lu, C. Zhou, Y. Liu, F. Liu, J. Wang, M. Han, Z. Yan, H. Luan, Y. Zhang, Y. Zhang, J. Zhao, X. Cheng, M. Li, J. W. Lee, Y. Liu, D. Fang, X. Li, Y. Huang, Y. Zhang, and J. A. Rogers, *Nature Mater.* 17, 268–276 (2018). doi:10.1038/s41563-017-0011-3.
48. "AlGaAs/Si Dual-junction Tandem Solar Cells by Epitaxial Lift-off and Print Transfer-Assisted Direct Bonding," K. Xiong, H. Mi, T. Chang, D. Liu, Z. Xia, M. Wu, X. Yin, S. Gong, W. Zhou, J. C. Shin, X. Li, M. Arnold, X. Wang, H.-C. Yuan, and Z. Ma, *Energy Sci Eng.* 6(1), 47-55 (2018). doi:10.1002/ese3.182.
49. "Enhanced Color-Conversion Efficiency of Hybrid Nanostructured-Cavities InGaN/GaN Light-Emitting Diodes Consisting of Nontoxic InP Quantum Dots," C.-Y. Liu, T.-P. Chen, J.-K. Huang, T.-N. Lin, C.-Y. Huang, X. Li, H. -C. Kuo, J.-L. Shen, C.-Y. Chang, *IEEE J. Selected Topics Quantum Electron.* 23 (5), 1-7 (2017).
50. "Damage-Free Smooth-Sidewall InGaAs Nanopillar Array by Metal-Assisted Chemical Etching," L. Kong, Y. Song, J. D. Kim, L. Yu, D. Wasserman, W. K. Chim, S. Y. Chiam, and X. Li, *ACS Nano*, 11 (10), pp 10193-10205 (2017).
51. "A Review of III-V Planar Nanowire Arrays: Selective Lateral VLS Epitaxy and 3D Transistors," C. Zhang, X. Miao, K. Chabak, and X. Li, *J. Phys. D: Appl. Phys.* 50, 393001 (2017).
52. "Minimizing Isolate Catalyst Motion in Metal-Assisted Chemical Etching for Deep Trenching of Silicon Nanohole Array," L. Kong, Y. Zhao, B. Dasgupta, Y. Ren, K. Hippalgaonkar, X. Li, W. K. Chim, and S. Y. Chiam, *ACS Appl. Mater. Interfaces*, 9 (24), pp 20981–20990 (2017).
53. "Printing, Folding and Assembly Methods for 3D Mesostructures in Advanced Materials" Y. Zhang, F. Zhang, Z. Yan, Q. Ma, X. Li, Y. Huang, and J. A. Rogers, *Nature Rev. Mater.* 2, 1709 (2017). **Selected as cover.**
54. "Mechanically-guided deterministic assembly of 3D mesostructures assisted by residual stresses," H. Fu, K. Nan, P. Froeter, W. Huang, Y. Liu, Y. Wang, J. Wang, Z. Yan, H. Luan, X. Guo, Y. Zhang, C. Jiang, L. Li, A. C. Dunn, X. Li, Y. Huang, Y. Zhang, J. A. Rogers, *Small*, 13, 1700151 (2017).
55. "Direct Electrical Probing of Periodic Modulation of Zn-Dopant Distributions in Planar VLS GaAs Nanowires," W. Choi, E. Seabron, P.K. Mohseni, J.D. Kim, T. Gokus, A. Cernescu, P. Pochet, H. Johnson, W.L. Wilson, and X. Li, *ACS Nano*, 11 (2), pp 1530–1539 (2017).
56. "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.* 27, 1605614 (2017).
57. "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 cover.**
58. "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).
59. "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).
60. "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).

61. "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). **First report on record high aspect ratio InP FinFET by inverse-MacEtch.**
62. "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).
63. "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).
64. "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).
65. "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).
66. "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).
67. "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).
68. "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).
69. "Evolution of GaAs Nanowire Geometry in Selective Area Epitaxy," K. P. Bassett, P.K. Mohseni, and X. Li, *Appl. Phys. Lett.* 106, 133102 (2015).
70. "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). **First experimental demonstration of rolled-up inductors.**
71. "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).
72. "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).
73. "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).
74. "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).
75. "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).

76. "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). **First report on inverse-MacEtch.**
77. "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). <https://doi.org/10.1021/nl503596j> **First demonstration of state-of-the-art RF performance of planar nanowire transistors. Selected as the cover image of May 2015 issue.**
78. "Scaling Junctionless Multigate MOSFETs by Step-doping in Channels," Y. Song and X. Li, *Appl. Phys. Lett.* 105 (22), 223506 - 223506-3 (2014).
79. "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).
80. "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. Cangelaris, M. U. Gillette, J. C. Williams and X. Li, *ACS Nano*, 8 (11), 11108–11117 (2014).
81. "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).
82. "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).
83. "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).
84. "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).
85. "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).
86. "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).
87. "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). **Related patent has been licensed by a major global microelectronics company.**
88. "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).
89. "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).
90. "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).
91. "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).

92. "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).
93. "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).
94. "GaAs 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).
95. "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).
96. "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).
97. "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).
98. "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).
99. "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).
100. "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).
101. "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).
102. "In_xGa_{1-x}As 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). **First report on van der Waals epitaxy of III-V nanowires on graphene.**
103. "Relationship between Planar GaAs Nanowire Growth Direction and Substrate Orientation," R. Dowdy, D. Walko, and X. Li, *Nanotechnology* 24, 035304 (2013).
104. "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).
105. "On-Chip Inductors with Self-rolled-up SiN_x 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). **First report on using the S-RuM platform for passive electronic component miniaturization and integration.**
106. "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).
107. "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).
108. "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). **Patent based on this work has been licensed by a major semiconductor company.**
109. "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).
110. "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).
111. "Characteristics of Strain-Induced In_xGa_{1-x}As 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).
112. "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).
113. "Two-Dimensional Nanomembranes: Can They Outperform Lower Dimensional Nanocrystals?" B. Nikoobakht and X. Li, *ACS Nano*, 6 (3), 1883-1887 (2012).
114. "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).
115. "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).
116. "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).
117. "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).
118. "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).
119. "Scalable Monolithically Grown AlGaAs-GaAs Planar Nanowire High Electron Mobility Transistor," X. Miao and X. Li, *IEEE Electron. Dev. Lett.*, 32, 1227-1229 (2011).
120. "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).
121. "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).
122. "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).
123. "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.
124. "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).
125. "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).

126. "Light Emission Characteristics and Mechanics of Foldable Inorganic Light-Emitting Diodes," S. Park, A. Le, J. Wu, Y. Huang, X. Li, and J. A. Rogers, *Adv. Mater.* 22, 2062 (2010).
127. "GaAs Photovoltaics and Optoelectronics using Releasable Multilayer Epitaxial Assemblies," J. Yoon, S. Jo, I. Jung, I. Chun, H. Kim, M. Meitl, E. Menard, X. Li, J. J. Coleman, U. Paik, J. A. Rogers, *Nature*, 465, 329-333 (2010).
128. "Nonlithographic Patterning and Metal-Assisted Chemical Etching for Manufacturing of Tunable Light-Emitting Silicon Nanowire Arrays," W. Chern, K. Xu, I. Chun, B. P. de Azeredo, N. Ahmed, K-H. Kim, J. Zuo, N. Fang, P. Ferreira, and X. Li, *Nano Lett.* 10 (5), 1582–1588 (2010).
129. "Topography and Refractometry of Nanostructures using Spatial Light Interference Microscopy (SLIM)," Z. Wang, I. Chun, X. Li, Z. Ong, E. Pop, L. Millet, M. Gillette, and G. Popescu, *Opt. Lett.* 35 (2), 208 (2010).
130. "Metal-catalyzed Semiconductor Nanowires: a Review on the Control of Growth Direction," S.A. Fortuna, and X. Li, *Semiconductor Science and Technology*, 25 (2010) 024005; invited review.
131. "Printed Assemblies of Inorganic Light-Emitting Diodes for Deformable and Semitransparent Displays," S. Park, Y. Xiong, R. Kim, P. Elvikis, M. Meitl, D. Kim, J. Wu, J. Yoon, C. Yu, Z. Liu, Y. Huang, K. Hwang, P. Ferreira, X. Li, K. Choquette, and J. A. Rogers, *Science* 325, 977-981 (2009).
132. "GaAs MESFET with a High-Mobility Self-Assembled Planar Nanowire Channel," S.A. Fortuna, and X. Li, *IEEE Elec. Dev. Lett.* 30 (6), 593-595 (2009).
133. "Planar GaAs Nanowires on GaAs (100) Substrates: Self-Aligned, Nearly Twin-Defect Free, and Transfer-Printable," S.A. Fortuna, J. Wen, I.S. Chun, and X. Li, *Nano Letters* 8 (12), 4421-4427 (2008). **First report of the discovery of planar nanowire growth.**
134. "Strain Induced Semiconductor Nanotubes: from Formation Process to Device Applications," X. Li, *J. Phys. D: Appl. Phys.* 41, 193001 (2008).
135. "Controlled Assembly and Dispersion of Strain-Induced InGaAs/GaAs Nanotubes," I.S. Chun, and X. Li, *IEEE Trans. Nanotech.* 7, 493-495 (2008).
136. "Nanoscale Three Dimensional Pattern Formation in Light Emitting Porous Silicon," I.S. Chun, E. Chow, and X. Li, *Appl. Phys. Lett.* 92, 191113 (2008).
137. "InGaAs/GaAs 3D Architecture Formation by Strain Induced Self-Rolling with Lithographically Defined Rectangular Stripe Arrays," I.S. Chun, V.B. Verma, V.C. Elarde, S.W. Kim, J.M. Zuo, J.J. Coleman, and X. Li, *J. Cryst. Growth*, 310, 2353-2358 (2008).
138. "Fabrication and Characterization of InGaP/GaAs Heterojunction Bipolar Transistors on Germanium on Insulator (GOI) Substrates," S. G. Thomas, E. S. Johnson, C. Tracy, P. Maniar, X. Li, B. Roof, Q. Hartmann and D. A. Ahmari, *IEEE Electron Device Lett.*, 26, 438, (2005).
139. "In-plane Bandgap Control in Porous GaN through Electroless Wet Chemical Etching," X. Li, Y.-W. Kim, P. W. Bohn, and I. Adesida, *Appl. Phys. Lett.*, 80 980-982 (2002).
140. "In-plane Control of Morphology and Tunable Photoluminescence in Porous Silicon Produced by Metal-assisted Electroless Chemical Etching," S. Chattopadhyay, X. Li, P.W. Bohn, *J. Appl. Phys.* 91, 6134 (2002).
141. "Catalytic Amplification of the Soft Lithographic Patterning of Si. Nonelectrochemical Orthogonal Fabrication of Photoluminescent Porous Si Pixel Arrays," Y. Harada, X. Li, P.W. Bohn, and R.G. Nuzzo, *J. Am. Chem. Soc.* 123, 8709-8717 (2001).
142. "Experimental Factors Determining the Efficiency of Analyte Ion Generation in Laser Desorption/Ionization Mass Spectrometry on Porous Silicon," R.A. Kruse, X. Li, P.W. Bohn, and J.V. Sweedler, *Analyt. Chem.* 73, 3639-3645 (2001).
143. "Temperature Dependence of Photoluminescence Spectra from Multiple Er³⁺ Sites in Er-Implanted Undoped and Mg-doped GaN," S. Kim, S.J. Rhee, J.O. White, A.M. Mitofsky, X. Li, G.C. Papan, J.J. Coleman; S.G. Bishop, *Mater. Sci. Eng. B*, 81, 136, (2001).

144. "Effects of Material Growth Technique and Mg Doping on Er³⁺ Photoluminescence in Er-Implanted GaN," S. Kim, R.L. Henry, A.E. Wickenden, D.D. Koleske, S.J. Rhee, J.O. White, J.M. Myoung, K. Kim, X. Li, G.C. Papen, J.J. Coleman; S.G. Bishop, *J. Appl. Phys.*, 90, 252 (2001).
145. "Spectroscopic Studies of the Modification of Crystalline Si (111) Surfaces with Covalently-attached Alkyl Chains using a Chlorination/Alkylation Method," A. Bansal, X. Li, S. Yi, W. H. Weinberg, and N. S. Lewis, *J. Phys. Chem. B*, 105 (42), 10266-10277 (2001).
146. "Selective Enhancement of 1540 nm Er³⁺ Emission Centers in Er- implanted GaN by Mg Codoping," S. Kim, S.J. Rhee, X. Li, J.J. Coleman, and S.G. Bishop, *Appl. Phys. Lett.* 76, 2403 (2000).
147. "Metal-assisted Chemical Etching in HF/H₂O₂ Produces Porous Silicon," X. Li and P.W. Bohn, *Appl. Phys. Lett.* 77, 2572 (2000). <https://doi.org/10.1063/1.1319191> **First report on the discovery of MacEtch; Cited 1200+ times according to Google Scholar.**
148. "Spatially Resolved Bandedge Emission from Partially Coalesced GaN Pyramids Prepared by Epitaxial Lateral Overgrowth," X. Li, P.W. Bohn, J. Kim, J. A. White and J. J. Coleman, *Appl. Phys. Lett.* 76, 3031 (2000).
149. "Arsenic Oxide Microcrystals in Anodically Processed GaAs: Electrochemical Growth, Spectroscopy and Morphology," X. Li and P.W. Bohn, *J. Electrochem. Soc.* 147, 1740 (2000).
150. "Impurity States Are the Origin of Yellow Band Origin in GaN Produced by Epitaxial Lateral Overgrowth," X. Li, P.W. Bohn and J. J. Coleman, *Appl. Phys. Lett.* 75, 4049 (1999). **First report to attribute yellow band origin in GaN to impurity states instead of dislocations by spatial mapping.**
151. "Production and Evolution of Composition, Morphology, and Luminescence Properties of Microcrystalline Arsenic Oxide Produced During Anodic Processing of (100) GaAs," C. M. Finnie, X. Li, And P. W. Bohn, *J. Appl. Phys.* 86, 4997 (1999).
152. "Annealing Studies of Photoluminescence Spectra from Multiple Er³⁺ Centers in Er-implanted GaN," S. Kim, S.J. Rhee, X. Li, J.J. Coleman, and S.G. Bishop, *J. Electron. Mater.* 28, 266 (1999).
153. "Photoluminescence and Photoluminescence Excitation Spectroscopy of in situ Er-Doped and Er-Implanted GaN Films Grown by Hydride Vapor Phase Epitaxy," S. Kim, X. Li, J.J. Coleman, R. Zhang, D. M. Hansen, T.F. Kuech, and S.G. Bishop, *MRS Internet J. Nitride Semicond. Res.* 4S1, U956 (1999).
154. "GaN Lateral Overgrowth and Optical Characterization," X. Li, S. G. Bishop, and J. J. Coleman, *Appl. Phys. Lett.* 73, 1179 (1998).
155. "The Incorporation of Arsenic in GaN by Metalorganic Chemical Vapor Deposition," X. Li, S. Kim, E.E. Reuter, S.G. Bishop, and J.J. Coleman, *Appl. Phys. Lett.* 72, 1990 (1998). **First report on mixed anion GaN (isoelectronic doping using As) and band bowing.**
156. "Excitation Mechanisms of Multiple Er³⁺ Sites in Er-Implanted GaN," Kim, S.J. Rhee, X. Li, J.J. Coleman, S.G. Bishop, and P. B. Klein, *J. Electron. Mater.* 27, 246 (1998).
157. "Photoluminescence and Photoluminescence Excitation Spectroscopy of Multiple Nd³⁺ Sites in Nd-Implanted GaN," Kim, S.J. Rhee, X. Li, J.J. Coleman, and S.G. Bishop, *Phys. Rev. B* 57, 14588 (1998).
158. "Observation of Multiple Er³⁺ Sites in Er-Implanted GaN by Site-Selective Photoluminescence Excitation Spectroscopy," Kim, S. J. Rhee, D. A. Turnbull, E. E. Reuter, X. Li, J. J. Coleman, and S. G. Bishop, *Appl. Phys. Lett.* 71, 231 (1997).
159. "Characteristics of GaN Stripes Grown by Selective-Area Metalorganic Chemical Vapor Deposition," X. Li, A. M. Jones, S. D. Roh, D. A. Turnbull, S. G. Bishop, and J. J. Coleman, *J. Electron. Mater.* 26, 306 (1997).

160. "Depth-Resolved and Excitation Power Dependent Cathodoluminescence Study Of GaN Films Grown by Metalorganic Chemical Vapor Deposition," X. Li and J. J. Coleman, *Appl. Phys. Lett.* 70, 438 (1997).
161. "Trap-Mediated Excitation of Er³⁺ Photoluminescence in Er-Implanted GaN," Kim, S. J. Rhee, D. A. Turnbull, X. Li, J. J. Coleman, and S. G. Bishop, P. B. Klein, *Appl. Phys. Lett.* 71, 2662 (1997).
162. "Surface Photoabsorption Monitoring of the Growth of GaAs and InGaAs at 650° C By MOCVD," Y. D. Kim, F. Nakamura, E. Yoon, D. V. Forbes, X. Li, And J. J. Coleman, *J. Electron. Mater.* 26, 1164 (1997).
163. "Effect of E-Beam Irradiation on a P-N Junction GaN Light Emitting Diode," X. Li, S. Q. Gu, E. E. Reuter, J. T. Verdeyen, S. G. Bishop and J. J. Coleman, *J. Appl. Phys.* 80, 2687 (1996).
164. "Time Dependent Study of Low Energy Electron Beam Irradiation of Mg-Doped GaN Grown by Metalorganic Chemical Vapor Deposition," X. Li and J. J. Coleman, *Appl. Phys. Lett.* 69, 1605 (1996).
165. "Luminescence Studies of GaN Grown on GaN and GaN/AlN Buffer Layers by Metalorganic Chemical Vapor Deposition," D. A. Turnbull, X. Li, S.Q. Gu, E.E. Reuter, J.J. Coleman and S.G. Bishop, *J. Appl. Phys.* 80, 5609 (1996).
166. "A New Buffer Layer for the Growth of GaN by MOCVD," X. Li, D. V. Forbes, S. Q. Gu, D. A. Turnbull, S. G. Bishop, and J. J. Coleman, *J. Electron. Mater.* 24, 1711 (1995).
167. "Alkylation of Si Surfaces Using a 2-Step Halogenation Grignard Route," A. Bansal, X. Li, I. Lauerhmann, N. S. Lewis, S. Yi, and W. H. Weinberg, *J. Am. Chem. Soc.* 118, 7225 (1996).
168. "Photon-Induced Ejection of Halogen Atoms in Alkali-Halide Nanocrystals," X. Li, R. D. Beck and R. L. Whetten, *Phys. Rev. Lett.* 68, 3420 (1992).
169. "Stability Islands for Doubly Charged Clusters Below the Kinetic Critical Size," X. Li and R. L. Whetten, *Chem. Phys. Lett.*, 196, 535 (1992).
170. "Ultraviolet Absorption Bands Of Ionic Compound Clusters: Onset Of Crystalline Structures In [Csn+1In]⁺, N = 1 - 13," X. Li And R. L. Whetten, *J. Chem. Phys.* 98, 6170 (1993).
171. "Ultraviolet Absorption Bands of [Csn+1In]⁺ Clusters (n < 14)," X. Li and R. L. Whetten, *Z. Phys. D* 26, 198-200 (1993).
172. "Nonbulk Convergence of Solvent Spectral Shift in Doped Molecular Clusters," X. Li, M. Y. Hahn, S. El-Shell, and R. L. Whetten, *J. Phys. Chem.* 95, 8524 (1991).
173. "Reactions of Alkali-Halide Clusters," R. L. Whetten, M. L. Homer, X. Li, F. E. Livingston, P. St. John and R. D. Beck, *Ber. Bunsenges. Physik. Chem.* 96, 1120 (1992).
174. "Complete Statistical Thermodynamics of the Cluster Phase Transition," H. P. Cheng, X. Li and R. L. Whetten, *Phys. Rev. A* 46, 791 (1992).
175. "Spectroscopic Signatures of Structural Aufbau in (Benzene)_n; n=7-19," D. C. Easter, X. Li and R. L. Whetten, *J. Chem. Phys.* 95, 6362 (1991).

BOOKS AND BOOK CHAPTERS

1. H.-C. Huang and X. Li, "Etching of β -Ga₂O₃," in *Ultrawide Bandgap β -Ga₂O₃ Semiconductor: Theory and Applications*, edited by J. S. Speck and E. Farzana (AIP Publishing, Melville, New York, Feb. 2023), pp. 9-1–9-18.
2. Y. Mei, G. Huang, and X. Li, "Nanomembranes: Materials, Properties, and Applications," Wiley, July 2022, ISBN: 978-3-527-34446-8.
3. "Rolled-up Electronics and Origami," W. Huang and X. Li, in "Nanomembranes: Materials, Properties, and Applications," edited by Y. Mei, G. Huang, and X. Li, Wiley, 2022. ISBN: 978-3-527-34446-8

4. “Nanodevices and applications: My Nonlinear Career Trajectory,” X. Li, in “Women in Microelectronics,” edited by A. C. Parker and L. Lunardi, Springer, 2020. ISBN 978-3-030-46377-9
5. “Vapor-Liquid-Solid Growth of Semiconductor Nanowires,” J. M. Redwing, X. Miao, and X. Li, in “Handbook of Crystal Growth,” Vol. 3, edited by T. F. Kuech, Elsevier, 2014.
6. “Strain-induced Self Rolled-up Semiconductor Microtube Resonators: A New Architecture for Photonic Device Applications,” X. Miao, I. S. Chun, and X. Li, in “Three-Dimensional Nanoarchitectures: Designing Next-Generation Devices,” edited by W. Zhou and Z. L. Wang, Springer, 2011.
7. “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.

BULLETINS

1. “MacEtch: anisotropic metal assisted chemical etching defies the textbook,” Xiuling Li, SPIE Newsroom, DOI: 10.1117/2.1201203.004147, March 28, 2012.
2. “Coaxial nanowires from van der Waals epitaxy,” Xiuling Li and Parsian Mohseni, SPIE newsroom, DOI: 10.1117/2.1201309.005122, September 23, 2013.

CONFERENCE PROCEEDINGS (PARTIAL LIST):

1. K. Nguyen, Z. Yang, A. Wang, S. Walker, and X. Li, “Tunable ultra-small monolithically-rolled-up capacitors by piezoelectric actuation,” MEMS 2024, Austin, USA, Jan. 2024.
2. Z. Yang, A. Khandelwal, A. Wang, K. Nguyen, S. Walker, and X. Li, “S-RuM Inductors: 30-fold enhancement of inductance by controlled electroplating post rolling”, MEMS 2024, Austin, USA, Jan. 2024.
3. C. Y. Chan, J. P. Menzel, Y. Dong, Z. Long, A. Waseem, X. Wu, Y. Xiao, A. Xie, S. Rakheja, V. S. Batista, Z. Mi, and X. Li “Mechanism of hv-MacEtch in GaN and III-Nitride Heterojunctions,” 65th Electronic Materials Conference, Santa Barbara, USA, June 2023.
4. L. Janavicius, J. A. Michaels, C. Chan, D. J. Sievers, and X. Li, “Realization of Vapor-Phase MacEtch: Mechanism, Programmability and, Scalability,” 65th Electronic Materials Conference, Santa Barbara, USA, June 2023.
5. Z. Ren, H.-C. Huang, H. Lee, C. Chan, H. C. Roberts, X. Wu, A. Wasseem, W. Zhu and X. Li, “ β -Ga₂O₃ FinFETs by MacEtch: temperature dependent I -V characteristics,” 81st Device Research Conference (DRC), Santa Barbara, USA, June 2023.
6. Z. Ren, H.-C. Huang, H. Lee, C. Chan, A. Waseem, A. Bhuiyan, H. Zhao, W. Zhu and X. Li, β -Ga₂O₃ FinFETs: MacEtch Fabrication and Performance from 25 – 300°C,” Compound Semiconductor Week, Korea, May 2023.
7. H.-C. Huang, Z. Ren, A F M A. U. Bhuiyan, Z. Feng, X. Luo, A. Q. Huang, H. Zhao, and X. Li, “Avoiding Plasma Damage: MacEtch Enabled β -Ga₂O₃ FinFETs for On-Resistance Reduction and Hysteresis Elimination,” 7th IEEE Electron Devices Technology and Manufacturing (EDTM), Seoul, Korea, March 7 – 10, 2023.
8. A. Tunga, X. Li, S. Rakheja, “Modeling-based design and benchmarking of Al-rich AlGa_N 3D nanosheet MOSFET and MOSHEMTs for RF Applications,” 79th Device Research Conference (DRC), Virtual, June 20-23, 2021.
9. C.-H. Huang, Z. Ren, A. Green, K. Chabak, and X. Li, “Metal-Assisted Chemical Etching of (001) Beta-Ga₂O₃,” Compound Semiconductor Week, Sweden (virtual), May 2021.

10. S. Namiki, Y. H. Song, J. C. Shin, and X. Li, "Metal-Assisted Chemical Etching of InGaAsP For Distributed Feedback Laser Gratings," Compound Semiconductor Week, Sweden (virtual), May 2021.
11. C. Y. Chan, S. Namiki, J. K. Hite, and X. Li, "Photoinduced Open-circuit Metal-assisted Chemical Etching of Homoepitaxial GaN," Compound Semiconductor Week, Sweden (virtual), May 2021.
12. C. Y. Chan, S. Namiki, J. K. Hite, and X. Li, "Plasma-free Anisotropic Etching of GaN," CLEO, virtual, May 2021.
13. W. Choi, S. Fan, P. Mohseni, M. L. Lee, and X. Li, "Selective area epitaxy of GaP nanowire array on Si (111) by MOCVD," Compound Semiconductor Week, Nara, Japan, May 2019.
14. H.-C. Huang, M. Kim, X. Zhan, K. Chabak, J. D. Kim, J.-M. Zuo and X. Li, "On the Surface Properties of High Aspect Ratio β -Ga₂O₃ Fin Structures Formed by I-MacEtch," Compound Semiconductor Week, Nara, Japan, May 2019.
15. C.-Y. Liu, W. Choi, H. Huang, J.D. Kim, W. Zhou, W. Sun, N. Tansu, H. Kuo, and X. Li, "Pseudo-van der Waals Epitaxy of MoS₂ on Patterned and Planar GaN Substrates," CLEO, San Jose, CA, May 2019.
16. M. Kim, S. Yi, J. D. Kim, X. Yin, J. Li, J. Bong, D. Liu, S.-C. Liu, A. Kvit, W. Zhou, X. Wang, Z. Yu, Z. Ma, and X. Li, "Germanium photodiodes on pyramidal textured surface by Metal-Assisted Chemical Etching," CLEO, San Jose, CA, May 2019.
17. H-C Huang, M. Kim, K. Chabak, and X. Li, "Metal-assisted chemical Etching of β -Ga₂O₃ and Textured MSM Photodetectors with Enhanced Responsivity," IEEE RAPID, Florida (2018).
18. H.-C. Huang, M. Kim, K. Chabak, and X. Li, "Metal-assisted chemical etch of β -Ga₂O₃ and applications," 3rd US Workshop on Gallium Oxide (GOX 2018), Columbus, Ohio, July 2018.
19. M. Kim, H.-C. Huang, K. Chabak, and X. Li, "Metal-assisted chemical etch of β -Ga₂O₃: towards the formation of smooth, vertical, damage-free, and high aspect ratio fin array," Compound Semiconductor Week 2018, Boston, USA (2018).
20. Olivia V. Cangellaris, Elise A. Corbin, Paul Froeter, Xiuling Li, Martha U. Gillette, "Tuning Topography of Self-Rolled-Up 3D Microtube Arrays to Improve Alignment of Hippocampal Neurons," Biomedical Engineering Society (BMES) Annual Meeting, Phoenix, October 2017.
21. M Kim, S Yi, JD Kim, SC Liu, W Zhou, Z Yu, and X Li, "Nano-indented Ge surfaces by metal-assisted chemical etching (MacEtch) and its application for optoelectronic devices," Device Research Conference (DRC), 2017 75th Annual, 1-2, Norte Dame, 2017.
22. W. Huang, J. Zhou, P. Froeter, K. Walsh, S. Liu, J. Michaels, M. Li, S. Gong, and X. Li, "CMOS-Compatible On-Chip Self-Rolled-Up Inductors for RF/mm-Wave Applications," International Microwave Symposium, 1645-1648, Hawaii, 6/4/2017.
23. K. Jung, CY Liu, J.D. Kim, W. Choi, W. Zhou, H.-C. Kuo, and X. 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, Hawaii, 2016.
24. 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), Tsukuba, 2016.
25. 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.
26. 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.

27. 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.
28. W. Huang, M. Li, S. Gong, and X. Li, "Self-rolled-up Tube Transformers: Extreme Miniaturization and Performance Enhancement," Device Research Conference, p. 223-224, Columbus Ohio, June 2015.
29. M.U. Gillette, A. Jain, O.V. Cangelaris, S.C. Liu, R. Iyer, L.J. Millet, T. Kim, P. Froeter, M.K. Lee, A. Abdeen, K. Kilian, G. Popescu, H. Kong, and X. Li, "Enabling Technologies for Neurons: New Approaches for Axonal and Dendritic Growth and Guidance," Biomedical Engineering Society Meeting, 2015.
30. W. Huang, M. Li, S. Gong, and X. Li, "Extremely Miniaturized and High Performance RFIC Transformer by Self-rolled-up Membrane Nanotechnology," InterPACKICNMM, San Francisco, July 2015.
31. X. Yu, E. Arbabi, X. Li, L. Goddard, and X. Chen, "Demonstration of the first monolithically integrated self-rolled-up tube based vertical photonic coupler," CLEO 2015, DOI: 10.1364/CLEO_SI.2015.SF1H.8
32. Jeongdong Kim, Xiaogang Chen, Xiuling Li, and James Coleman, "Photocurrent Density Enhancement of a III-V Inverse Quantum Dot Intermediate Band Gap Photovoltaic Device," CLEO 2015. DOI: 10.1364/CLEO_AT.2015.JTu5A.65
33. K. Chabak, X. Miao, C. Zhang, D. E. Walker Jr., and X. Li, "RF Performance of 3D III-V Nanowire T-Gate HEMTs Grown by VLS Method," Device Research Conference (DRC), 72nd Annual, pages 211-212, June 2014.
34. W. Huang, X. Yu, T. Comberiate, C.-W. Qiu, J. E. Schutt-Aine, and X. Li, "Miniaturized on-chip passive devices based on self-rolled-up SiN_x nanomembrane inductive tube," Device Research Conference (DRC), 71st Annual, pages 227-228, June 2013.
35. C. Zhang, R. Dowdy, and X. Li, "High voltage gain MESFET amplifier using self-aligned MOCVD grown planar GaAs nanowires," Device Research Conference (DRC), 71nd Annual, pages 63-64, June 2013.
36. A.D.K. Finck, D.J. Van Harlingen, P.K. Mohseni, K. Jung, and X. Li, "Hints of hybridizing Majorana fermions in a nanowire coupled to superconducting leads," APS march Meeting, v. 58 (1), 2013.
37. H. Hu, P. K. Mohseni, X. Li, M. A. Shannon, and W. P. King, "Nanoelectromechanical systems fabricated using tip-based nanofabrication," Proceedings of SPIE, Baltimore, Volume 8725, Pages 8725-23, 2013.
38. X. Li, "Twinning Superlattice in VLS Grown Planar GaAs Nanowires Induced by Impurity Doping," IEEE Photonics Conference, San Francisco, Sept. 2012.
39. P. K. Mohseni, J. C. Shin, and X. Li, "Wafer-Scale InGaAs Nanowire Epitaxy on Si and Graphene Substrates," International Symposium on Compound Semiconductors, Santa Barbara, CA, Aug. 2012.
40. P. K. Mohseni, K. Balasundaram, M. DeJarld, J. C. Shin, D. Chanda, J. A. Rogers, and X. Li, "Anisotropic Metal-Assisted-Chemical-Etching for III-V Compound Semiconductors," International Symposium on Compound Semiconductors, Santa Barbara, CA, Aug. 2012.
41. X. Miao, C. Zhang, and X. Li, "Short-channel enhancement-mode planar GaAs nanowire HEMTs through a bottom-up method," Device Research Conference (DRC), 2012 70th Annual, 18-20 June 2012.
42. J. C. Shin, P. K. Mohseni, S. Tomasulo, K. Montgomery, M. Lee, and X. Li, "Heterogeneous Integration of III-V on Si: overcoming the lattice-mismatch barrier via the 1D route," CLEO, San Jose, May 2012.

43. R. Dowdy, K. Attenkofer, H. Frisch, S.W. Lee, S. Ross, and X. Li, "Development of Ultra-Thin GaAs Photocathodes," TIPP 2011, Physics Procedia, 2012.
44. X. Miao and X. Li, "Planar VLS Grown GaAs Nanowire Array Based HEMTs," International Semiconductor Device Research Symposium (ISDRS), Maryland, Dec. 2011
45. W. Chern, K. J. Yu, D. Chanda, J. C. Shin, J. A. Rogers, and X. Li, "Ordered silicon nanowire array based solar cells produced by metal assisted chemical etching," 2010 23rd Annual Meeting of the IEEE Photonics Society, Denver, CO, 2010, pp. 718-719.
46. W. Chern, K. Hsu, I. Chun, B. Azeredo, N. Fang, P. Ferreira, and X. Li, "Non-lithographic Patterning and Metal-Assisted Chemical Etching for Manufacturing of Tunable Light-Emitting Silicon Nanowire Arrays," 2010 Conference on Lasers and Electro-Optics (CLEO), San Jose, CA, 2010.
47. I. S. Chun, K. P. Bassett, A. Challa, X. Miao, M. Saarinen, and X. Li, "Strain-induced Self-rolling III-V Tubular nanostructures: Formation Process and Photonic Applications," Proc. of SPIE, 7608, 760810, (2010); invited paper.
48. N. L. Dias, A. Garg, J. D. Young, U. Reddy, V. B. Verma, K. Bassett, X. Li, and J. J. Coleman, "Reduced scattering rate in nanopore structures," 2010 23rd Annual Meeting of the IEEE Photonics Society, Denver, CO, 2010, pp. 84-85.
49. S. A. Fortuna, R. Dowdy, and X. Li, "Epitaxial III-V planar nanowires: Self-aligned, high-mobility and transfer-printable," Conference Proceedings, International Conference on Indium Phosphide and Related Materials, Japan, 2010, pp. 88-91.
50. V. B. Verma, N. L. Dias, U. Reddy, K. P. Bassett, X. Li, and J. J. Coleman, "Bandstructure engineering with a two-dimensional patterned quantum dot lattice," Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference: 2010 Laser Science to Photonic Applications, CLEO/QELS 2010, San Jose, CA, 2010.
51. V. B. Verma, U. Reddy, N. L. Dias, K. P. Bassett, X. Li, and J. J. Coleman, "Patterned quantum dot molecule laser fabricated by electron beam lithography and wet chemical etching," 2010 IEEE Photonics Society Winter Topicals Meeting Series, WTM 2010, Majorca, Spain, 2010, pp. 143-144.
52. S. A. Fortuna, I. S. Chun, J. Wen, R. Dowdy, and X. Li, "GaAs 110 nanowires: Planar, self-aligned, twin-free, high-mobility and transfer-printable," The 14th OptoElectronics and Communications Conference (OECC 2009), Hong Kong, China, 2009.
53. S. A. Fortuna and X. Li, "GaAs FET with a high mobility self-assembled planar nanowire channel on a (100) substrate," Device Research Conference, University Park, PA, 2009, pp. 19-20.
54. I. S. Chun, K. Bassett, A. Challa, and X. Li, "Ultra-thin-walled III-arsenide microtubes with embedded QW light emitters: room temperature PL characteristics," CLEO, late news paper, Baltimore, Maryland, 2009, p. 2.
55. I. S. Chun, E. K. Chow, and X. Li, "3D Nanoscale pattern formation in porous silicon," CLEO, San Jose, CA, United states, 2008, p. 2.
56. S. A. Fortuna, J. Wen, and X. Li, "MOCVD grown III-V nanowires: In-plane, self-aligned and transfer-printable," IEEE LEOS Annual Meeting, Newport Beach, CA, United states, 2008, pp. 429-430.
57. S. A. Fortuna, X. Zeng, and X. Li, "Self-aligned planar GaAs nanowires grown by MOCVD on GaAs (100) substrates," CLEO, San Jose, CA, United states, 2008.
58. I.S. Chun, V.B. Verma, and X. Li, "Engineered large area fabrication of ordered InGaAs-GaAs nanotube arrays," *Mater. Res. Soc. Symp. Proc.* **1057**, II05-40, 2008.
59. S. Kim, X. Li, J. J. Coleman, R. Zhang, D. M. Hansen, T. F. Kuech, and S. G. Bishop, "Photoluminescence and photoluminescence excitation spectroscopy of in situ Er-doped and Er-implanted GaN films grown by hydride vapor phase epitaxy," *MRS Internet Journal of Nitride Semiconductor Research*, vol. 4S1, 1999.

60. S. Kim, X. Li, J. J. Coleman, R. Zhang, D. M. Hansen, T. F. Kuech, and S. G. Bishop, "Photoluminescence and photoluminescence excitation spectroscopy of in situ Er-doped and Er-implanted GaN films grown by hydride vapor phase epitaxy," Warrendale, PA, USA, 1999, pp. 11-4.
61. X. Li, S. G. Bishop, and J. J. Coleman, "GaN: from selective area to epitaxial lateral overgrowth," Boston, MA, USA, 1999, pp. G4.8-G4.8.
62. X. Li, S. G. Bishop, and J. J. Coleman, "GaN: from selective area to epitaxial lateral overgrowth," MRS Internet Journal of Nitride Semiconductor Research, vol. 4S1, 1999.
63. J. J. Coleman and T. S. Yeoh, "Metalorganic vapor phase epitaxy of quantum dots," Piscataway, NJ, USA, 2001, pp. 560-1.
64. S. Kim, S. J. Rhee, X. Li, J. J. Coleman, and S. G. Bishop, "Site-selective photoluminescence spectroscopy of Er-implanted wurtzite GaN under various annealing conditions," Warrendale, PA, USA, 1998, pp. 381-6.
65. S. Kim, S. J. Rhee, X. Li, J. J. Coleman, S. G. Bishop, and P. B. Klein, "Trap-mediated, site-selective excitation of photoluminescence from multiple Er³⁺ sites in Er-implanted GaN," New York, NY, USA, 1998, pp. 203-6.
66. S. J. Rhee, S. Kim, X. Li, J. J. Coleman, and S. G. Bishop, "Photoluminescence quenching spectroscopy of trap-mediated Er³⁺ excitation mechanisms in Er-implanted GaN," Warrendale, PA, USA, 1998, pp. 667-72.
67. "Trap-mediated, site-selective excitation of photoluminescence from multiple Er³⁺ sites in Er-implanted GaN," Kim, S.J. Rhee, X. Li, J.J. Coleman, and S.G. Bishop, *Inst. Phys. Conf. Ser.* 156, 203 (1998).
68. S. Kim, S. J. Rhee, D. A. Turnbull, X. Li, J. J. Coleman, and S. G. Bishop, "Site-selective photoluminescence excitation and photoluminescence spectroscopy of Er-implanted wurtzite GaN," San Francisco, CA, USA, 1997, pp. 131-136.
69. S. Kim, S. J. Rhee, D. A. Turnbull, E. E. Reuter, X. Li, J. J. Coleman, and S. G. Bishop, "Characterization of As-grown and ion-implanted GaN by photoluminescence and photoluminescence excitation spectroscopy," Montreal, Can, 1997, pp. 52-53.
70. X. Li, S. Kim, S. G. Bishop, and J. J. Coleman, "On the incorporation of arsenic (As) in GaN films by conventional MOCVD," Montreal, Can, 1997, p. 8.
71. S. J. Rhee, S. Kim, X. Li, J. J. Coleman, and S. G. Bishop, "Photoluminescence quenching spectroscopy of trap-mediated Er³⁺ excitation mechanisms in Er-implanted GaN," Boston, MA, USA, 1997, pp. 667-672.
72. S. Kim, S. J. Rhee, D. A. Turnbull, X. Li, J. J. Coleman, and S. G. Bishop, "Site-selective photoluminescence excitation and photoluminescence spectroscopy of Er-implanted wurtzite GaN," *Mat. Res. Soc. Symp. Proc.* 468, 131 (1997).
73. X. Li, A.M. Jones, S.D. Roh, D.A. Turnbull, E.E. Reuter, S.Q. Gu, S.G. Bishop and J.J. Coleman, "Correlation of surface morphology and optical properties of GaN by conventional and selective-area MOCVD," *Mat. Res. Soc. Symp. Proc.* 395, 943 (1996).
74. X. Li, A. M. Jones, S. D. Roh, D. A. Turnbull, E. E. Reuter, S. Q. Gu, S. G. Bishop, and J. J. Coleman, "Correlation of surface morphology and optical properties of GaN by conventional and selective-area MOCVD," Boston, MA, USA, 1996, pp. 943-948.

PRESENTATIONS

Invited Conference talks, seminars, and short courses (> 150)

1. "UWBG materials and processing for harsh environment," invited speaker, Photonics Workshop, University of Texas at Arlington, Feb. 2024.
2. "Surface Proximal Color Centers in SiC: deterministic creation and emission enhancement," SPIE Photonic West, San Francisco, CA, invited speaker, Jan. 2024.
3. "S-RuM technology for extreme miniaturization and integration of passive electronics and microfluidics," IEEE MEMS 2024 Conference, Austin, TX, invited speaker, Jan. 2024.
4. "Understanding and Enhancing the Color Center Emission in hBN Coupled to Photonic Circuits," Materials Research Society Meeting, Boston, MA, Invited Speaker, Nov. 2023.
5. "S-RuM Technology for Miniaturization and Integration of Electronics and Microfluidics," International Conference on Frontier Materials, Qingdao, China, Plenary Lecturer, Oct. 2023.
6. "MacEtch: plasma-free ultra-high aspect ratio anisotropic etching," Tokyo Electron Ltd. America, Invited Seminar (Virtual), Oct. 2023.
7. "Surface Proximal Color Centers in SiC: Deterministic Creation and Emission Enhancement," International NanoOptoelectronics Workshop (iNOW), Wurzburg, Germany, invited speaker, July 2023.
8. "Pushing the Boundaries of Nanofabrication and Semiconductor Technology via Innovative Platforms," Semiconductor Seminar Series, NIST, invited speaker, May 2023.
9. "Pushing the Boundaries of Nanofabrication and Semiconductor Technology via Innovative Platforms," Department of Electrical and Computer Engineering and EDS Student Chapter, Univ. of California, Riverside, invited seminar speaker, May 2023.
10. "Avoiding Plasma Damage: MacEtch Enabled β -Ga₂O₃ FinFETs for On-Resistance Reduction and Hysteresis Elimination," 7th IEEE Electron Devices Technology and Manufacturing (EDTM) Conference, Seoul, Korea, Invited speaker, March 2023.
11. "MacEtch of wide and ultrawide bandgap semiconductors," Workshop on Compound Semiconductor Materials and Devices (WOCSEMMAD), invited speaker, San Antonio, TX, Feb. 2023.
12. "Transform electronics and photonics by novel semiconductor epitaxy and nanofabrication," KAUST Semiconductors Initiative - Distinguished Seminar Series, invited speaker, Saudi Arabia, Feb. 6th, 2023.
13. "Straining van der Waals Sheets via the Self-Rolled-up Membrane Platform," Materials Research Society, Fall Meeting, invited speaker for Symposium NM07.04, Boston, Nov. 2022.
14. "Semiconductor Nanotechnology: There is Plenty of Room All-Around," invited Physics Colloquium speaker (virtual), University of Texas, Rio Grande Valley, Oct. 2022.
15. "High Aspect Ratio Ga₂O₃-based Homo and Heterostructures by Plasma-free Metal-assisted Chemical Etching," 5th US Gallium Oxide Workshop (GOX), Washington D.C., invited speaker, Aug. 2022.
16. "Plasma-Free Highly-Anisotropic Etching of Compound Semiconductors for Optoelectronic Applications," IEEE Summer Topicals Meeting Series, invited speaker (delivered virtually), Los Cabos, Mexico, July 2022.
17. "Semiconductor Nanotechnology: There is Plenty of Room All-Around," IEEE Nano, Plenary talk as the awardee of IEEE Pioneer Award in Nanotechnology, Palma de Mallorca, Spain, July 2022.
18. " β -Ga₂O₃ FinFETs by MacEtch: high aspect ratio and ultra-low hysteresis," Device Research Conference (DRC), invited speaker, Columbus, Ohio, June 2022.
19. "MacEtch Enabled Wide and Ultrawide Bandgap 3D Semiconductor Structures and Device Applications," Compound Semiconductor Week, invited speaker, Ann Harbor, Michigan, May - June 2022.

20. "Heterogeneous selective area epitaxy of III-V nanowires on Si by MOCVD," 27th AACGE Western Section Conference on Crystal Growth and Epitaxy, invited speaker, Stanford Sierra Camp, CA, June 2022.
21. "MacEtch of (U)WBG Semiconductors: progress report on III-N and GOX FinFETs," Workshop on Compound Semiconductor Materials and Devices (WOCSEMMAD), Destin, FL, Feb. 2022.
22. "Wide bandgap Semiconductor Nanostructures by Photo-assisted Inverse-MacEtch," Pacificchem 2021 Congress, Symposium: Interfaces of low dimensional Inorganic nanomaterials for energy- and bio-applications. Invited speaker. Virtual. Dec. 2021.
23. "Transform electronics and photonics by novel epitaxy and nanofabrication," Distinguished Seminar, Materials Science and Engineering Program, Center for Integrated Bio and Nano Systems, and The Texas Center for Superconductivity, University of Houston, Nov. 2021.
24. "Transform electronics and photonics by novel growth and nanofabrication," Amy Research Lab, invited speaker, virtual, Nov. 2021.
25. "Plasma-free Anisotropic etching of SiC, GaN, and β -Ga₂O₃," 2021 NASA Glenn Silicon Carbide (SiC) Materials & Devices Workshop, virtual, Sept. 2021.
26. "Transform electronics, photonics, and biomedical research by nanofabrication," virtual guest lecture, Nazarbayev University, Kazakhstan, April 2021.
27. "Extreme Miniaturization of Passive Electronic Components by Strain-Induced Self-Rolled-Up Membrane Nanotechnology," keynote speaker, MRS, virtual presentation, Nov. 2020.
28. "MacEtch of β -Ga₂O₃, SiC and GaN—Plasma-Damage-Free and High-Aspect-Ratio," invited speaker, MRS, virtual presentation, Nov. 2020.
29. "Self-rolled-up membrane nanotechnology for passive electronic component miniaturization and integration," keynote speaker, 15th IEEE Nanotechnology Materials and Devices Conference (NMDC), virtual presentation, Oct. 2020.
30. "Transform electronics, photonics, and biomedical research by nanofabrication," Global Online Science Talk, iCANX, virtual presentation, May 2020.
31. " β -Ga₂O₃: MacEtch, Passivation, and Ultra-wide Bandgap Photonic Devices," invited speaker, CLEO, virtual presentation, May 2020.
32. "MacEtch of Wide Bandgap Semiconductors: Plasma Free and High Aspect Ratio," invited speaker, Workshop on Compound Semiconductor Materials and Devices (WOCSEMMAD), Palms Springs, CA, Feb. 2020.
33. "High Aspect Ratio β -Ga₂O₃ Nanostructures: MacEtch, Passivation, and Devices," keynote speaker, International Conference on Nanoscience and Nanotechnology (ICONN), Brisbane, Australia, Feb. 2020.
34. "Nanostructured Semiconductor Materials & Devices: Innovation for Applications in Electronics, Photonics, and Quantum Technology," invited seminar, Taiwan Semiconductor Manufacturing Company (TSMC), Hsinchu, Taiwan, Dec. 2019.
35. "Nanostructured Semiconductor Materials & Devices: Innovation for Applications in Electronics, Photonics, and Quantum Technology," invited seminar, Taiwan National University, Taipei, Taiwan, Dec. 2019.
36. "Not Your Ordinary Etching: Metal-Assisted Chemical Etch (MacEtch) for III-V and Wide Bandgap Semiconductors," invited speaker, 236th Electrochemical Society (ECS) Meeting, Atlanta, Oct. 2019.
37. "Nanostructured Semiconductor Materials and Devices: Innovation for Applications in Electronics, Photonics, and Quantum Technology," Univ. Of Buffalo, invited Seminar Speaker, Sept. 2019.

38. "Not Your Ordinary Etching: MacEtch of Si, Ge, III-V, and Wide Bandgap Semiconductors," Keynote speaker, The 19th IEEE International Conference on Nanotechnology, Macau, China, July 2019.
39. "MOCVD Selective Area Epitaxy of III-V Nanowire Arrays for Optoelectronic Applications," invited speaker, Tsinghua International Nano-Optoelectronics Workshop (iNOW), Guangzhou and Shenzhen, China, July 2019.
40. "Semiconductor Nanowires: Past, Present, and Speculations about future directions," invited speaker, 13th International NanoScience Student Conference (INASCON), Tsinghua Univ. Beijing, China, July 2019.
41. "Extreme Miniaturization of Passive Electronic Components by Self-Rolled-up Membrane (S-RuM) Nanotechnology," Annual ShanghaiTech Symposium on Information and Technology, Plenary talk, Shanghai, China, June 2019.
42. "Nanostructured Semiconductor Materials & Devices: Innovation for Applications in Electronics, Photonics, and Quantum Technology," Univ. Texas, Austin, invited seminar speaker, June 2019.
43. "Not Your Ordinary Etching: Metal-assisted chemical etching of Si, Ge, III-V and Wide Bandgap Semiconductors," invited speaker, Zhejiang University, China, invited seminar, March 2019.
44. ">50:1 Aspect Ratio β -Ga₂O₃ Fin Array by MacEtch and Towards FinFETs," invited speaker, Workshop on Compound Semiconductor Materials and Devices (WOCSEMMAD), Jacksonville, FL, invited talk, Feb. 2019.
45. "Not Your Ordinary Etching: Metal-assisted chemical etching for III-V and Wide Bandgap Semiconductors," Silicon Carbide (SiC) Materials & Devices Workshop, AFRL, invited speaker, Dec. 2018.
46. "Enabling Device Miniaturization and Integration by Self-Rolled-up Membrane (S-RuM) Nanotechnology," Plenary speaker, International Nanomembrane Origami Workshop, Fudan Univ. Shanghai, China, Nov. 2018.
47. "Semiconductor Nanomaterials and Devices: Innovation for Electronic, Photonic, and Biomedical Applications," Univ. of Washington, Seattle, Department of Materials Science, invited seminar speaker, Oct. 2018.
48. "Nanostructured Semiconductor Materials and Devices," Pacific Northwest National Laboratory, invited speaker, Oct. 2018.
49. "Not your ordinary etching: MacEtch for III-V Compound Semiconductors," IEEE Research and Applications of Photonics in Defense Conference (RAPID), Florida, invited speaker, Aug. 2018.
50. "S-RuM nanotechnology: a monolithic 3D MEMS Platform for Extreme Passive Electronics Miniaturization, IOT Sensing, and Biomedical Applications," Jiangsu Institute of Technology, Nanjing, China, invited speaker, Aug. 2018.
51. "Surface Engineering via Inverse-MacEtch for photodetectors: from Ge to Ga₂O₃," International Nano-Optoelectronics Workshop (iNOW), Berkeley, CA, invited speaker, July 2018.
52. "Semiconductor Materials & Devices: Innovation for Electronic, Photonic, and Biomedical Applications," IBM, Albany, NY, invited speaker, July 2018.
53. "Semiconductor Materials & Devices: Innovation for Electronic, Photonic, and Biomedical Applications," Pacific Northwest National Laboratory, invited speaker, June 2018.
54. "Semiconductor Nanomaterials and Devices: Innovation for Electronic, Photonic, and Biomedical Applications," Univ. of California, Los Angeles, Department of Electrical and Computer Engineering, invited seminar speaker, May 7th, 2018.
55. "Novel Processing Technologies for 3D Architectures," Micron Inc., Boise, Idaho, invited talk, May 3rd, 2018.
56. "Continuously Tunable Uniaxial Strain Engineering in Graphene via Self-Rolled-Up Membrane Technology," MRS, Symposium NM11, Phoenix, AZ, invited talk, April 2018.

57. "Semiconductor Nanomaterials and Devices: Innovation for Electronic, Photonic, and Biomedical Applications," Zhejiang University, China, invited seminar speaker, March 2018.
58. "Semiconductor Nanomaterials and Devices: Innovation for Electronic, Photonic, and Biomedical Applications," Univ. of California, San Diego, Nano Engineering department, invited seminar speaker, Feb. 2018.
59. "MacEtch Enabled New Device Concepts from InGaAs to Ga₂O₃," WOCSEMMAD, San Diego, CA, invited talk, Feb. 2018.
60. "Semiconductor Nanomaterials and Devices: Innovation for Electronic, Photonic, and Biomedical Applications," Univ. of Texas, Austin, MRC Distinguished Lecture Series at the Microelectronics Research Center, Feb. 2018.
61. "Not Your Ordinary Etching: MacEtch for Semiconductor Nanostructures and Devices," IEEE Photonics Conference, Florida, Oct. 2017, short course.
62. "III-V Nanowire Arrays: Selective Lateral and Vertical Epitaxy and Devices," IUMRS-ICAM, Kyoto, Japan, Aug. 2017, invited talk.
63. "Metal-assisted chemical Etch (MacEtch) for High Aspect Ratio Semiconductor Nanostructures and Device Applications," International Nano-Optoelectronics Workshop (iNOW), Tianjin/Qian'an, China, Aug. 2017, invited talk.
64. "Publishing in Applied Physics Letters and in General," Fudan Univ. and SIMIT, China, June 2017, invited lectures.
65. "Semiconductor Nanomaterials and Devices Innovation for Electronic and Photonic Applications," Shanghai Institute of Technical Physics of the Chinese Academy of Sciences, China, June 2017, invited seminar.
66. "In-plane Nanowire Transistors," Compound Semiconductor Week, Berlin, May 2017, invited talk.
67. "Semiconductor Nanomaterials and Devices Innovation for Electronic and Photonic Applications," Ecole Polytechnique de Montreal, April 2017, invited seminar speaker.
68. "Extreme Miniaturization of Passive Electronic Devices by Self-Rolled-up Membrane Nanotechnology," China Semiconductor Technology International Conference (CSTIC 2017), Shanghai, China, Mar. 2017, invited speaker.
69. "Semiconductor Nanomaterials and Devices Innovation for Electronic and Photonic Applications," Stanford University, Feb. 2017, invited seminar speaker.
70. "Semiconductor Nanomaterials and Devices: Innovation for Electronic, Photonic, and Biomedical Applications," Vanderbilt University, Feb. 2017, invited seminar speaker.
71. "Semiconductor Processing: Wet Etch, Dry Etch, and now MacEtch," Conference on Optoelectronic and Microelectronic Materials and Devices (COMMAD), Sydney, Australia, Dec. 2016, invited speaker.
72. "Miniaturization of Passive Electronic Devices by Self-Rolled-Up Membrane Nanotechnology," Materials Research Society (MRS) Fall Meeting, Boston, Dec. 2016, invited speaker.
73. "Heterogeneous Integration III-V Nanowires on Si and van der Waals Substrates," Materials Research Society (MRS) Fall Meeting, Boston, Dec. 2016, invited speaker.
74. "III-V Nanowires and Nano fins: Growth, Etching, and Devices," International Conference on Solid State Devices and Materials (SSDM), Tsukuba, Japan, Sept. 2016, invited speaker.
75. "Growth and hierarchical assembly of nanomaterials," CIMTEC 2016 - 7th Forum on New Materials, Perugia, Italy, June 2016, invited speaker.
76. "Nanowire and Nanomembrane Electronics: performance and scalability," Naval Research Laboratory, May 2016, invited seminar speaker.
77. "Nanowire and nanomembrane electronics: performance and scalability," Vanderbilt University, Mar. 2016, invited speaker of VINCE Colloquium.

78. "Selective Lateral Epitaxy of III-V Nanowires for Scalable and High Performance Electronics," PacificChem, Hawaii, Dec. 2015, invited speaker.
79. "III-V Nanowire-based 3D Electronics Enabled by Selective Lateral Epitaxy," Mater. Research Soc. Boston, Nov. 2015, invited speaker.
80. "Nanowire and Nanomembrane Electronics," IEEE PKU Chapter, Beijing, China, Nov. 2015, IEEENano distinguished lecture.
81. "III-V nanowire growth and high speed electronics," NTT International Symposium on Nanoscale Transport and Technology, Atsugi, Japan, Nov. 2015, invited speaker.
82. "Self-rolled-up membrane for passive electronics," AVS Topical, Shanghai, Oct. 2015, keynote speaker.
83. "Planar III-V nanowire for high speed electronics," AVS Topical, Shanghai, Oct. 2015, invited speaker.
84. "III-V nanowires and 2D van der Waals sheets: interfaces and devices," SPIE, San Diego, Aug. 2015, invited speaker.
85. "Nanowire and Nanomembrane Electronics: Performance and Scalability," Airforce Research Laboratory, Dayton, Ohio, June 2015, invited speaker.
86. "Metal-Assisted Chemical Etching (MacEtch): Wet etch, Dry etch, and now MacEtch," Symposium OO, Materials Research Society Meeting, San Francisco, April, 2015, tutorial speaker.
87. "Microtube arrays create cozy space for neurons to grow ... fast," Army Research Office, Workshop on Compound Semiconductors for Biological Applications, Mar. 2015, invited speaker.
88. "Semiconductor Nanoelectronic and Nanophotonic Devices: performance and scalability," Arizona State University, Mar. 2015, invited seminar speaker.
89. "Semiconductor Nanoelectronic and Nanophotonic Devices: performance and scalability," Naval Research Laboratory, Feb. 2015, invited colloquium speaker.
90. "Semiconductor nanostructures for solar water splitting." Hydrogen Production & Fuel Cells Division Symposium, I2CNER, Kyushu, Japan, Feb. 5th, 2015.
91. "Semiconductor Nanoelectronic and Nanophotonic Devices: performance and scalability," Carnegie Mellon, Nov. 2014, invited seminar.
92. "3D hierarchical architectures based on self-rolled-up membranes," SES Annual Technical Meeting, Eringen Medal Symposium, Purdue Univ., Oct. 2014, Keynote speaker.
93. "RF Performance of 3D III-V Nanowire T-Gate HEMTs Grown by VLS Method," Nanowire Growth Workshop, Eindhoven, Netherlands, Aug. 2014, invited speaker.
94. "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.
95. "Metal-Assisted Chemical Etching (MacEtch): Wet etch, Dry etch, and now MacEtch," ScanDisk, July 2014, invited talk.
96. "Metal-Assisted Chemical Etching (MacEtch): Wet etch, Dry etch, and now MacEtch," Lam Research, June 2014, invited talk.
97. "Au-Free III-V Nanowire Epitaxy Capabilities and Related Devices," Lam Research, June 2014, invited talk.
98. "Semiconductor Nanoelectronic and Nanophotonic Devices: performance and scalability," Norwegian University of Science and Technology, May 2014, invited seminar.
99. "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.

100. "Nanowire Solar Cells on Graphene by Direct Epitaxy," University of Puerto Rico, Rio Piedras, March 2014, invited seminar.
101. "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.
102. "III-V nanowire arrays for solar hydrogen production," International Conference on Hydrogen Generation, Kyushu, Japan, Jan. 2014, invited talk.
103. "Nanowire Electronics," ISDRS, Washington D.C., Dec. 2013, invited talk.
104. "Nanowire Photovoltaics," Asia Communications & Photonics Conference (ACP), Beijing, Nov. 2013, invited talk.
105. "Semiconductor Nanoelectronic and Nanophotonic Devices: Performance and Scalability," IEEE IEEE Southeastern Michigan Chapter IV and University of Michigan, Nov. 2013, invited lecture.
106. "Van der Waals nanoepitaxy: mechanism and applications," SPIE Optics and Photonics (Nano Epitaxy), San Diego, Aug. 2013, invited talk.
107. "Semiconductor nanowire array based electronic and photovoltaic devices: formation, performance, and scalability," IEEE Nano, Beijing, Aug. 2013, invited tutorial.
108. "Self-rolled-up micro and nanotubes for photonics and passive electronics," IEEE Nano, Beijing, Aug. 2013, invited tutorial.
109. "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.
110. "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.
111. "Semiconductor Nanotechnology: controllability and scalability," University of Texas, Arlington, April 2013, invited speaker.
112. "Semiconductor Nanoelectronic and Nanophotonic Devices: controllability and scalability," Case Western Research University, March 2013, invited speaker.
113. "Semiconductor Nanoelectronic and Nanophotonic Devices: towards controllability and manufacturability," International Conference on Nano Science and Nano Technology, Gwangju, Korea, Nov. 2012, plenary speaker.
114. "Nanowire based solar cells," SPIE/COS Photonics Asia, Beijing, Nov. 2012, invited talk.
115. "Semiconductor Nanoelectronic and Nanophotonic Devices: towards controllability and manufacturability," Integrative NanoScience Institute, Florida State University, Oct. 2012, invited speaker.
116. "Semiconductor Nanoelectronic and Nanophotonic Devices: performance, controllability and manufacturability," Solid State Technology and Devices seminar series, University of California, Berkeley, Oct. 2012, invited speaker.
117. "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.
118. "III-V Nanowires on Si for Monolithic Tandem Solar Cells," Photonics North Conference, Montreal, Canada, June 2012; invited speaker.
119. "Array Based Nanotechnology Inspired Bio and Energy Applications," NanoCEMMS industry advisory board meeting, UIUC, March 2012; invited speaker.
120. "Rolled-up Tube based Nanophotonics," American Physics Society (APS) March Meeting, Boston, March 2012; invited speaker.

121. "Semiconductor Nanoelectronic and Nanophotonic Devices: towards controllability and manufacturability," Princeton University, Dec. 7th, 2011, invited seminar speaker.
122. "Semiconductor Nanoelectronic and Nanophotonic Devices: towards Controllability and Manufacturability," Lehigh University, Sept. 2nd, 2011, invited seminar speaker.
123. "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.
124. "III-V Nanowire FETs," DARPA COSMOS Program PI Meeting, June 2011, Long Beach, CA, invited guest speaker.
125. "III-V Nanoelectronic and Nanophotonic Devices: Towards Controllability and Manufacturability," Nano Photonics and Electronics Industry Affiliates Program, Illinois, May 2011, invited talk.
126. "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.
127. "III-V Nanoelectronic and Nanophotonic Devices: towards controllability and manufacturability" Applied Physics and Electrical Engineering Joint Colloquium, Harvard University, February 2011, invited speaker.
128. "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.
129. "Towards High Performance III-V Semiconductor Nanowire-FETs and Nano-lasers," University of Southern California, Nov. 2010, invited seminar speaker.
130. "Ordered Silicon Nanowire Array Based Solar Cells Produced by Metal Assisted Chemical Etching," Photonic Society annual meeting, Denver, Nov. 2010.
131. "Towards High Performance III-V Semiconductor Nanowire-FETs and Nano-lasers," Rensselaer Polytechnic Institute, Oct. 2010, invited seminar speaker.
132. "Towards High Performance III-V Semiconductor Nanowire-FETs and Nano-lasers," Ohio State University, Oct 2010, invited seminar speaker.
133. "Microtube resonators: strain-induced and large area assembled," NSF-MEXT (Japan) Young Researchers Exchange Program, Oct. 2010, UIUC, invited talk.
134. "III-V Planar Nanowire FETs and Rolled-up Tube Based Nanophotonics," Nano-EP seminar series, Sept. 2010, UIUC, invited talk.
135. "Towards High Performance III-V Semiconductor Nanowire-FETs and Nano-lasers," Beijing Institute of Technology, July 2010, invited talk.
136. "Towards High Performance III-V Semiconductor Nanowire-FETs and Nano-lasers," Tsing Hua University, China, July 2010, invited talk.
137. "Towards High Performance III-V Semiconductor Nanowire-FETs and Nano-lasers," Stanford University, May 2010, invited talk.
138. "Towards High Performance III-V Semiconductor Nanowire-FETs and Nano-lasers," Solid State Seminar (S3) Series, April 2010, Norte Dame, invited speaker.
139. "Bottom-up and Manufacturable: New Paradigms in III-V Semiconductor Nanostructures and Device Prospects," NSF Nano-CEMMS Annual Industry Meeting, March 2010, invited talk.
140. "Strain-induced Self-rolling III-V Tubular nanostructure: Formation process and Photonic Application," SPIE Photonic West, San Francisco, Jan 2010, invited talk.
141. "Compound semiconductor 1D nanostructures and Device Prospects," Purdue University, Birk Nanotechnology Center, November 2009, invited talk.

142. "Compound Semiconductor Nanotubes and Nanowires for photonic and electronic Applications," Argonne National Laboratory, Aug. 2009, invited talk.
143. "Compound Semiconductor Nanotubes and Nanowires for photonic and electronic Applications," Department of Microelectronics, Peking University, China, July 2009, invited talk.
144. "Compound Semiconductor Nanotubes and Nanowires for Nanophotonic and Nanoelectronic Applications," Institute for Advanced Materials, Devices, and Nanotechnology (IAMDN), Rutgers University, April 2009, invited talk.
145. "Compound Semiconductor Nanotubes and Nanowires for photonic and electronic Applications," 1st NSF-sponsored US-Argentina Workshop on Nanomaterials, Bariloche, Argentina, March 2009, invited talk.
146. "3D IC and Semiconductor Nanotechnology," IBM, February 2009, invited talk.
147. "Compound semiconductor nanotubes and nanowires," University of California, Los Angeles, February 2009, invited talk.
148. "Compound semiconductor nanotubes and nanowires," Texas Tech University, February 2009, invited talk.
149. "Nanotechnology: compound semiconductor nanotubes and nanowires," ECE 200 seminar, University of Illinois, February 2009.
150. "Nanotechnology: compound semiconductor nanotubes and nanowires," Beckman Institute Nanohour Series, University of Illinois, November 2008.
151. "III-V semiconductor nanotubes and nanowires," University of California, Los Angeles, February 2009, invited talk.
152. "III-V semiconductor nanotubes and planar nanowires," University of Wisconsin, Madison, 2008, invited seminar.
153. "What is your impact factor," NSF Nano-CEMMS graduate student meeting, UIUC, 2010, invited talk.

Contributed Talks and Posters (partial list):

1. Z. Ren, A. Waseem, H. C. Roberts, X. Wu, G. Latham, S. Park, C. Chan and Prof. X. Li, "Plasma-free Anisotropic Metal-Assisted Chemical Etching and MOCVD growth of Wide and Ultrawide Bandgap Compound Semiconductors," Welch Conference on Chemical Research, Houston, TX, USA, Oct. 2023. 1st place poster award in the "Laboratory Head" category.
2. C. Y. Chan, J. P. Menzel, Y. Dong, Z. Long, A. Waseem, X. Wu, Y. Xiao, A. Xie, S. Rakheja, V. S. Batista, Z. Mi, and X. Li "Mechanism of hv-MacEtch in GaN and III-Nitride Heterojunctions," 65th Electronic Materials Conference, Santa Barbara, CA, USA, June 2023.
3. L. Janavicius, J. A. Michaels, C. Chan, D. J. Sievers, and X. Li, "Realization of Vapor-Phase MacEtch: Mechanism, Programmability and, Scalability," 65th Electronic Materials Conference, Santa Barbara, USA, June 2023.
4. Z. Ren, H.-C. Huang, H. Lee, C. Chan, H. C. Roberts, X. Wu, A. Wasseem, W. Zhu and X. Li, " β -Ga₂O₃ FinFETs by MacEtch: temperature dependent I-V characteristics," 81st Device Research Conference (DRC), Santa Barbara, USA, June 2023.
5. "MacEtch Produces Damage-Free High-Aspect-Ratio Semiconductor Nanostructures—Current Status and Future Promise," EMC, virtual, June 2020, oral presentation.
6. "Large Area van der Waals Epitaxy of MoS₂ on III-Nitride Substrates," MRS, Pheonix, AZ, April 2017, Oral Presentation.
7. Kyooho 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, Kona, Hawaii, Oct. 2016, oral presentation.

8. 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, San Francisco, July 2015, poster.
9. 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.
10. 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.
11. 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.
12. 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.
13. Wonsik Choi, Parsian K. Mohseni, Eric Seabron, William L. Wilson, and Xiuling Li
14. 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.
15. 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.
16. "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.
17. "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.
18. "Twinning Superlattice in VLS Grown Planar GaAs Nanowires Induced by Impurity Doping," X. Li, IEEE Photonics Conference, San Francisco, Sept. 2012, oral presentation.
19. "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.
20. "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.
21. "Ultrathin InAs Nanowire Growth by Au-assisted TMI_n Dissociation," K. Jung and X. Li, Electronic Materials Conference, Penn State, June 2012, oral presentation.
22. "Semiconductor Nano-Materials and Devices: towards manufacturability," X. Li, NSF Workshop on Micro, Nano, and Bio Systems, Washington DC, March 2012, invited participant, poster.
23. "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.

24. "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.
25. "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.
26. "Monolithically Grown AlGaAs-GaAs Planar Nanowire High Electron Mobility Transistor," X. Miao and X. Li, ACCGE-18 and OMVPE-15 workshop, Aug 2011, poster.
27. "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.
28. "Towards Planar GaAs Nanowire Array High Electron Mobility Transistor," X. Miao and X. Li, DRC, June 2011, poster.
29. "Monolithically Grown In_xGa_{1-x}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.
30. "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.
31. "AlGaAs/GaAs nanowire HEMT: planar GaAs nanowire and AlGaAs shell interface study," X. Miao and X. Li, MRS, April 2011, oral presentation.
32. "Silicon Microwire Array Based Solar Cells Produced by Metal-Assisted Chemical Etching," UGIM, June 2010, Purdue University, oral presentation.
33. "Planar <110> GaAs Nanowires: Effects of Impurity Doping and Substrate Orientation," UGIM, June 2010, Purdue University, poster.
34. "Twinning Superlattice in VLS Grown <110> Planar GaAs Nanowires Induced by Impurity Doping," EMC, June 2010, Norte Dame, oral presentation.
35. "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.
36. "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.
37. "Planar III-V nanowires," International Conference on 1-dimensional Nanomaterials (ICON), Xiuling Li, oral presentation, Dec. 2009.
38. "Strain Driven Self-rolling III-V Tubes," International Conference on 1-dimensional Nanomaterials (ICON), Xiuling Li et. al., poster presentation, Dec. 2009.
39. "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.
40. "High-Mobility Planar GaAs Nanowires on (100) Substrates for Nanoelectronic Applications," Organometallic Vapor Phase Epitaxy (OMVPE) Workshop, Wisconsin, August 2009, oral presentation.
41. "Ultra-thin-walled III-Arsenide Microtubes with Embedded QW Light Emitters," ACCGE-17, Wisconsin, August, 2009, oral presentation.
42. "GaAs <110> Nanowires: Planar, Self-aligned, Twin-free, High-mobility and Transfer-Printable," 14th OptoElectronics and Communications Conference, Hong Kong, July 2009, oral presentation.
43. "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.
44. "Ultra-Thin-Walled III-Arsenide Microtubes with Embedded QW Light Emitters: Room Temperature PL Characteristics," CLEO, Baltimore, May 2009, postdeadline oral presentation.
45. "III-V micro and nanotubes: from formation process to photonic applications," Semiconductor Laser Workshop, Baltimore, May 2009, oral presentation and session organizer.

46. "Self-aligned <110> planar GaAs nanowires for low twin density and high integratability," MRS 2008 symposium LL, poster presentation.
47. "Metal-semiconductor hybrid micro- and nanotubes: large area assembly, dispersion, functionalization and characterization," MRS 2008 Symposium JJ, oral presentation (recognized as Outstanding Symposium Paper).
48. "Three Dimensional Nanoscale Pattern Formation in Light-emitting Porous Silicon," MRS 2008 Symposium MM, oral presentation.
49. "MOCVD Grown III-V Nanowires: In-plane, Self-aligned and Transfer-printable," IEEE LEOS 2008 annual meeting, oral presentation (best student paper award finalist).
50. "Self-Aligned Planar GaAs Nanowires Grown by MOCVD on GaAs (100) Substrates," CLEO/QELS 2008, oral presentation.
51. "3-D Nanoscale Pattern Formation in Porous Silicon," CLEO/QELS 2008, oral presentation.
52. "Engineered large area fabrication of ordered InGaAs-GaAs nanotube arrays," MRS 2007, oral presentation.

TEACHING

University of Texas at Austin:

ECE 396V Advanced Semiconductor Nanotechnology

ECE 440/396K: Integrated Circuit Nanomanufacturing Techniques

University of Illinois, Urbana-Champaign:

ECE 444 IC Device Theory and Fabrication, *course director*

ECE 518 Adv. Semiconductor Nanotechnology

ECE 590G Graduate Seminar in Special Topics

TE 401 Develop Breakthrough Projects

SERVICE

Offices held in Professional Societies

1. IEEE Technical Field Awards council (2024 -)
2. IEEE Nanotechnology Council Fellow Evaluation Committee (2023 -)
3. IEEE Electron Device Society, Technical Committee on Semiconductor Manufacturing (2023 -)
4. APS Member-at-Large of the Executive Committee of the Division of Materials Physics (2022 -)
5. IEEE Andrew Grove Award Committee (member 2021-2023; Chair, 2024 -)
6. IEEE Nanotechnology Council Fellow Search Committee (2021 - 2023)
7. IEEE Electron Device Society, Fellow evaluation committee (2020-2022)
8. IEEE Photonics Society, VP of Finance and Administration (2018-2020)
9. IEEE Photonics Society, Nominations and Appointment (N&A) committee (2016-2020)
10. IEEE Photonics Society, Board of governors (2014-2016)
11. IEEE Photonic Society representative to IEEE Nanotechnology Council (2010-2014)

Conference organizing committees served in Professional Societies

1. The 21st International Conference on Metal Organic Vapor Phase Epitaxy (ICMOVPE-XVIII), Technical Program Chair (2024)
2. IEDM Advanced Logic Technology Subcommittee (2022, 2023)
3. Workshop on Compound Semiconductor Materials & Devices (WOCSEMMAD), organizing committee (2021, 2022, 2023)

4. Materials Research Society (MRS) meetings (2020, 2021)
5. The 18th International Conference on Metal Organic Vapor Phase Epitaxy (ICMOVPE-XVIII), organizing committee (2016-2018)
6. Device Research Conference, Technical Program Committee (2015-2018)
7. Organizer of the inaugural symposium on Metal-assisted chemical Etching (MacEtch) at MRS (spring 2015)
8. Organizer of the first workshop on Self-Rolled-Up Membrane (S-RuM) Technology (2014)
9. Center for Nano Science and Technology (CNST) Annual Workshop, co-chair (2013)
10. 9th ACM/IEEE Symposium on Nanoscale Architecture (NANOARCH), TPC (2013)
11. IEEE Summer Topical: Micro and Nanocavity Integrated Photonics, organizing committee (2013)
12. CLEO Science & Innovation committee 6: Optical Materials, Fabrication & Characterization (2012, 2013)
13. Electronic Materials Conference (EMC) organizing committee (2012, 2013)
14. Asia Communications & Photonics Conference (ACP) Technical Program Subcommittee 6: energy (2012, 2013)
15. International Semiconductor Device Research Symposium (ISDRS) Program Committee (2011)
16. Symposium organizer for 220th Electrochemical Society Meeting (2011)
17. Device Research Conference (DRC) session chair (2010)
18. Electronic Materials Conference (EMC) session chair (2010)
19. IEEE University Government Industry Micro/Nano Symposium Technical Committee (2010)
20. IEEE Photonic Society *Semiconductor Laser workshop session organizer* (09)
21. IEEE Photonic Society *Semiconductor Laser Technical Committee* (08, 09, 10)

Editorships of Journals

1. Deputy Editor, Applied Physics Letters (2015 - present)
2. Advisory Editorial Board, Current Opinion in Solid State and Materials Science (2023 - present)
3. Guest Editor, Journal of Vacuum Science and Technology (JVST) special topic collections on 55 years of metalorganic chemical vapor deposition (MOCVD), (2023)
4. Associate Editor, IEEE Transaction on Nanotechnology (2015)
5. Associate Editor, Scientific Reports, Nature Publishing Group (2014 -2015)
6. Journal of Electronic Materials, Guest Editor for a special issue (2013)
7. 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, Wiley, etc. journals

University/campus service

University of Texas at Austin

1. Cockrell School of Engineering:
 - a. Committee for establishing a new MS degree, stackable certificate, and minor in Semiconductors (2023 - 2024);
 - b. Hocott Distinguished Centennial Engineering Research Award committee (2023).
2. Electrical and Computer Engineering Department Committees:

- a. Strategic Research Planning Committee (co-Chair, 2022-23)
 - b. Junior faculty search committee (2021-2022)
 - c. Faculty Review Committee (2022-2023)
 - d. Graduate admission coordinator, EPQS (2022-2023)
 - e. Graduate program coordinate, EPQS (2023-2024)
3. Microelectronics Research Center: MRC building renovation ad hoc committee (2023)
 4. Campus: OVPR campus limited proposal submission reviewer (2022, 2023)

University of Illinois, Urbana-Champaign

1. Campus:
 - a. Illinois International Advisory Committee (2018-);
 - b. Office of Technology Management Advisory Committee (2019-2021);
 - c. Beckman Institute Coordinating Committee (2020-2021).
2. Grainger College of Engineering:
 - a. Advisory Committee on Named Faculty Appointments (Member, 2020; Chair-Elect, 2021);
 - b. Executive Committee (2016-2019);
 - c. Curriculum Committee for the new degree of BS in Innovation, Leadership, and Engineering Entrepreneurship (ILEE);
 - d. Safety Advisory Committee;
 - e. Search Committees for ECE department head (2014, 2019), MNTL director (2014), and ARI associate director (2014).
3. Nick Holonyak Jr. Micro and Nanotechnology Lab (MNTL):
 - a. Interim Director (2020-2021)
 - b. Executive Committee (2008-2020)
 - c. Cleanroom Operations & Safety Committee (2012-2020).
4. Electrical and Computer Engineering Department Committees:
 - a. Promotion & Tenure Review (Chair, 2019, 2020, 2021),
 - b. Curriculum, Colloquium, Public Relations, Graduate Admissions, Graduate Recruitment, Fellowship, and Faculty Search committees.
5. Center for Nanotechnology Science and Technology (CNST): Annual Workshop Organizing Committee, co-Chair, poster judge (2008-2019).
6. COE, VCR, and Graduate College internal proposal review panels

Outreach activities

1. Workforce Development Initiative: co-developed the “**Semiconductor Fabrication 101**” online course together with Purdue University, sponsored by Intel Corp. (2023).
 - a. Topics covered in Semiconductor Fabrication 101 include semiconductor device basics, the semiconductor ecosystem, chip design, oxidation, thermal diffusion and ion implantation, wet and reactive ion etching, lithography, thin film deposition, chemical mechanical polishing and interconnects, and advanced packaging.
 - b. *Upon completion of the course, participants receive a certificate jointly issued by Purdue, the University of Texas at Austin, and Intel.*
2. Invited speaker, KAUST Women in Science and Engineering (WiSE) workshop, Saudi Arabia (2023).
 - a. Talk title: My Nonlinear Career Trajectory to Semiconductor Research: the comfort zone is beautiful, but...
3. Invited speaker, Dean’s Scholars Honors Program Student Association, UT Austin (2022).

4. Invited speaker, "My Nonlinear Career Trajectory," Women Chemists Committee, Chemistry, UIUC (May 2020).
5. Principle Investigator for NSF RET site on Nanotechnology (2014-2017)
6. Faculty Advisor, IEEE Electron Device Society Student Chapter (2010-)
7. Faculty advisor, Nano Electronics and Photonics (nanoEP) Seminar Series (2011-)
8. Instructor, Girls Adventures in Math, Engineering, and Science summer camp (2010-)
9. Speaker, NSF Nano-CEMMS graduate student meeting on industry research (2010)
10. Delegate, NSF US/Japan Young Scientists Exchange Team on Nanomanufacturing (2010)
11. Faculty host, NSF REU students (2009-)
12. Plenary speaker, Evening with Industry for ECE Eta Kappa Nu Honor Society (2007)
13. Panel member, career day at Barkstall Elementary school, Champaign, IL (2007)

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL RESEARCHERS

Current Group Members:

Postdoctoral Researcher (1):

Aadil Waseem

Graduate students (9):

Zhongjie Ren, Xihang Wu, Kristen Nguyen, Henry Roberts, Allen Wang, Scott A. Wicker, Jr., Gavin Latham, Sangbin Park, and Lukas Janavicius

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

Ph.D. degrees (24): Ik Su Chun (2011, Intel), Ryan Dowdy (2013, Northrup Grumman), Xin Miao (2014, Apple), Ki Jun Yu (2014, UIUC), Kevin Bassett (2015, Honeywell), Chen Zhang (2015, IBM), Karthik Balasundaram (2015, Fenwick & West LLP), Ki Jun Yu (2015, Yonsei Univ., Korea), Kyoocho Jung (2016, Samsung), Kelson Chabak (2016, Air Force Research Lab), Yi Song (2016, Western Digital), Jeong Dong Kim (2017, Intel), Wen Huang (2017, Hefei University of Technology, China), Eric Seabron (2017, Howard Univ.), Kuo-Ju Chen (2017, TSMC), Paul Froeter (2017, UIUC), Lingyu Kong (2017, Micron), Che-Yu Liu (2018, TSMC), Wonsik Choi (2019, Samsung), Hsien-Chih Huang (2022, TSMC), Julian Michaels (2023, UIUC), Apratim Khandelwal (2023, Texas Instrument), Zhendong Yang (2023, Intel), Clarence Chan (2023, Intel)

M.S. degrees (partial list): Xi Zeng (2008), Archana Challa (2010, Amazon), Seth Fortuna (2010, Berkeley, Sandia National Lab), Xiang Zhao (2015, OminiVision), SeungHyun (Ryan) Kim (Korea, military service), Moyang Li (2018, Apple), Shunya Namiki (2020, TSMC).

B.S. degrees with thesis (partial list): 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, Clarence Chan (2016, UMichigan), Mantian Xue (2016, MIT), Siyu Liu (2019, Stanford), Qingyi Wang (2019, UIUC), Bill Jiang (2021, Amazon), Yujie Emma Yang (2023, UMichigan)

Former Postdoctoral Researchers (year of training, current affiliation)

Jae Cheol Shin (2010-2011, Professor, Dongguk Univ., Korea), Xin Yu (2011-2014, TSMC), Parsian Mohseni (2012-2015, Associate Professor, Rochester Institute of Technology), Munho Kim (2016-2018, Assistant Professor, Nanyang Technology University, Singapore), and Wen Huang (2017-2018, Professor, Hefei University of Technology)