JINGYU LIN

Linda F. Whitacre Endowed Chair and Horn Distinguished Professor
Department of Electrical and Computer Engineering
Center for Nanophotonics
Texas Tech University
jingyu.lin@ttu.edu

Professional Appointments

- **Linda F. Whitacre Endowed Chair and Paul Whitfield Horn Distinguished Professor**, Electrical and Computer Engineering, Texas Tech University (TTU), 2014 – current
  (Horn Distinguished Professorships, the highest honor TTU may bestow on members of its faculty)
- **Linda F. Whitacre Endowed Chair and Professor**, Electrical and Computer Engineering, Texas Tech University, 2008-2014
- **Co-Director**, Center for Nanophotonics, Texas Tech University (Center Formed 09/2010)
- **Professor of Physics**, Kansas State University, 2002-2008
- **Associate Professor of Physics**, Kansas State University, 1997-2002
- **Assistant Professor of Physics**, Kansas State University, 1992-1997
- **Assistant Professor of Physics**, University of Northern Iowa, 1991-1992
- **Research Associate**, Kansas State University, 1989-1991

Education

- B. S. in Physics, State University of New York, College at Oneonta, 1980-1983
- M. S. in Physics, Syracuse University, 1983-1985
- Ph. D. in Physics, Syracuse University, 1985-1989

Awards, honors, and special appointments

- Elected Fellow of the National Academy of Inventors (NAI), 2019
- Elected Fellow of the American Association for the Advancement of Science (AAAS), 2018
- Elected Fellow of the SPIE - the international society for optics and photonics, 2017
- Elected Fellow of the Optical Society (OSA), 2016
- Elected Fellow of the American Physical Society (APS), 2012
- Horn Distinguished Professor, Texas Tech University 2014 – present
- Barnie E. Rushing, Jr. Faculty Distinguished Research Award, TTU, 2014

- Linda F. Whitacre Endowed Chair, Texas Tech University, 2008 – current
- Member of Advisory Board of Science and Technology Council of Wenzhou, China, 2009-2013
- External Departmental Academic Advisor, Department of Applied Physics of The Hong Kong Polytechnic University (Hong Kong PolyU), 2016 – 2022
- Member of Selection Committee of the Adolph Lomb Medal, the Optical Society of America (OSA), 05/2019 - 02/2021.
- NSF Career Advancement Award, 1994
- Senate Research Award, Syracuse University, 1986
- B.S. degree with highest honor, SUNY at Oneonta, 1983

Key Accomplishments

- Co-inventor of MicroLED and III-nitride self-emissive microdisplay (see e.g., US patent 6,410,940; US patent 9,047,818; US patent 8,058,663; Appl. Phys. Lett. **76**, 631 (2000); Appl. Phys. Lett. **78**, 1303 (2001); Appl. Phys. Lett. **99**, 031116 (2011); Appl. Phys. Lett. **116**, 100502 (2020); Nature Electronics **6**, 257 (2023)). The MicroLED invention created the microLED display industry as well as the research field of microLED. MicroLED is considered the ultimate display technology and the most suitable candidate for VR/AR/3D displays.
- Co-invented in 2002 high-voltage AC/DC-LEDs via on-chip integration of micro- and mini-LED arrays. This invention extended LED's operating voltage from 2 or 3 volts DC to 100's volts AC (see e.g., US patents US6957899, US7221044, etc.). Technology has been commercialized worldwide for general illumination and automobile headlights.
- Pioneered the development of the first deep UV picosecond time-resolved optical spectroscopy system (down to 195 nm). The system is capable to probe the static and dynamic recombination processes in semiconductors with ultrawide bandgaps with a ps time resolution. The design has been adopted by the photonic industries to benefit the communities at large and helped the field to characterize and advance ultrawide bandgap semiconductors (see e.g., Appl. Phys. Lett. **81**, 3365 (2002); Appl. Phys. Lett. **82**, 1694 (2003)).
- One of the first to experimentally determine the Mg acceptor energy level in AlN – by PL: Appl. Phys. Lett. **83**, 878 (2003); by Hall-effect: Appl. Phys. Lett. **89**, 152120 (2006).
- Realized the 1st GaN photonic crystal LED - Appl. Phys. Lett. **83**, 1231 (2003); Appl. Phys. Lett. **84**, 466 (2004).
- First to predict/demonstrate AlN is an edge-emitter (light emission in TM mode, $\boldsymbol{E}_{emi}//\boldsymbol{c}$) – Appl. Phys. Lett. **84**, 5264 (2004); Appl. Phys. Lett. **83**, 5163 (2003).
- Among the first to achieve conductivity control in Al-rich AlGaN and AlN – ρ(n-type AlN:Si)=12 Ω·cm (n=2×10^{17} cm^{-3}, μ=4 $cm^2/V\cdot s$) @300 K in Appl. Phys. Lett. **85**, 3769 (2004) and ρ(n-type $Al_{0.7}GaN_{0.3}N$:Si)=0.0075Ω·cm (n=3.3×10^{19} cm^{-3}, μ=25 $cm^2/V\cdot s$) @300 K in Appl. Phys. Lett. **85**, 4669 (2004); ρ(p-type $Al_{0.7}GaN_{0.3}N$:Mg)=40 Ω·cm @800 K in Appl. Phys. Lett. **86**, 092108 (2005).
- Among the first to exploit III-nitrides for solid-state energy devices (solar cells, thermoelectric devices, and PEC for hydrogen generation) - Appl. Phys. Lett. **92**, 042112 (2008); Appl. Phys. Lett. **94**, 063505 (2009); Appl. Phys. Lett. **96**, 052110 (2010).
- Pioneered the development of h-BN neutron detectors. Our research group has achieved h-BN thermal neutron detectors with a record high detection efficiency (at 60% to date) - Appl. Phys. Lett. **109**, 072101 (2016); Appl. Phys. Lett. **111**, 033507 (2017); J. Appl. Phys. **123**, 044501 (2018); Appl. Phys. Lett. **116**, 142102 (2020); J. Appl. Phys. **135**, 175704 (2024).
- The only group in the world possessing the capability for synthesizing h-BN quasi-bulk crystals (see. e.g., Appl. Phys. Lett. **122**, 012105 (2023); J. Appl. Phys. **135**, 175704 (2024); Phys. Status Solidi B, 2400605 (2025).
- Co-founder of III-N Technology, Inc. (3N) and AC-LED Lighting, LLC (AC-LED). 3N and AC-LED hold patent portfolios and facilitate the commercialization of microLED display and single-chip high voltage AC/DC LED technologies.

Professional and Scholarly Activities/Services

- Panelist for NSF and German Research Foundation (DFG).
- External advisor for ARO MURI programs.
- Proposal reviewer for NSF, DOE, DOD, NRC, DFG, Dutch Technology Foundation, Polish Research Foundation, and Swiss National Science Foundation.
- Journal reviewer for Appl. Phys. Lett.; J. Appl. Phys.; Optics Express; Optical Materials Express; IEEE Trans. Electron Devices; IEEE J. Quantum. Electronics; IEEE Trans. Nuclear Science; J. Mat. Res.; IEEE Photonics Technology Letters; Thin Solid Films; ACS Nano; Applied Optics, J. Crystal Growth, Materials Letters, Physica Status Solidi, Light: Science & Applications, etc.
- Involved in the organization of 15 conferences/workshops, including organized and served as the chair for the 1st APS March Meeting Focused Session on Nanophotonics: Optical properties of nanostructures and nanophotonics, 2004.
- Delivered over 100 invited presentations at international conferences and universities.
- Students mentorship: Advised over 60 graduate students and postdoctoral research associates (many of whom now hold high managerial positions at major companies in the semiconductor industry)

Issued patents (24)

1 "Micro-size LED and detector arrays for mini-displays, hyperbright light emitting diodes, lighting, and UV detector and imaging sensor applications"
US patent 6,410,940 (filed: 06/15/2000; issued date: 06/25/2002)

2 "Micro-size LED and detector arrays for mini-displays, hyperbright light emitting diodes, lighting, and UV detector and imaging sensor applications,"
Korean patent 100802764 (filed: 06/13/2001; priority date: 06/15/2000; issued date: 02/12/2008)

3 "Light emitting diodes for high AC voltage operation and general lighting"
US patent 6,957,899 (filed: 10/24/2002; issued date: 10/25/2005)

4 "Light emitting diodes for high AC voltage operation and general lighting"
US patent 7,210,819 (filed: 04/19/2005; issued date: 05/01/2007)

5 "Light emitting diodes for high AC voltage operation and general lighting"
US patent 7,213,942 (filed: 05/03/2005; issued date: 05/08/2007)

6 "Nitride microlens" U.S. patent 7,193,784B2 (filed: 05/20/2004; priority date: 05/20/2003; issued date: 03/20/2007)

7 "Heterogeneous integrated high voltage DC/AC light emitter," US patent 7,221,044 (filed: 01/21/2005; issued date: 05/22/2007)

8 "Micro-LED based high voltage AC/DC indicator lamp," US patent 7,535,028 (filed: 04/08/2005; issued date: 05/19/2009)

9 "Micro-LED based high voltage AC/DC indicator lamp (基于微型发光二极管的高压交直流指示灯)" Chinese patent #1819255 (application date: 09/05/2005; priority date: 02/03/2005; issued date: 06/02/2010)

10 "Extreme ultraviolet (EUV) detectors based upon aluminum nitride (AIN) wide bandgap semiconductors," US patent 7,498,645 (filed: 10/04/2007; priority date: 10/04/2006; issued date: 03/03/2009)

11 "Light emitting diode lamp capable of high AC/DC voltage operation," US patent 8,272,757 (filed: 06/03/2005; issued date: 09/25/2012)

12 "AC/DC light emitting diodes with integrated protection mechanism," US patent 7,714,348 (filed: 03/07/2007; priority date: 10/06/2006; issued date: 05/11/2010)

13 "Micro-emitter array based full-color microdisplay," US patent 8,058,663 (filed: 09/26/2008; priority date: 09/26/2007; issued date: 11/15/2011)

14 "Er doped III-nitride materials and devices synthesized by MOCVD," US patent 8,227,328 (filed: 08/24/2006; issued: 07/24/2012)

15 “CMOS IC for micro-emitter based microdisplay,” US patent 9,047,818 (filed: 03/12/2011; priority date: 03/23/2009; issued date: 06/02/2015)
16 “Structures and devices based on boron nitride and boron nitride-III-nitride heterostructures,” US patent 9,093,581 (filed: 05/29/2012; issued date: 07/28/2015)
17 "Charge storage imaging devices using persistent photoconductivity crystals" U.S. Patent #5,072,122.
18 "Persistent photoconductivity quenching effect crystals and electrical apparatus using same" U.S. Patent 5,101,109.
19 “Method and apparatus for use of III-Nitride wide bandgap semiconductors in optical communications” US patent 7,345,812.
20 “Solid-state neutron detectors,” US patent 10,714,651 (filed: 10/25/2018; issued: 07/14/2020)
21 “Solid-state neutron detectors,” US patent 11,195,968 B2 (filed: 01/10/2020; issued: 12/07/2021).
22 “Semiconductor optical phased arrays and methods related thereto,” US patent 11,460,723 (filed: 12/04/2019; issued 10/04/2022).
23 “Semiconductor optical phased arrays and methods related thereto,” US patent 11,747,658 (filed: 08/26/2022; issued 09/05/2023).
24 “Optical gain materials for high energy lasers and laser illuminators and methods of making and using same,” US patent 12322921 (Filed 03/12/2020; issued: 06/03/2025).

Patents pending (4)

25 “Semiconductor neutron detectors with ability for detecting thermal to fast neutrons,” US patent pending; Application 63,319,988.
26 “Wide bandgap optical phased arrays (OPA’s) and methods related thereto,” US patent pending.
27 “Engineering C-band telecom-wavelength quantum defects in hexagonal boron nitride for quantum information technology,” US patent, pending. Application 63,585,111
28 “Photoconductive switches based on AlN and BN ultrawide bandgap semiconductors,” US provisional patent, filed 03/19/2024. Application 63/567,043.

Patent disclosures

1. “Optical Hearing Device Based on Micro-LED Arrays”.

Selective Press Coverage of Our Research Work

Our group’s research work on MicroLED has been reported in German, Japanese, Russian, French, Italian, Indian, British, Portuguese, and Chinese technical magazines, in addition to press releases by media outlets including The New York Times, CNN.com, ABCnews.com and USA Today. Our recent achievement of thermal neutron detectors with a record high detection efficiency based on B-10 enriched hexagonal boron nitride has been reported by various scientific and technical media outlets, including AIP, AAAS (EurekAlert), APS (Physics.org), Science Daily, PhysOrg, Newswise, German Radio, Semiconductor Today, Physics Today, etc. See also:

- MicroLED
- 2016-17 SPIE Women in Optics Planner
- In celebration of Women’s History Month, ARPA-E is highlighting some of our trailblazing female project leaders!
- MicroLEDs: A Marriage of Brightness, Efficiency, and Possibility — With Hongxing Jiang & Jingyu Lin
- Shining a light on the future of microLEDs – Nature electronics **6**, 177 (2023).

List of Publications:

Citations: >29,000; H-Index: 90 (Google Scholar)
(*indicating conference proceedings)

452. Hongxing Jiang and Jingyu Lin, "Memories of Richard K. Chang," Pages:337–342, in the book of "Professor Richard K Chang - A Lifelong Teacher and Friend," *World Scientific Publishing Company, Singapore,* https://doi.org/10.1142/9789819803255_0106
451. H. Alwan, M. Almohammad, J. Li, J. Y. Lin and H. X. Jiang, "Optical properties of Zr-doped AlN epilayers," APL Mater. 13, 071115 (2025). https://doi.org/10.1063/5.0277907
450. Z. Alemoush, M. Almohammad, J. Li, J. Y. Lin, and H. X. Jiang, "Development of 6-inch h-BN thick wafers," AIP Advances 15, 065003 (2025). doi: 10.1063/5.0276437
449. G. Somasundaram, N. K. Hossain, Z. Alemoush, A. Tingsuwatit, J. Li, J. Y. Lin, and H. X. Jiang, "Development of millimeter-thick hexagonal boron nitride wafers and fast neutron detectors," Appl. Phys. Lett. 126, 212104 (2025). doi: 10.1063/5.0274262
448. N. K. Hossain, G. Somasundaram, Z. Alemoush, J. Li, J. Y. Lin, and H. X. Jiang, "Annealing effects on crystalline quality and device performance of ultrawide bandgap h-BN quasibulk crystals," Appl. Phys. Lett. 126, 202107 (2025). doi: 10.1063/5.0260647
447. Hongxing Jiang and Jingyu Lin, "Hexagonal boron nitride: physical properties, HVPE growth of large-diameter quasi-bulk wafers and applications," Phys. Status Solidi B, 2400605 (2025); doi: 10.1002/pssb.202400605
446. *J. Y. Lin and H. X. Jiang, "Development of large area hexagonal boron nitride quasi-bulk crystals," Proceedings Volume 13376, Quantum Sensing and Nano Electronics and Photonics XXI; 133760A (2025). doi: 10.1117/12.3040091 (Invited).
445. Hongxing Jiang and Jingyu Lin, "Development of wafer-scale h-BN quasi-bulk crystals," chapter 27, in "Gallium Nitride and Related Materials-Device Processing and Materials Characterization for Power Electronics Applications," edited by Isik Kizilyalli, Jung Han, James Speck, and Eric Carlson, The Materials Research Society Series, Springer 2025. Development of wafer-scale h-BN quasi-bulk crystals (Invited).
444. Tariq Jamil, Abdullah Al Mamun Mazumder, Mafruda Rahman, Muhammad Ali, Jingyu Lin, Hongxing Jiang, Grigory Simin and Asif Khan, "Si-doped AlN using pulsed metalorganic chemical vapor deposition and doping," Appl. Phys. Express 18, 025501 (2025).
443. G. Somasundaram, A. Tingsuwatit, Z. Alemoush, J. Li, J. Y. Lin, and H. X. Jiang, "Transport properties of h-BN lateral devices," Appl. Phys. Lett. 126, 043502 (2025).
442. H. Alwan, N. K. Hossain, J. Li, J. Y. Lin, and H. X. Jiang, "Growth and characterization of high-quality Zr doped AlN epilayers," Appl. Phys. Lett. 126, 022106 (2025).
441. J. Li, A. Tingsuwatit, Z. Alemoush, J. Y. Lin, and H. X. Jiang, "Ultrawide bandgap semiconductor h-BN for direct detection of fast neutrons," APL Materials 13, 011101 (2025).
440. J. Li, J. Y. Lin, and H. X. Jiang, "Fundamental optical transitions in hexagonal boron nitride epilayers," APL Materials 12, 111115 (2024).
439. N. K. Hossain, A. Tingsuwatit, Z. Alemoush, M. Almohammad, J. Li, J. Y. Lin, and H. X. Jiang, "Probing room temperature indirect and minimum direct band gaps of h-BN," Applied Physics Express 17, 091001 (2024).
438. Z. Alemoush, A. Tingsuwatit, A. Maity, J. Li, J. Y. Lin, and H. X. Jiang, "Status of h-BN quasi-bulk crystals and high efficiency neutron detectors," J. Appl. Phys. 135, 175704 (2024).
437. A. Tingsuwatit, N. K. Hossain, Z. Alemoush, M. Almohammad, J. Li, J. Y. Lin, and H. X. Jiang, "Properties of photocurrent and metal contacts of highly resistive ultrawide bandgap semiconductors," Appl. Phys. Lett. 124, 162105 (2024).
436. M. Almohammad, Z. Alemoush, J. Li, J. Y. Lin, and H. X. Jiang, "Carbon-related donor–acceptor pair transition in the infrared in h-BN," Appl. Phys. Lett. 124, 102106 (2024).

435. M. Almohammad, A. Tingsuwatit, Z. Alemoush, J. Li, J. Y. Lin, and H. X. Jiang, "Probing and controlling oxygen impurity diffusion in *h*-BN semi-bulk crystals**,"** Appl. Phys. Lett. 123, 252106 (2023).
434. Z. Alemoush, A. Tingsuwatit, J. Li, J. Y. Lin, and H. X. Jiang, "Probing boron vacancy complexes in h-BN semi-bulk crystals synthesized by hydride vapor phase epitaxy," Crystal 13, 1319 (2023).
433. H. X. Jiang and J. Y. Lin, "How we made the microLED," Nature Electronics 6, 257 (2023). ***Invited***.
432. Z. Alemoush, N. K. Hossain, A. Tingsuwatit, M. Almohammad, J. Li, J. Y. Lin, and H. X. Jiang, "Toward achieving cost-effective hexagonal BN semi-bulk crystals and BN neutron detectors via halide vapor phase epitaxy," Appl. Phys. Lett. 122, 012105 (2023).
431. Yuji Zhao, Mingfei Xu, Xuanqi Huang, Justin Lebeau, Tao Li, Dawei Wang, Houqiang Fu, Kai Fu, Xinqiang Wang, Jingyu Lin, and Hongxing Jiang, "Toward High Efficiency at High Temperatures: Recent Progress and Prospects on InGaN-Based Solar Cells," Materials Today Energy, 31, 101229, (2023).
430. T. B. Smith, Y. Q. Yan, W. P. Zhao, J. Li, J. Y. Lin, and H. X. Jiang, "Realization of all-crystalline GaN/Er:GaN/GaN core-cladding optical fiber structures," Appl. Phys. Lett. 121, 192110 (2022).
429. A. Tingsuwatit, J. Li, J. Y. Lin, and H. X. Jiang, "Probing the bandgap and effects of t-BN domains in h-BN neutron detectors," Applied Physics Express. 15, 101003 (2022).
428. A. Tingsuwatit, A. Maity, S. J. Grenadier, J. Li, J. Y. Lin, and H. X. Jiang, "Boron nitride neutron detector with the ability for detecting both thermal and fast neutron," Appl. Phys. Lett. 120, 232103 (2022).
427. S. J. Grenadier, A. Maity, J. Li, J. Y. Lin, and H. X. Jiang, "Effects of unique band structure of h-BN probed by photocurrent excitation spectroscopy," Applied Physics Express. 15, 051005 (2022).
426. N. Khan, M. R. Uddin, J. Li, J. Y. Lin, and H. X. Jiang, "A conductive AFM study of carbon-rich hexagonal (BN)C semiconductor alloys," MRS Communications 12, 223 (2022).
425. Y. Q. Yan, J. Li, J. Y. Lin, and H. X. Jiang, "Effect of polarization field on optical transitions and selection rules in Er doped GaN," Optical Materials Express 12, 1122 (2022).
424. Y. Q. Yan, J. Li, J. Y. Lin, and H. X. Jiang, "Formation energy and optical excitation mechanisms of Er in GaN semi-bulk crystals," Appl. Phys. Lett. 120, 052103 (2022).
423. M. Almohammad, J. Li, J. Y. Lin, and H. X. Jiang, "Charge collection and trapping mechanisms in hexagonal boron nitride epilayers," Appl. Phys. Lett. 119, 221111 (2021).
422. Samuel Grenadier, Avisek Maity, Jing Li, Jingyu Lin, and Hongxing Jiang, "Electrical Transport Properties of Hexagonal Boron Nitride Epilayers," Chapter 12 in the book "Ultrawide Bandgap Semiconductors," ed. Y. Zhao, (Elsevier, Amsterdam, 2021), Vol. 107, Chap. 12. ISBN 0080-8784; ***invited review***.
421. Hongxing Jiang and Jingyu Lin, "Development of nitride microLEDs and displays," Chapter 1 in "Micro LEDs," Volume 106 in SEMICONDUCTORS AND SEMIMETALS, edited by H. X. Jiang and J. Y. Lin, Academic Press (an imprint of Elsevier), 1st Edition (2021). ISBN: 9780128230411.
420. Hongxing Jiang and Jingyu Lin, "Micro LEDs," Volume 106 in SEMICONDUCTORS AND SEMIMETALS, edited by H. X. Jiang and J. Y. Lin, Academic Press, Hardcover ISBN: 9780128230411, 1st Edition, June (2021). ISBN: 9780128230411.
419. M. A. McKay, H. A. Al-Atabi, J. Li, J. H. Edgar, J. Y. Lin, and H. X. Jiang, "Band structure and ultraviolet optical transitions in ErN," Appl. Phys. Lett. 118, 131108 (2021).
418. J. Li, A. Maity, S. J. Grenadier, J. Y. Lin, and H. X. Jiang, "Charge collection in h-BN neutron detectors at elevated temperatures," Appl. Phys. Lett. 118, 092102 (2021).
417. A. Maity, S. J. Grenadier, J. Li, J. Y. Lin, and H. X. Jiang, "Hexagonal boron nitride: Epitaxial growth and device applications," Prog. Quantum. Electron. 76 100302 (2021). ***invited review***.
416. Y. Q. Yan, T. B. Smith, J. Li, J. Y. Lin, and H. X. Jiang, "Erbium energy levels in GaN grown by hydride vapor phase epitaxy," AIP Advances 10, 125006 (2020).
415. Q. W. Wang, J. Li, J. Y. Lin and H. X. Jiang, "Growth and properties of hexagonal boron nitride (h-BN) based alloys and quantum wells," chapter 20 in "Wide Bandgap Semiconductor-Based Electronics," edited by F. Ren and S. J. Pearton, IOP Publishing, Bristol, UK.

414. Z. Y. Sun, H. L. Gong, Y. Q. Yan, T. B. Smith, J. Li, J. Y. Lin, and H. X. Jiang, "Polarization-resolved Er emission in Er doped GaN bulk crystals," J. Appl. Phys. 127, 243107 (2020).
413. M. A. McKay, Q. W. Wang, H. A. Al-Atabi, Y. Q. Yan, J. Li, J. H. Edgar, J. Y. Lin, and H. X. Jiang, "Band structure and infrared optical transitions in ErN," Appl. Phys. Lett. 116, 171104 (2020).
412. A. Maity, S. J. Grenadier, J. Li, J. Y. Lin, and H. X. Jiang, "High efficiency hexagonal boron nitride neutron detectors with 1 cm^2 detection areas," Appl. Phys. Lett. 116, 142102 (2020).
411. J. Y. Lin and H. X. Jiang, "Development of microLED," Appl. Phys. Lett. 116, 100502 (2020). ***invited perspective***.
410. Q. W. Wang, J. Li, J. Y. Lin, and H. X. Jiang, "Probing the surface oxidation process in hexagonal boron nitride epilayers," AIP Advances 10, 025213 (2020).
409. V. X. Ho, Y. Wang, B. Ryan, L. Patrick, H. X. Jiang, J. Y. Lin, and N. Q. Vinh, "Observation of optical gain in Er-Doped GaN epilayers," J. Lumin. 221, 117090 (2020).
408. M. A. McKay, J. Li, J. Y. Lin, and H. X. Jiang, "Anisotropic index of refraction and structural properties of hexagonal boron nitride epilayers probed by spectroscopic ellipsometry," J. Appl. Phys. 127, 0531032 (2020).
407. B. Mitchell, D. Timmerman, W. Zhu, J. Y. Lin, H. X. Jiang, J. Poplawsky, R. Ishii, Y. Kawakami, V. Dierolf, J. Tatebayashi, S. Ichikawa, and Y. Fujiwara, "Direct detection of rare earth ion distributions in gallium nitride and its influence on growth morphology," J. Appl. Phys. 127, 013102 (2020).
406. S. J. Grenadier, A. Maity, J. Li, J. Y. Lin, and H. X. Jiang, "Lateral charge carrier transport properties of B-10 enriched hexagonal BN thick epilayers," Appl. Phys. Lett. 115, 072108 (2019).
405. Y. Q. Yan, Z. Y. Sun, W. P. Zhao, J. Li, J. Y. Lin, and H. X. Jiang, "Optical properties of GaN/Er:GaN/GaN core–cladding planar waveguides," Appl. Phys. Expr. 12, 075505 (2019).
404. Z. Y. Sun, Y. Q. Yan, T. B. Smith, W. P. Zhao, J. Li, J. Y. Lin, and H. X. Jiang, "Growth and fabrication of GaN/Er:GaN/GaN core-cladding planar waveguides," Appl. Phys. Lett. 114, 222105 (2019).
403. A. Maity, S. J. Grenadier, J. Li, J. Y. Lin, and H. X. Jiang, "High sensitivity hexagonal boron nitride lateral neutron detectors," Appl. Phys. Lett. 114, 222102 (2019).
402. Q. W. Wang, J. Li, J. Y. Lin, and H. X. Jiang, "Critical thickness of hexagonal GaBN/BN heterostructures," J. Appl. Phys. 125, 205703 (2019).
401. A. Maity, S. J. Grenadier, J. Li, J. Y. Lin, H. X. Jiang, "Effects of surface recombination on the charge collection in h-BN neutron detectors," J. Appl. Phys. 125, 104501 (2019).
400. Q. W. Wang, M. R. Uddin, X. Z. Du, J. Li, J. Y. Lin, and H. X. Jiang, "Synthesis and photoluminescence properties of hexagonal BGaN alloys and quantum wells," Appl. Phys. Expr. 12, 011002 (2019).
399. Z. Y. Sun, Y. Q. Yan, W. P. Zhao, J. Li, J. Y. Lin, and H. X. Jiang, "Resonant excitation cross-sections of erbium in freestanding GaN bulk crystals," Appl. Phys. Lett. 112, 202103 (2018). doi: 10.1063/1.5030347
398. S. J. Grenadier, A. Maity, J. Li, J. Y. Lin, and H. X. Jiang, "Origin and roles of oxygen impurities in hexagonal boron nitride epilayers," Appl. Phys. Lett. 112, 162103 (2018). doi: 10.1063/1.5026291
397.* Z. Y. Sun, Q. W. Wang, J. Li, J. Y. Lin, and H. X. Jiang, "Erbium-doped GaN bulk crystals as a gain medium for eye-safe high energy lasers," Proc. SPIE 10528, Optical Components and Materials XV, 105280E (2018), invited. doi: 10.1117/12.2293166
396. V. X. Ho, T. M. Al tahtamouni, H. X. Jiang, J. Y. Lin, J. M. Zavada, and N. Q. Vinh, "Room-temperature lasing action in GaN quantum wells in the infrared 1.5 μm region," ACS Photonics 5, 1303 (2018). doi: 10.1021/acsphotonics.7b01253
395. A. Maity, S. J. Grenadier, J. Li, J. Y. Lin, and H. X. Jiang, "Hexagonal boron nitride neutron detectors with high detection efficiencies," J. Appl. Phys. 123, 044501 (2018). doi: 10.1063/1.5017979

394. X. Z. Du, J. Li, J. Y. Lin, and H. X. Jiang, "Temperature dependence of the energy bandgap of multi-layer hexagonal boron nitride," Appl. Phys. Lett. 111, 132106 (2017). doi: 10.1063/1.4994070
393. S. Liu, R. He, Z. Ye, X. Z. Du, J. Y. Lin, H. X. Jiang, B. Liu, J. H. Edgar, "Large scale growth of high-quality hexagonal boron nitride crystals at atmospheric pressure from a Fe-Cr flux," Cryst. Growth Des. 17, 4932 (2017). doi: 10.1021/acs.cgd.7b00871
392. Z. Y. Sun, L. C. Tung, W. P. Zhao, J. Li, J. Y. Lin, and H. X. Jiang, "Excitation and emission mechanisms of Er:GaN gain medium in 1.5 μm region," Appl. Phys. Lett. 111, 072109 (2017). doi: 10.1063/1.4985726
391 * A. Maity, S. J. Grenadier, J. Li, J. Y. Lin, and H. X. Jiang, "High-efficiency and high-sensitivity thermal neutron detectors based on hexagonal BN epilayers," Proc. SPIE 10392L, Hard X-Ray, Gamma-Ray, and Neutron Detector Physics XIX, 103920L (2017). doi: 10.1117/12.2271556
390. J. Yang, F. Ren, R. Khanna, K. Bevlin, D. Geerpuram, L. C. Tung, J. Y. Lin, H. X. Jiang, J. Lee, E. Flitsiyan, L. Chernyak, S. J. Pearton, and A. Kuramata, "Annealing of dry etch damage in metallized and bare (-201) Ga_2O_3," J. Vac. Sci. Technol. B 35, 051201 (2017). doi: 10.1116/1.4986300
389. A. Maity, S. J. Grenadier, J. Li, J. Y. Lin, and H. X. Jiang, "Toward achieving flexible and high sensitivity hexagonal boron nitride neutron detectors," Appl. Phys. Lett. 111, 033507 (2017). doi: 10.1063/1.4995399
388. T. C. Doan, J. Li, J. Y. Lin, and H. X. Jiang, "Response of alpha particles in hexagonal boron nitride neutron detectors," Appl. Phys. Lett. 110, 213502 (2017). doi: 10.1063/1.4984112
387. M. R. Uddin, J. Li, J. Y. Lin, and H. X. Jiang, "Probing carbon impurities in hexagonal boron nitride epilayers," Appl. Phys. Lett. 110, 182107 (2017). doi: 10.1063/1.4982647
386. X. Z. Du, M. R. Uddin, J. Li, J. Y. Lin, and H. X. Jiang, "Layer number dependent optical properties of multilayer hexagonal BN epilayers," Appl. Phys. Lett. 110, 092102 (2017). doi: 10.1063/1.4977425
385. S. Butler, H. X. Jiang, J. Y. Lin, and A. Neogi, "Hyperspectral nonlinear optical light generation from a monolithic GaN microcavity," Advanced Optical Materials, 5, 1600804 (2017). doi: 10.1002/adom.201600804
384. V. Ho, T. H. Dao, H. X. Jiang, J. Y. Lin, J. Zavada, S. McGill, and N. Vinh, "Photoluminescence quantum efficiency of Er optical centers in GaN epilayers," Scientific Reports, 7, 39997 (2017). doi: 10.1038/srep39997
383. V. X. Ho, S. P. Dail, T. V. Dao, H. X. Jiang, J. Y. Lin, J. M. Zavada, and N. Q. Vinh, "Temperature dependence studies of Er optical centers in GaN epilayers grown by MOCVD," MRS Advances, pp. 1-6 (2017). doi:10.1557/adv.2017.27
382. Q. W. Wang, J. Li, J. Y. Lin, and H. X. Jiang, "Enhancement of 1.5 μm emission under 980nm resonant excitation in Er and Yb co-doped GaN epilayers," Appl. Phys. Lett. 109, 152103 (2016). doi: 10.1063/1.4964843
381 T. M. Al tahtamouni, J. Li, J. Y. Lin, and H. X. Jiang, "Current injection 1.54 μm light-emitting devices based on Er-doped GaN/AlGaN multiple quantum wells," Optical Materials Express 6, 3476 (2016). doi: 10.1364/OME.6.003476
380. T. C. Doan, J. Li, J. Y. Lin, and H. X. Jiang, "Bandgap and exciton binding energies of hexagonal boron nitride probed by photocurrent excitation spectroscopy," Appl. Phys. Lett. 109, 122101 (2016). doi: 10.1063/1.4963128
379. H. X. Jiang and J. Y. Lin, "Review—Hexagonal Boron Nitride Epilayers: Growth, Optical Properties and Device Applications," ECS J. Solid State Sci. Technol. 6, Q3012 (2017). doi: 10.1149/2.0031702jss
378. A. Maity, T. C. Doan, J. Li, J. Y. Lin, and H. X. Jiang, "Realization of highly efficient hexagonal boron nitride neutron detectors," Appl. Phys. Lett. 109, 072101 (2016). doi: 10.1063/1.4960522.

377. Z. Y. Sun, J. Li, W. P. Zhao, J. Y. Lin, and H. X. Jiang, "Toward the realization of erbium-doped GaN bulk crystals as a gain medium for high energy lasers," Appl. Phys. Lett. 109, 052101 (2016). doi: 10.1063/1.4960360
376. T. C. Doan, J. Li, J. Y. Lin, and H. X. Jiang, "Growth and device processing of hexagonal boron nitride epilayers for thermal neutron and deep ultraviolet detectors," AIP Advances 6, 075213 (2016). doi: 10.1063/1.4959595
375. * D. K. George, M. D. Hawkins, H. X. Jiang, J. Y. Lin, J. M. Zavada, and N. Q. Vinh, "Optical excitation of Er centers in GaN epilayers grown by MOCVD," Proc. SPIE 9744, Optical Components and Materials XIII, 97440V (2016); *invited*. doi:10.1117/12.2209695
374. N. Napal, H. X. Jiang, J. Y. Lin, B. Mitchell, V. Dierolf, and J. M. Zavada, "MOCVD growth of Er-doped III-N and optical-magnetic characterization," *Chapter 7* in *"Rare Earth and Transition Metal Doping of Semiconductor Materials: Synthesis, Magnetic Properties and Room Temperature Spintronics,"* edited by V. Dierolf, I. T. Ferguson, and J. M. Zavada, Woodhead Publishing, Elsevier, 2016, pp. 225-255.
373. J. Li, X. K. Cao, T. B. Hoffman, J. H. Edgar, J. Y. Lin, and H. X. Jiang, "Nature of exciton transitions in hexagonal boron nitride," Appl. Phys. Lett. 108, 122101 (2016). doi: 10.1063/1.4944696
372. X. Z. Du, J. Li, J. Y. Lin, and H. X. Jiang, "The origins of near band-edge transitions in hexagonal boron nitride epilayers," Appl. Phys. Lett. 108, 052106 (2016). doi: 10.1063/1.4941540
371. * H. X. Jiang and J. Y. Lin, "InGaN/GaN multiple quantum well solar cells for energy and hydrogen generation," ECS Transactions 66, 129 (2015); invited. doi: 10.1149/06601.0129ecst
370. D. K. George, M. D. Hawkins, M. McLaren, H. X. Jiang, J. Y. Lin, J. M. Zavada, and N. Q. Vinh, "Excitation mechanisms of Er optical centers in GaN epilayers," Appl. Phys. Lett. 107, 171105 (2015). doi: 10.1063/1.4934760
369. H. X. Jiang and J. Y. Lin, "InGaN/GaN multiple quantum well solar cells for energy and hydrogen generation," ECS Transactions, 66, 129 (2015), *invited*. doi: 10.1149/06601.0129ecst
368. M. R. Uddin, J. Li, J. Y. Lin, and H. X. Jiang, "Carbon-rich hexagonal (BN)C alloys," J. Appl. Phys. 117, 215703 (2015). doi: 10.1063/1.4921931
367. A. T. Connie, S. Zhao, S. Md. Sadaf, I. Shih, Z. Mi, X. Z. Du, J. Y. Lin, and H. X. Jiang, "Optical and electrical properties of Mg-doped AlN nanowires grown by molecular beam epitaxy," Appl. Phys. Lett. 106, 213105 (2015). doi: 10.1063/1.4921626
366. J. H. Seo, J. Li, J. Lee, S. Gong, J. Y. Lin, H. X. Jiang, and Z. Ma, "A Simplified Method of Making Flexible Blue LEDs on a Plastic Substrate," IEEE Photonics Journal, 7, 8200207 (2015). doi: 10.1109/JPHOT.2015.2412459
365. T. M. Al tahtamouni, M. Stachowicz, J. Li, J. Y. Lin and H. X. Jiang, "Dramatic enhancement of 1.54 μm emission in Er doped GaN quantum well structures," Appl. Phys. Lett. 106, 121106 (2015). doi: 10.1063/1.4916393
364. T. C. Doan, S. Majety, S. Grendadier, J. Li, J. Y. Lin, and H. X. Jiang, "Hexagonal boron nitride thin film thermal neutron detectors with high energy resolution of the reaction products," Nuclear Inst. and Methods in Physics Research Section A 783, 121 (2015). doi: 10.1016/j.nima.2015.02.045
363. T. M. Al tahtamouni, X. Z. Du, J. Y. Lin, and H. X. Jiang, "Erbium-doped AlN epilayers synthesized by metal-organic chemical vapor deposition," Optical Materials Express 5, 648 (2015). doi: 10.1364/OME.5.000648
362. D. W. Jeon, Z. Y. Sun, J. Li, J. Y. Lin, and H. X. Jiang, "Erbium doped GaN synthesized by hydride vapor-phase epitaxy," Optical Materials Express, 5, 596 (2015). doi: 10.1364/OME.5.000596
361. X. Z. Du, J. Li, J. Y. Lin, and H. X. Jiang, "The origin of deep-level impurity transitions in hexagonal boron nitride," Appl. Phys. Lett. 106, 021110 (2015); doi: 10.1063/1.4905908.
360. T. M. Al tahtamouni, X. Z. Du, J. Li, J. Y. Lin and H. X. Jiang, "Erbium-doped a-plane GaN epilayers synthesized by metal-organic chemical vapor deposition," Optical Materials Express **5**, 274 (2015). doi: 10.1364/OME.5.000274

359. T. N. Oder, J. Y. Lin, and H. X. Jiang, "III-nitride photonics crystals for lighting applications," Chapter 6 in "Handbook of Microcavities" (edited by A. H. W. Choi, Pan Stanford Publishing, 2015), ISBN 978-981-4463-24-9 (Hardcover), 978-981-4463-25-6 (ebook).381.
358. T. C. Doan, J. Li, J. Y. Lin, and H. X. Jiang, "Charge carrier transport properties in layer structured hexagonal boron nitride," AIP Advances4, 107126 (2014) doi: 10.1063/1.4898630
357. M. R. Uddin, T. C. Doan, J. Li, K. S. Ziemer, J. Y. Lin, and H. X. Jiang, "Electrical transport properties of (BN)-rich (BN)C semiconductor alloys," AIP Advances, 4,087414 (2014). doi: 10.1063/1.4893992
356. S. Alajlouni, Z. Y. Sun, J. Li, J. M. Zavada, J. Y. Lin, and H. X. Jiang, "Refractive index of erbium doped GaN thin films," Appl. Phys. Lett.105, 081104 (2014) doi: 10.1063/1.4893992
355. R. Hui, R. Xie, I. W. Feng, Z. Y. Sun, J. Y. Lin, and H. X. Jiang, "Excitation cross section of erbium-doped GaN waveguides under 980 nm optical pumping," Appl. Phys. Lett. 105, 051106 (2014). doi: 10.1063/1.4892427
354. M. Stachowicz, A. Kozanecki, C. -G. Ma, M. G. Brik, J. Y. Lin, H. X. Jiang, and J. M. Zavada, "Crystal field analysis of rare-earth ions energy levels in GaN," Optical Materials (2014) doi: 10.1016/j.optmat.2014.05.018
353. J. H. Edgar, T. B. Hoffman, B. Clubine, M. Currie, X. Z. Du, J. Y. Lin, and H. X. Jiang, "Characterization of bulk hexagonal boron nitride single crystals grown by the metal flux technique," J. Crystal Growth (2014) doi: 10.1016/j.jcrysgro.2014.06.006
352. H. X. Jiang, and J. Y. Lin, "Hexagonal boron nitride for deep ultraviolet photonic devices," Semicon. Sci. Technol. 29, 084003 (2014), *Invited review*. doi: 10.1088/0268-1242/29/8/084003
351. L. B. Tang, R. B. Ji, X. M. Li, G. X. Bai, C. P. Liu, J. H. Hao, J. Y. Lin, H. X. Jiang, K. S. Teng, Z. B. Yang, and S. P. Lau, "Deep Ultraviolet to Near-Infrared Emission and Photoresponse in Layered N-Doped Graphene Quantum Dots," ACS NANO 36, 1730 (2014). doi: 10.1021/nn501796r
350. Q. Wang, S. Zhao, A. T. Connie, I. Shih, Z. Mi, T. Gonzalez, M. P. Andrews, X. Z. Du, J. Y. Lin, and H. X. Jiang, "Optical properties of strain-free AlN nanowires grown by molecular beam epitaxy on Si substrates," Appl. Phys. Lett. 104, 223107 (2014). doi: 10.1063/1.4881558
349. T. M. Al tahtamouni, J. Y. Lin, and H. X. Jiang, "Effects of Mg-doped AlN/AlGaN superlattices on properties of p-GaN contact layer and performance of deep ultraviolet light emitting diodes," AIP Advances 4, 047122 (2014). doi: 10.1063/1.4871996
348. R. Dahal, B. N. Pantha, J. Li, J. Y. Lin, and H. X. Jiang, "Realizing InGaN monolithic solar-photoelectrochemical cells for artificial photosynthesis," Appl. Phys. Lett. 104, 143901 (2014). doi: 10.1063/1.4871105
347. M. Stachowicz, A. Kozanecki, J. Y. Lin, H. X. Jiang, and J. Zavada, "Probing of local alloy disorder in InGaN using Er^{3+} ions," Optical Materials36, 1730 (2014) doi: 10.1016/j.optmat.2014.02.013
346. M. R. Uddin, S. Majety, J. Li, J. Y. Lin, and H. X. Jiang, "Layer-structured hexagonal (BN)C semiconductor alloys with tunable optical and electrical properties," J. Appl. Phys. 115, 093509 (2014). doi: 10.1063/1.4867641
345. T. C. Doan, S. Majety, S. Grendadier, J. Li, J. Y. Lin, and H. X. Jiang, "Fabrication and characterization of solid-state thermal neutron detectors based on hexagonal boron nitride epilayers," Nuclear Inst. and Methods in Physics Research Section A 748, 84 (2014). doi: 10.1016/j.nima.2014.02.031
344. X. Z. Du, C. D. Frye, J. H. Edgar, J. Y. Lin, and H. X. Jiang, "Temperature dependence of the energy bandgap of two-dimensional hexagonal boron nitride probed by excitonic photoluminescence, " J. Appl. Phys. 115, 053503 (2014) doi:10.1063/1.4863823
343. S. Majety, T. C. Doan, J. Li, J. Y. Lin, and H. X. Jiang, "Electrical transport properties of Si-doped hexagonal boronnitride epilayers," AIP Advances 3, 122116 (2013). doi:10.1063/1.4860949
342. S. Majety, T. C. Doan, J. Li, J. Y. Lin, and H. X. Jiang, "Electrical transport properties of Si-doped hexagonal boronnitride epilayers," AIP Advances 3, 122116 (2013). doi:10.1063/1.4860949
341. X. K. Cao, B. Clubine, J. H. Edgar, J. Y. Lin, and H. X. Jiang, "Two-dimensional excitons in three-dimensional hexagonal boron nitride," Appl. Phys. Lett. 103, 191106 (2013). doi:10.1063/1.4829026

340. S. Grenadier, J. Li, J.Y. Lin, and H.X. Jiang, "Dry Etching Techniques for Active Devices Based on Hexagonal Boron Nitride Epilayers," J. Vac. Sci. Technol. A31, 061517 (2013). doi:10.1116/1.4826363
339. I. W. Feng, S. X. Jin, J. Li, J. Y. Lin, and H. X. Jiang, "SiO_2/TiO_2 distributed Bragg reflector near 1.5 μm fabricated by e-beam evaporation," J. Vac. Sci. Technol. A31, 061514 (2013). doi:10.1116/1.4823705
338. I. W. Feng, W. P. Zhao, J. Li, J. Y. Lin, H. X. Jiang, and J. Zavada, "Correlation between the optical loss and crystalline quality in erbium-doped GaN optical waveguides," Applied Optics 52, 225426 (2013) doi:10.1364/AO.52.005426
337. S. Majety, J. Li, W. P. Zhao, B. Huang, S. H. Wei, J. Y. Lin and H. X. Jiang, "Hexagonal boron nitride and 6H-SiC heterostructures," Appl. Phys. Lett. 102, 213505(2013). doi:10.1063/1.4808365
336. H. X. Jiang and J. Y. Lin, "Nitride micro-LEDs and beyond - a decade progress review," Optics Express, Optics Express 21, A475 (2013), *invited*. doi:10.1364/OE.21.00A475
335. T. Tong, D. Fu, A. X. Levander, W. J. Schaff, B. N. Pantha, B. Liu, R. Zhang, J. Y. Lin, H. X. Jiang, J. Wu, David. G. Cahill "Suppression of thermal conductivity in InxGa1-xN alloys by nanometer-scale disorder" Appl. Phys. Lett., Appl. Phys. Lett. 102, 121906 (2013). doi:10.1063/1.4798838
334. * X. K. Cao, S. Majety, J. Li, J. Y. Lin and H. X. Jiang, "Optoelectronic properties of hexagonal boron nitride epilayers," Proc. SPIE 8631, 863128 (2013); *invited*. doi:10.1117/12.2009115
333. T. M. Al tahtamouni, J. Y. Lin and H. X. Jiang, "Effects of double layer AlN buffer layers on properties of Si-doped $Al_xGa_{1-x}N$ for improved performance of deep ultraviolet light emitting diodes," J. Appl. Phys. 113, 123501 (2013). doi:10.1063/1.4798239
332. I. W. Feng, Jing Li, J. Y. Lin, H. X. Jiang and J. Zavada, "Optical excitation cross section of erbium in GaN," Applied Optics, **52**, 61132 (2013). doi:10.1364/AO.52.001132
331. T. M. Al tahtamouni, J. Y. Lin, and H. X. Jiang, "High quality AlN grown on double layer AlN buffers on SiC substrate for deep ultraviolet photodetectors," Appl. Phys. Lett.101, 192106 (2012). doi:10.1063/1.4766732
330. *S. Majety, J. Li, X. K. Cao, R. Dahal, J. Y. Lin, H. X. Jiang, "Metal-semiconductor-metal neutron detectors based on hexagonal boron nitride epitaxial layers," Proc. SPIE 8507, 85070R (2012). doi:10.1117/12.940748
329. J. Li, S. Majety, R. Dahal, W.P. Zhao, J. Y. Lin, and H. X. Jiang, "Dielectric strength, optical absorption, and deep UV detectors of hexagonal boron nitride epilayers," Appl. Phys. Lett. 101, 171112 (2012). http://dx.doi.org/10.1063/1.4764533.
328. B. Huang, H. X. Jiang, X. K. Cao, J. Y. Lin, and Su-Huai Wei, "Origin of the significantly enhanced optical transitions in layered boron nitride," Phys. Rev. B 86, 155202 (2012). doi:10.1103/PhysRevB.86.155202
327. S. Majety, X. K. Cao, J. Li, R. Dahal, J. Y. Lin, and H. X. Jiang, "Band-edge transitions in hexagonal boron nitride epilayers," Appl. Phys. Lett. 101, 051110 (2012). doi:10.1063/1.4742194
326. C. Ugolini, I. W. Feng, A. Sedhain, J. Y. Lin, H. X. Jiang, "Formation energy of optically active Er^{3+} centers in Er doped GaN," Appl. Phys. Lett. 101, 051114 (2012). doi:10.1063/1.4742196
325. I-Wen Feng, Jing Li, Jingyu Lin, Hongxing Jiang and John Zavada, "Effects of growth pressure on erbium doped GaN infrared emitters synthesized by metal organic chemical vapor deposition," Optical Materials Express, Optical Materials Express 2, 1095 (2012). doi:10.1364/OME.2.001095
324. T. M. Al Tahtamouni, J. Y. Lin, and H. X. Jiang, " Optical polarization in c-plane Al-rich $AlN/Al_xGa_{1-x}N$ single quantum wells," Appl. Phys. Lett. 101, 042103 (2012). doi:10.1063/1.4737941
323. T. M. Al Tahtamouni, J. Li, J. Y. Lin, and H. X. Jiang, "Surfactant effects of gallium on quality of AlN epilayers grown via metal-organic chemical-vapour deposition on SiC substrates," J. Phys. D: Appl. Phys. 45, 285103 (2012). doi:10.1088/0022-3727/45/28/285103
322. A. Sedhain, J. Y. Lin, and H. X. Jiang, "Nature of optical transitions involving cation vacancies and complexes in AlN and AlGaN," Appl. Phys. Lett. 100, 221107 (2012). doi:10.1063/1.4723693

321. Libin Tang, Rongbin Ji, Xiangke Cao, Jingyu Lin, Hongxing Jiang, Xueming Li, Kar Seng Teng, Chi Man Luk, Songjun Zeng, Jianhua Hao, and Shu Ping Lau, "Deep Ultraviolet Photoluminescence of Water-Soluble Self-Passivated Graphene Quantum Dots," ACS Nano, 6, 5102 (2012). doi:10.1021/nn300760g
320. *S. Majety, X. K. Cao, R. Dahal, B. N. Pantha, J. Li, J. Y. Lin and H. X. Jiang, "Semiconducting hexagonal boron nitride for deep ultraviolet photonics," Proc. SPIE 8268, 82682R (2012); *invited*. doi:10.1117/12.914084
319. *J. Day, J. Li, D. Y. C. Lie, C. Bradford, J. Y. Lin and H. X. Jiang, "Full-Scale Self-Emissive Blue and Green Microdisplays Based on GaN Micro-LED Arrays," Proc. SPIE 8268, 82681X (2012); *invited*. doi:10.1117/12.914061
318. B. N. Pantha, J. Y. Lin, and H. X. Jiang, "High qaulity Al-rich AlGaN alloys," Chapter 2 in *GaN and ZnO-based Materials and Devices,* edited by S.J. Pearton, published in February 2012 by Springer, Springer Series in Materials Science (ISBN: 978-3-642-23520-7).
317. S. Majety, J. Li, X. K. Cao, R. Dahal, B. N. Pantha, J. Y. Lin, and H. X. Jiang, "Epitaxial growth and demonstration of hexagonal BN/AlGaN p-n junctions for deep ultraviolet photonics," Appl. Phys. Lett. 100, 061121 (2012).doi:10.1063/1.3682523
316. *I-Wen Feng, Jing Li, Jingyu Lin, Hongxing Jiang, and John M. Zavada, "Current injection emitters at 1.54 μm based on erbium doped GaN p-i-n structures**,"** Advances in Optical Materials - Semiconductor-based Optical materials (2012).
315. M. L. Nakarmi, B. Cai, J. Y. Lin, and H. X. Jiang, "Three-step growth method for high quality AlN epilayers," Phys. Status Solidi A 209, No. 1, 126 (2012). doi:10.1002/pssa.201127475
314. J. Y. Lin, J. Day, J. Li, D. Lie, C. Bradford, and H. X. Jiang, "High-resolution group III nitride microdisplays," SPIE Newsroom, Dec. issue (2011); *invited*.
313. N. T. Woodward, N. Nepal, B. Mitchell, I. W. Feng, J. Li, H. X. Jiang, J. Y. Lin, J. M. Zavada, and V. Dierolf, "Enhanced magnetization in erbium doped GaN thin films due to strain induced electric fields," Appl. Phys. Lett. 99, 122506 (2011). doi:10.1063/1.3643041
312. Q. Wang, R. Dahal, I.-W. Feng, J. Y. Lin, H. X. Jiang, and R. Hui, "Emission and absorption cross-sections of an Er:GaN waveguide prepared with metal organic chemical vapor deposition ," Appl. Phys. Lett. 99, 121106 (2011). doi:10.1063/1.3636418
311. X. Wang, C. Timm, X. M. Wang, W. K. Chu, J. Y. Lin, H. X. Jiang and J. Z. Wu,"Metastable Giant Moments in Gd-Implanted GaN, Si, and Sapphire," Journal of Superconductivity and Novel Magnetism 24, 2123 (2011). doi:10.1007/s10948-011-1165-x
310. H.X. Jiang and J.Y. Lin, "Semiconductor lasers: Expanding into blue and green," Nature Photonics 5, 521 (2011). doi:10.1038/nphoton.2011.210
309. * K. Aryal, I. W. Feng, B. N. Pantha, J. Li, J. Y. Lin and H. X. Jiang, "Thermoelectric Properties of Er-doped InGaN Alloys for High Temperature Applications," MRS Proceedings 1325, mrss11-1325-e07-08 (2011). doi:10.1063/1.3643041
308. B.N. Pantha, H. Wang, N.Khan, J.Y. Lin, and H.X. Jiang, "Origin of background electron concentration in $In_xGa_{1-x}N$ alloys," Phys. Rev. B 84, 075327 (2011). doi:10.1103/PhysRevB.84.075327
307. J. Li, R. Dahal, S. Majety, J.Y. Lin, and H.X. Jiang, "Hexagonal boron nitride epitaxial layers as neutron detector materials," Nuclear Inst. and Methods in Physics Research Section A 654, 417 (2011). doi:10.1016/j.nima.2011.07.040
306. Jacob Day, J. Li, D.Y.C. Lie, Charles Bradford, J.Y. Lin, and H.X. Jiang, "III-Nitride full-scale high-resolution microdisplays," Appl. Phys. Lett. 99, 031116 (2011). doi:10.1063/1.3615679
305. R. Dahal, J. Li, S. Majety, B.N. Pantha, X.K. Cao, J.Y. Lin, and H.X. Jiang, "Epitaxially grown semiconducting hexagonal boron nitride as a deep ultraviolet photonic material," Appl. Phys. Lett. 98, 211110 (2011). doi:10.1063/1.3593958 (also selected by Virtual Journal of Nanoscale Science & Technology under Graphene, Carbon Nanotubes, C60, and related studies).

304. A. Sedhain, J. Y. Lin, and H. X. Jiang "AlN: Properties and Applications," Chapter 2 in "*Handbook of Luminescent Semiconductor Materials*," edited by L. Bergman and L. McHale, published in September 2011 by CRC Press, Taylor & Francis Group (ISBN: 1439834679).
303. B.N. Pantha, I.W. Feng, K. Aryal, J. Li, J.Y. Lin, and H.X. Jiang, "Erbium-Doped AlInGaN Alloys as High-Temperature Thermoelectric Materials," Appl. Phys. Express. 4, 051001(2011). doi:10.1143/APEX.4.051001
302. I.W. Feng, X.K. Cao, J. Li, J.Y. Lin, H.X. Jiang, N. Sawaki, Y. Honda, T. Tanikawa, and J. M. Zavada, "Photonic properties of erbium doped InGaN alloys grown on Si (001) substrates," Appl. Phys. Lett. 98 081102 (2011). doi:10.1063/1.3556678
301. R. Dahal, J.Y. Lin, H.X. Jiang and J.M. Zavada, "Near infrared photonic devices based on Er-doped GaN and InGaN," Optical Materials, 33, 1066 (2011). doi:10.1016/j.optmat.2010.10.002
300. N. Woodwarda, V. Dierolfa, J.Y. Lin, H.X. Jiang and J.M. Zavada, "Optical and magneto-optical properties of erbium doped InGaN and GaN epilayers," Optical Materials, 33,1059 (2011). doi:10.1016/j.optmat.2010.07.007
299. T. M. Al Tahtamouni, A. Sedhain, J. Y. Lin, and H. X. Jiang, "Beryllium Doped p-type GaN Grown by Metal-Organic Chemical Vapor Deposition," J. J. Phys. 3, 77, 2010.
298. J. Li, J. Y. Lin, H. X. Jiang, and N. Sawaki, "III-Nitrides on Si Substrates," Chapter 3 in III-V Compound Semiconductors: Integration with Silicon-Based Microelectronics, edited by T. Li, M. Mastro and A. Dadgar, published by CRC Press (Boca Raton 2010). ISBN: 978-1-4398-1523-6.
297. Q. Wang, R. Hui, R. Dahal, J.Y. Lin and H.X. Jiang, "Carrier lifetime in erbium-doped GaN waveguide emitting in 1540 nm wavelength," Appl. Phys. Lett. 97, 241105 (2010). doi:10.1063/1.3527089
296. R. Dahal, C. Ugolini, J.Y. Lin, H.X. Jiang and J.M. Zavada, "1.54 μm emitters based on erbium doped InGaN p-i-n junctions," Appl. Phys. Lett. 97, 141109, (2010). doi:10.1063/1.3499654
295. R. Dahal, J. Y. Lin, H. X. Jiang, and J. Zavada "Er doped $In_xGa_{1-x}N$ for optical communications," Chapter 5 in Rare-earth doped III-Nitrides for Optoelectronic and Spintronic Applications, edited by K O'Donnell & V Dierolf, published by Canopus Academic Publishing Ltd and Springer SBM (2010). doi:10.1007/978-90-481-2877-8_5
294. R. Dahal, J. Li, K. Aryal, J. Y. Lin, and H. X. Jiang, "InGaN/GaN multiple quantum well concentrator solar cells," Appl. Phys. Lett. 97, 073115 (2010). doi:10.1063/1.3481424
293. B. N. Pantha, J. Li, J. Y. Lin, and H. X. Jiang, "Evolution of phase separation in In-rich InGaN alloys," Appl. Phys. Lett. 96, 232105 (2010). doi:10.1063/1.3453563
292. B. N. Pantha, A. Sedhain, J. Li, J. Y. Lin, and H. X. Jiang, "Probing the relationship between structural and optical properties of Si-doped AlN," Appl. Phys. Lett. 96, 131906 (2010). doi:10.1063/1.3374444
291. A. Sedhain, J. Li, J. Y. Lin, and H. X. Jiang, "Nature of deep center emissions in GaN," Appl. Phys. Lett. 96, 151902 (2010). doi:10.1063/1.3389497
290. I. W. Feng, J. Li, A. Sedhain, J. Y. Lin, H. X. Jiang, and J. Zavada, "Enhancing erbium emission by strain engineering in GaN heteroepitaxial layers," Appl. Phys. Lett. 96, 031908 (2010). doi:10.1063/1.3295705
289. K. Aryal, B. N. Pantha, J. Li, J. Y. Lin, and H. X. Jiang, "Hydrogen generation by solar water splitting using p-InGaN photoelectrochemical cells," Appl. Phys. Lett. 96, 052110 (2010). doi:10.1063/1.3304786
288. * B N. Pantha, J. Y. Lin, and H. X. Jiang, "III-nitride nanostructures for energy generation," Proc. SPIE 7608, 76081I (2010); *invited*. doi:10.1117/12.840726
287. * B. N. Pantha, A. Sedhain, J. Li, J. Y. Lin, and H. X. Jiang, "Achieving p-$In_xGa_{1-x}N$ alloys with high In contents," Proc. SPIE 7602, 76020Z (2010). doi:10.1117/12.842313
286. *R. Dahal, J. Y. Lin, H. X. Jiang, and J. M. Zavada, "1.54 μm emitter and optical amplifier based on Er doped InGaN/GaN," Proc. SPIE 7598, 759819 (2010). doi:10.1117/12.842325
285. A. BenMoussa, A. Soltani, U. Schühle, K. Haenen, Y.M. Chong, W.J. Zhang, R. Dahal, J.Y. Lin, H.X. Jiang, H.A. Barkad, B. BenMoussa, D. Bolsee, C. Hermans, U. Kroth, C. Laubis, V. Mortet,

J.C. De Jaeger, B. Giordanengo, M. Richter, F. Scholze, and J.F. Hochedezm, "Recent developments of wide-bandgap semiconductor based UV sensors," Diamond & Related Materials, 18, 860 (2009). doi:10.1016/j.diamond.2008.11.013

284. *B. Giordanengo, A. Ben Moussa, J.-F. Hochedez, A. Soltani, P. de Moor, K. Minoglou, P. Malinowski, J.-Y. Duboz, Y.M. Chong, Y.S. Zou, W.J. Zhang, S.T. Lee, R. Dahal, J. Li, J.Y. Lin and and H.X. Jiang, "Recent Rob developments on wide bandgap based UV sensors," EAS Publications Series, 37, 199 (2009). [Astrophysics Detector Workshop 2008] doi:10.1051/eas/0937025
283. A. Sedhain, L. Du, J. H. Edgar, J. Y. Lin, and H. X. Jiang, "The origin of 2.78 eV emission and yellow coloration in bulk AlN substrates," Appl. Phys. Lett. 95, 262104 (2009). doi:10.1063/1.3276567
282. B. N. Pantha, A. Sedhain, J. Li, J. Y. Lin, and H. X. Jiang, "Electrical and optical properties of p-type InGaN," Appl. Phys. Lett. 95, 261904 (2009). doi:10.1063/1.3279149
281. R. Dahal, C. Ugolini, J. Y. Lin, H. X. Jiang, and J. M. Zavada, "Erbium-doped GaN optical amplifiers operating at 1.54 μm," Appl. Phys. Lett. 95, 111109 (2009). doi:10.1063/1.3224203
280. A. Sedhain, J. Li, J. Y. Lin, and H. X. Jiang, "Probing exciton-phonon interaction in AlN epilayers by photoluminescence," Appl. Phys. Lett. 95, 061106 (2009). doi:10.1063/1.3206672
279. S. Nikishin, B. Borisov, M. Pandikunta, R. Dahal, J. Y. Lin, H. X. Jiang, H. Harris, and M. Holtz, "High quality AlN for deep UV photodetectors," Appl. Phys. Lett. 95, 054101 (2009). doi:10.1063/1.3200229
278. A. Sedhain, C. Ugolini, J. Y. Lin, H. X. Jiang, and J. M. Zavada, "Photoluminescence properties of erbium doped InGaN epilayers," Appl. Phys. Lett. 95, 041113 (2009). doi:10.1063/1.3193532
277. N. Nepal, J. M. Zavada, R. Dahal, C. Ugolini, A. Sedhain, J. Y. Lin, and H. X. Jiang, "Optical enhancement of room temperature ferromagnetism in Er-doped GaN epilayers," Appl. Phys. Lett. 95, 022510 (2009). doi:10.1063/1.3176972
276. X. H. Ji, Q. Y. Zhang, S. P. Lau, H. X. Jiang, and J. Y. Lin, "Temperature-dependent photoluminescence and electron field emission properties of AlN nanotip arrays," Appl. Phys. Lett. 94, 173106 (2009). doi:10.1063/1.3126055
275. N. Nepal, J. M. Zavada, D. S. Lee, A. J. Steckl, A. Sedhain, J. Y. Lin, and H. X. Jiang, "Deep ultraviolet photoluminescence of Tm-doped AlGaN alloys," Appl. Phys. Lett. 94, 111103 (2009). doi:10.1063/1.3097808
274. M. L. Nakarmi, N. Nepal, J. Y. Lin, and H. X. Jiang, "Photoluminescence studies of impurity transitions in Mg-doped AlGaN alloys," Appl. Phys. Lett. 94, 091903 (2009). doi:10.1063/1.3094754
273. R. Dahal, B. Pantha, J. Li, J. Y. Lin, and H. X. Jiang, "InGaN/GaN multiple quantum well solar cells with long operating wavelengths," Appl. Phys. Lett. 94, 063505 (2009). doi:10.1063/1.3081123
272. B. N. Pantha, R. Dahal, J. Li, J. Y. Lin, H. X. Jiang and G. Pomrenke, "Thermoelectric Properties of $In_{0.3}Ga_{0.7}N$ Alloys," JEM (2009). doi:10.1007/s11664-009-0676-8
271. Z. Y. Fan, J. Y. Lin and H. X. Jiang,"II-nitride micro-emitter arrays: development and applications," J. Phys. D: Appl. Phys. 41, 094001 (2008). doi:10.1088/0022-3727/41/9/094001
270. B. N. Pantha, J. Li, J. Y. Lin, and H. X. Jiang, "Single phase $In_xGa_{1-x}N$ ($0.25 \leq x \leq 0.63$) alloys synthesized by metal organic chemical vapor deposition," Appl. Phys. Lett. 93, 182107 (2008). doi:10.1063/1.3006432
269. J. Li, J. Y. Lin, and H. X. Jiang, "Direct hydrogen gas generation by using InGaN epilayers as working electrodes," Appl. Phys. Lett. 93, 162107 (2008). doi:10.1063/1.3006332
268. A. Sedhain, T. M. Al Tahtamouni, J. Li, J. Y. Lin, and H. X. Jiang, "Beryllium acceptor binding energy in AlN," Appl. Phys. Lett. 93, 141104 (2008). doi:10.1063/1.2996977
267. A. Sedhain, N. Nepal, M. L. Nakarmi, T. M. Al tahtamouni, J. Y. Lin, H. X. Jiang, Z. Gu, and J. H. Edgar, "Photoluminescence properties of AlN homoepilayers with different orientations," Appl. Phys. Lett. 93, 041905 (2008). doi:10.1063/1.2965613

266. R. Dahal, C. Ugolini, J. Y. Lin, H. X. Jiang, and J. M. Zavada, "Current-injected 1.54 μm light emitting diodes based on erbium-doped GaN," Appl. Phys. Lett. 93, 033502 (2008). doi:10.1063/1.2955834

Publications listed Kansas State University as the affiliation:

265. J. Liu, J. Li, A. Sedhain, J. Y. Lin, and H. X. Jiang, "Structure and Photoluminescence Study of TiO_2 Nanoneedle Texture along Vertically Aligned Carbon Nanofiber Arrays", J. Phys. Chem. C, 112, 17127 (2008). doi:10.1021/jp8060653
264. N. Khan, A. Sedhain, J. Li, J. Y. Lin, and H. X. Jiang, "High mobility InN epilayers grown on AlN epilayer templates," Appl. Phys. Lett. 92, 172101 (2008). doi:10.1063/1.2917473
263. T. Al Tahtamouni, A. Sedhain, J. Y. Lin, H. X. Jiang, "Growth and optical properties of a-plane AlN and Al rich $AlN/Al_xGa_{1-x}N$ quantum wells grown on r-plane sapphire substrates", phys. stat. sol. (c), 5, 1568 (2008). doi:10.1002/pssc.200778491
262. R. Dahal, J. Li, Z. Y. Fan, M. L. Nakarmi, T. M. Al Tahtamouni, J. Y. Lin, H. X. Jiang, "AlN MSM and Schottky photodetectors", phys. stat. sol. (c), 5, 2148 (2008). doi:10.1002/pssc.200778489
261. T. M. Al tahtamouni, A. Sedhain, J. Y. Lin, and H. X. Jiang, "Si-doped high Al-content AlGaN epilayers with improved quality and conductivity using indium as a surfactant," Appl. Phys. Lett. 92, 092105 (2008). doi:10.1063/1.2890416
260. A. Sedhain, J. Y. Lin, and H. X. Jiang, "Valence band structure of AlN probed by photoluminescence," Appl. Phys. Lett. 92, 041114 (2008). doi:10.1063/1.2840176
259. B. N. Pantha, R. Dahal, J. Li, J. Y. Lin, H. X. Jiang, and G. Pomrenke, "Thermoelectric properties of $In_xGa_{1-x}N$ alloys," Appl. Phys. Lett. 92, 042112 (2008).
258. A. BenMoussa, J. F. Hochedez, R. Dahal, J. Li, J. Y. Lin, H. X. Jiang, A. Soltani, J.-C. De Jaeger, U. Kroth, and M. Richter, "Characterization of AlN metal-semiconductor-metal diodes in the spectral range of 44–360 nm: Photoemission assessments," Appl. Phys. Lett. 92, 022108 (2008). doi:10.1063/1.2834701
257. K. Makarova, M. Stachowicz, V. Glukhanyuk, A. Kozanecki, C. Ugolini, J.Y. Lin, H.X. Jiang, J. Zavada, "Spectroscopic studies of Er-centers in MOCVD grown GaN layers highly doped with Er," Materials Science and Engineering B 146, 193 (2008). doi:10.1016/j.mseb.2007.07.032
256. R. Dahal, T. M. Al Tahtamouni, J. Y. Lin, and H. X. Jiang, "AlN avalanche photodetectors," Appl. Phys. Lett. 91, 243503 (2007). doi:10.1063/1.2823588
255. X. A. Cao, H. Piao, J. Li, J. Y. Lin, and H. X. Jiang, "Surface chemical and electronic properties of plasma-treated n-type $Al_{0.5}Ga_{0.5}N$," Phys. Stat. Sol. (a) 204, 3410 (2007). doi:10.1002/pssa.200723119
254. B. N. Pantha, N. Nepal, T. M. Al Tahtamouni, M. L. Nakarmi, J. Li, J. Y. Lin, and H. X. Jiang, "Correlation between biaxial stress and free exciton transition in AlN epilayers," Appl. Phys. Lett. 91, 121117 (2007). doi:10.1063/1.2789182
253. Fei Wang, Shu-Shen Li, Jian-Bai Xia, H. X. Jiang, J. Y. Lin, Jingbo Li, and Su-Huai Wei, "Effects of the wave function localization in AlInGaN quaternary alloys," Appl. Phys. Lett. 91, 061125 (2007). doi:10.1063/1.2769958
252. J. M. Zavada, N. Nepal, C. Ugolini, J. Y. Lin, and H. X. Jiang et al, "Optical and magnetic behavior of erbium-doped GaN epilayers grown by metal-organic chemical vapor deposition," Appl. Phys. Lett. 91, 054106 (2007). doi:10.1063/1.2767992
251. N. Khan, N. Nepal, A. Sedhain, J. Y. Lin, and H. X. Jiang, "Mg acceptor level in InN epilayers probed by photoluminescence," Appl. Phys. Lett. 91, 012101 (2007). doi:10.1063/1.2753537
250. R. Dahal, T. M. Al Tahtamouni, Z. Y. Fan, J. Y. Lin, and H. X. Jiang, "Hybrid AlN–SiC deep ultraviolet Schottky barrier photodetectors," Appl. Phys. Lett. 90, 263505 (2007). doi:10.1063/1.2752126
249. B. N. Pantha, R. Dahal, M. L. Nakarmi, N. Nepal, J. Li, J. Y. Lin, H. X. Jiang, Q. S. Paduano, and David Weyburne, "Correlation between optoelectronic and structural properties and epilayer thickness of AlN," Appl. Phys. Lett. 90, 241101 (2007). doi:10.1063/1.2747662

248. T. M. Al Tahtamouni, A. Sedhain, J. Y. Lin, and H. X. Jiang, "Growth and photoluminescence studies of a-plane AlN/$Al_xGa_{1-x}N$ quantum wells," Appl. Phys. Lett. 90, 221105 (2007). doi:10.1063/1.2743956
247. X. H. Ji, S. P. Lau, S. F. Yu, H. Y. Yang, T. S. Herng, A. Sedhain, J. Y. Lin, H. X. Jiang, K. S. Teng, and J. S. Chen, "Ultraviolet photoluminescence from ferromagnetic Fe-doped AlN nanorods," Appl. Phys. Lett. 90, 193118 (2007). doi:10.1063/1.2738370
246. *Z. Y. Fan, J. Y. Lin, and H. X. Jiang, "Achieving conductive high Al-content AlGaN alloys for deep UV photonics," Proc. SPIE 6479, 64791I (2007). *Invited*, doi:10.1117/12.715046
245. C. Ugolini, N. Nepal, J. Y. Lin, H. X. Jiang, and J. M. Zavada, "Excitation dynamics of the 1.54 μm emission in Er doped GaN synthesized by metal organic chemical vapor deposition,"Appl. Phys. Lett. 90, 051110(2007). doi:10.1063/1.2450641
244. H. X. Jiang and J. Y. Lin, "III-Nitride Micro-Cavity Light-Emitters," – in "Wide Bandgap Light-Emitting Materials and Devices," edited by G.F. Neumark, I. Kuskovsky, and H. X. Jiang, published by Wiley –VCH Verlag GmbH, 2007.
243. J. Li, Z. Y. Fan, R. Dahal, M. L Nakarmi, J. Y. Lin, and H. X. Jiang, "200 nm deep ultraviolet photodetectors based on AlN," Appl. Phys. Lett. 89, 213510 (2006). doi:10.1063/1.2397021
242. N. Nepal, M. L. Nakarmi, H. U. Jang, J. Y. Lin, and H. X. Jiang, "Growth and photoluminescence studies of Zn-doped AlN epilayers,"Appl. Phys. Lett. 89, 192111 (2006). doi: 10.1063/1.2387869
241. M. L. Nakarmi, N. Nepal, C. Ugolini, T. M. Al Tahtamouni, J. Y. Lin,and H. X. Jiang,"Correlation between optical and electrical properties of Mg-doped AlN epilayers," Appl. Phys. Lett. 89, 152120 (2006). doi:10.1063/1.2362582
240. Z. M. Zavada, N.Nepal, J. Y. Lin, H. X. Jiang,E. Brown, U. Hommerich, J. Hite, G. T. Thaler, C. R. Abernathy, S. J. Pearton,and R. Gwilliam, "Ultraviolet photoluminescence from Gd-implanted AlN epilayers," Appl. Phys. Lett. 89, 152107 (2006). doi:10.1063/1.2357552
239. N. Khan and J. Li, "Effects of compressive strain on optical properties of $In_xGa_{1-x}N$/GaN quantum wells," Appl. Phys. Lett. 89, 151916 (2006). doi:10.1063/1.2362587
238. C. Ugolini, N.Nepal, J. Y. Lin, H. X. Jiang, and J. M. Zavada "Erbium-doped GaN epilayers synthesized by metal-organic chemical vapor deposition," Appl. Phys. Lett. 89, 151903 (2006). doi:10.1063/1.2362587
237. T. M. Al Tahtamouni, N. Nepal, J. Y. Lin, H. X. Jiang and W. W. Chow, "Growth and photoluminescence studies of Al-rich AlN/$Al_xGa_{1-x}N$ quantum wells," Appl. Phys. Lett.89, 131922 (2006). doi:10.1063/1.2358107
236. N. Nepal, M. L. Nakarmi, J. Y. Lin, and H. X. Jiang, "Photoluminescence studies of impurity transitions in AlGaN alloys," Appl. Phys. Lett. 89, 092107 (2006). doi:10.1063/1.2337856
235. N. Nepal, K. B. Nam, J. Li, M. L. Nakarmi, J. Y. Lin, and H. X. Jiang, "Higher lying conduction band in GaN and AlN probed by photoluminescence spectroscopy," Appl. Phys. Lett. 88, 261919 (2006). doi: 10.1063/1.2217160
234. X. A. Cao, H. Piao, S. F. LeBoeuf, J. Li, J. Y. Lin, and H. X. Jiang, "Effects of plasma treatment on the Ohmic characteristics of Ti/Al/Ti/Au contacts to n-AlGaN," Appl. Phys. Lett. 89, 082109 (2006). doi:10.1063/1.2338434
233. J. K. Kim , E. F. Schubert , J. Cho , C. Sone , J. Y. Lin , H. X. Jiang , and J. M. Zavada, "GaN light-emitting triodes for high-efficiency hole injection," J. Electrochem. Soc.153, G734 (2006). doi:10.1117/12.647453
232. T. N. Oder, P. Martin, J. Y. Lin, H. X. Jiang, J. R. Williams, and T. Isaacs-Smith, "Thermally stable Schottky contacts on n-type GaN using ZrB_2," Appl. Phys. Lett. 88, 183505 (2006).doi:10.1063/1.2199611
231. J. Li, J. Y. Lin, and H. X. Jiang,"Growth of III-nitride photonic structures on large area silicon substrates," Appl. Phys. Lett. 88, 171909 (2006). doi:10.1063/1.2199492
230. *Z. Y. Fan, J. Y. Lin, and H. X. Jiang, "III-nitride deep ultraviolet micro- and nano-photonics," Proc. SPIE 6127, 61271C (2006), *invited*.

229. N. Nepal, J. Shakya, M. L. Nakarmi, J. Y. Lin, and H. X. Jiang,"Deep ultraviolet photoluminescence studies of AlN photonic crystals," Appl. Phys. Lett. 88, 133113 (2006). doi:10.1063/1.2190452
228. *N. Nepal, M. L. Nakarmi, J. Y. Lin, and H. X. Jiang, "Time-resolved photoluminescence studies of Mg-doped AlN epilayers," Proc. SPIE, 6118, 61180E (2006); *invited*. doi:10.1117/12.51856,
227. Z. Y. Fan, J. Li, M. L. Nakarmi, J. Y. Lin, and H. X. Jiang, "AlGaN/GaN/AlN quantum-well field-effect transistors with highly resistive AlN epilayers," Appl. Phys. Lett. 88, 073513 (2006). doi:10.1063/1.2174847
226. N. Nepal, J. Li, M. L. Nakarmi, J. Y. Lin, and H. X. Jiang,"Exciton localization in AlGaN alloys," Appl. Phys. Lett. 88, 062103 (2006). doi:10.1063/1.2172728
225. A. N. Westmeyer, S. mahajan, K. K. Bajaj, J. Y. Lin, H. X. Jiang, D. D. Koleske, and R. T. Senger, "Determination of energy-band offsets between GaN and AlN using excitonic luminescence transition in AlGaN alloys," J. Appl. Phys. 99, 013705 (2006). doi:10.1063/1.2158492
224. * H. X. Jiang, C. Ugolini, J. Y. Lin, and J. Zavada, "III-nitride wide bandgap semiconductors for optical communications," IEEE Lasers and Electro-Optics Society (LEOS) Annual Meeting, Vols 1 and 2, 36 (2006) 2006, *invited*.
223. G.D. Chen, Y. Z. Zhu, G. J. Yan, J. S.Yuan, K. H. Kim, J. Y. Lin, and H. X. Jiang, "Time-resolved photoluminescence studies of indium-rich InGaN alloys," CHINESE PHYSICS LETTERS 22, 472 (2005).
222. Hallbeck S, Caruso AN, Adenwalla S, Brand J, Byun DJ, Jiang HX, Lin JY, Losovyj YB, Lundstedt C, McIlroy DN, Pitts WK, Robertson BW, Dowben PA, "Comment on "Spectral identification of thin film coated and solid form semiconductor neutron detectors" by McGregor and Shultis," Nuclear Inst. and Methods in Physics Research Section A 536, 228 (2005). doi:10.1016/j.nima.2004.07.210
221. N. Nepal, J. Li, M. L. Nakarmi, J. Y. Lin, and H. X. Jiang, "Temperature and Compositional Dependence of the Energy Bandgap of AlGaN Alloys," Appl. Phys. Lett. 87, 242104 (2005). doi:10.1063/1.2142333
220. *N. Nepal, K. B. Nam, J. Li, J. Y. Lin, and H. X. Jiang, "Carrier dynamics in AlN and GaN epilayers at the elevated temperatures," Proc. SPIE, 5725, 119 (2005). doi:10.1117/12.590917
219. R. Hui, Y. Wan, J. Li, S.X. Jin, J. Y. Lin, and H. X. Jiang, "III-nitride-based planar lightwave circuits for long wavelength optical communications," IEEE J. Quantum Electronics 41, 100 (2005). doi:10.1109/JQE.2004.838169
218. M. L. Nakarmi, N. Nepal, J. Y. Lin, and H. X. Jiang, "Unintentionally doped n-type $Al_{0.67}Ga_{0.33}N$ epilayers" Appl. Phys. Lett. 86, 261902 (2005). doi:10.1063/1.1954875 I PDF
217. K. B. Nam, M. L. Nakarmi, J. Y. Lin, and H. X. Jiang, "Deep impurity transitions involving cation vacancies and complexes in AlGaN alloys" Appl. Phys. Lett. 86, 222108 (2005). doi:10.1063/1.1943489
216. M. Khizar, Z. Y. Fan, K. H. Kim, J. Y. Lin, and H. X. Jiang, "Nitride deep-ultraviolet light-emitting diodes with microlens array" Appl. Phys. Lett. 86, 173504 (2005). doi:10.1063/1.1914960
215. J. Shakya, K. Knabe, K. H. Kim, J. Li, J. Y. Lin, and H. X. Jiang, "Polarization of III-nitride blue and ultraviolet light-emitting diodes" Appl. Phys. Lett. 86, 091107 (2005). doi:10.1063/1.1875751
214. M. L. Nakarmi, K. H. Kim, M. Khizar, Z. Y. Fan, J. Y. Lin and H. X. Jiang, "Electrical and optical properties of Mg-doped $Al_{0.7}Ga_{0.3}N$ alloys"Appl. Phys. Lett. 86, 092108 (2005). doi:10.1063/1.1879098
213. * J. Y. Lin, H. X. Jiang, and J. Zavada, "Nitride Photonic Crystals," Eighth International Symposium on Contemporary Photonics Technology, Tokyo, Japan (January 2005), *invited*.
212. * J. Y. Lin, and H. X. Jiang, "III-Nitride Ultraviolet Micro- and Nano-Photonics," 2005 Conference on Lasers & Electro-Optics (CLEO), 2, 1441 (2005); *invited*.
211. * J.M. Zavada, Ei Ei Nyein, U. Hommerich, J., Li, J. Y. Lin, H. X. Jiang, P. Chow, and J. W. Dong, "Visible and IR emission from Er-doped III-N LEDs," MRS Proceedings, 866, 59 (2005).

210. B. Guo, Z. R. Qiu, J. Y. Lin, H. X. Jiang, and K. S. Wong, “Deep bandtail states picosecond intensity-dependent carrier dynamics of GaN epilayer under high excitation,” Appl. Phys. B – Laser and Optics 80, 521 (2005).
209. B. Liu, J.H. Edgar, B. Raghothamachar, M. Dudley, J.Y. Lin, and H.X. Jiang, A. Sarua, M. Kuball, “Free nucleation of aluminum nitride single crystals in HPBN crucible by sublimation,” Materials Science and Engineering B - Solid State Materials for Advanced Technology 117, 99 (2005).
208. K. H. Kim, Z. Y. Fan, M. Khizar, M. L. Nakarmi, J. Y. Lin, and H. X. Jiang, "AlGaN-based ultraviolet light-emitting diodes grown on AlN epilayers,” Appl. Phys. Lett. 85, 4777 (2004). doi:10.1063/1.1819506
207. K. Zhu, M. L. Nakarmi, K. H. Kim, J. Y. Lin, and H. X. Jiang, “Silicon Doping Dependence of Highly Conductive n-type $Al_{0.7}Ga_{0.3}N$,” Appl. Phys. Lett. 85, 4669 (2004). doi:10.1063/1.1825055
206. *J. Shakya, K. H. Kim, T. N. Oder, J. Y. Lin, and H. X. Jiang, “III-nitride blue and UV photonic-crystal light-emitting diodes,” Proc. of SPIE Vol. 553-241(2004). doi:10.1117/12.565632
205. *M. L. Nakarmi, K. H. Kim, K. Zhu, J. Y. Lin and H. X. Jiang, “Mg doped Al-rich AlGaN alloys for UV emitters,” Proc. SPIE, 5530, 54 (2004). doi:10.1117/12.566192
204. * K.B. Nam, M. L. Nakarmi, J. Li, J. Y. Lin and H. X. Jiang, “Time-resolved photoluminescence studies of Si & Mg-doped AlN epilayers,” Proc. SPIE (SPIE, Belingham, WA), 5352, 188 (2004).
203. L. Chen, B. J. Skromme, R. F. Dalmau, R. Schlesser, Z. Sitar,C. Chen, W. Sun, J. Yang, M. A. Khan, M. L. Nakarmi, J. Y. Lin, and H. X. Jiang,"Band-edge exciton states in AlN single crystals and epitaxial layers," Appl. Phys. Lett. 85, 4334 (2004).doi:10.1063/1.1818733
202. M. L. Nakarmi, K. H. Kim, K. Zhu, J. Y. Lin, and H. X. Jiang, "Transport properties of highly conductive n-type Al-rich $Al_xGa_{1-x}N$ ($x \geq 0.7$)," Appl. Phys. Lett. 85, 3769 (2004). doi:10.1063/1.1809272
201. K. B. Nam, J. Li, J. Y. Lin, and H. X. Jiang, "Optical properties of AlN and GaN in elevated temperatures," Appl. Phys. Lett. 85, 3489 (2004). doi:10.1063/1.1806545
200. N. Nepal, M. L. Nakarmi, K. B. Nam, J. Y. Lin, and H. X. Jiang, "Acceptor-bound exciton transition in Mg-doped AlN epilayer," Appl. Phys. Lett. 85, 2271 (2004). doi:10.1063/1.1796521
199. J. Shakya, J. Y. Lin and H. X. Jiang, "Time-Resolved Electroluminescence Studies of III-Nitride Ultraviolet Photonic-Crystal Light-Emitting Diodes," Appl. Phys. Lett. 85, 2104 (2004). doi:10.1063/1.1786372
198. D. Zhang, J. H. Edgar, B. Liu, H. E. Huey, H. X. Jiang, J. Y. Lin, M. Kuball, F. Mogal, J. Chaudhuri, and Z. Rek, “Bulk AlN growth by direct heating of the source using microwave,” J. Crystal Growth, 262 89 (2004).
197. J. Shakya, K. H. Kim, J. Y. Lin, and H. X. Jiang, "Enhanced Light Extraction in III-Nitride Ultraviolet Photonic Crystal Light-Emitting Diodes," Appl. Phys. Lett. 85, 142 (2004). doi:10.1063/1.1768297
196. K. B. Nam, J. Li, M. L. Nakarmi, J. Y. Lin, and H. X. Jiang, "Unique optical properties of AlGaN alloys and related ultraviolet emitters," Appl. Phys. Lett. 84, 5264 (2004). doi:10.1063/1.1765208
195. Shih-Wei Feng, Tsung-Yi Tang, Yen-Cheng Lu, Shi-Jiun Liu, En-Chiang Lin, C. C. Yang, Kung-Jen Ma, Ching-Hsing Shen, L. C. Chen, K. H. Kim, J. Y. Lin, and H. X. Jiang, “Cluster size and composition variations in yellow and red light-emitting InGaN thin films upon thermal annealing,” J. Appl. Phys. 95, 5388 (2004).
194. W. Liang, K.T. Tsen, D.K. Ferry, K.H. Kim, J.Y. Lin, and H.X. Jiang, “Field-induced non-equilibrium electron transport in an In0.4Ga0.6N epilayer grown on GaN studied by subpicosecond Raman spectroscopy,” Semiconductor Science and Technology, 19, S427 (2004).
193. * Y. Gong, Y. Gu, Igor L. Kuskovsky, G.F. Neumark, J. Li, J.Y. Lin, H.X. Jiang, and I. Ferguson, “Non-Equilibrium Acceptor Concentration in GaN:Mg Grown by Metalorganic Chemical Vapor Deposition, MRS Proceedings, 798, 491 (2004).
192. * Z. Y. Fan, M.L. Nakarmi, J.Y. Lin, and H.X. Jiang, Delta-Doped AlGaN/GaN Heterostructure Field-Effect Transistors with Incorporation of AlN Epilayers, MRS Proceedings 798, 101 (2004).

191. * Z. Y. Fan, J. Y. Lin, and H. X. Jiang, "Recent Advances in III-Nitride UV Materials and Devices", State-of-the-Art Program on Compound Semiconductors XL (SOTAPOCS XL) and Narrow Bandgap Optoelectronic Materials and Devices II, Proceedings Volume 2004-02.
190. J. Shakya, J. Y. Lin and H. X. Jiang, "Near Field Optical Study of AlGaN/GaN Quantum Well Waveguide," Appl. Phys. Lett. 84 1832 (2004). doi:10.1063/1.1675936
189. C. H. Chen and Y. F. Chen, Z. H. Lan, L. C. Chen, and K. H. Chen, H. X. Jiang and J. Y. Lin, "Mechanism of enhanced luminescence in $In_xAl_yGa_{1-x-y}N$ quaternary epilayers," Appl. Phys. Lett. 84 1480 (2004). doi:10.1063/1.1650549
188. Y. S. Park, K. H. Kim, J. J. Lee, H. S. Kim, T. W. Kang, H. X. Jiang, and J. Y. Lin, "X-ray diffraction analysis of the defect structure in $Al_xGa_{1-x}N$ films grown by metal organic chemical vapor deposition," J. of Mater. Science 39, 1853(2004). doi:10.1023/B:JMSC.0000016202.96505.51
187. N. Nepal, K. B. Nam, M. L. Nakarmi, J. Y. Lin, and H. X. Jiang, J. M. Zavada, and R. G. Wilson, "Optical properties of the nitrogen vacancy in AlN epilayers," Appl. Phys. Lett.84, 1090 (2004). doi:10.1063/1.1648137
186. J. M. Zavada, S. X. Jin, N. Nepal, J. Y. Lin, H. X. Jiang, P. Chow and B. Hertog, "Electroluminescent properties of erbium-doped III-N light emitting diodes," Appl. Phys. Lett. 84, 1061 (2004). doi:10.1063/1.1647271
185. T. N. Oder, K. H. Kim, J. Y. Lin and H. X. Jiang, "III-Nitride Blue and Ultraviolet Photonic Crystal Light Emitting Diodes," Appl. Phys. Lett. 84, 466 (2004). doi:10.1063/1.1644050
184. *W. Liang, K.T. Tsen, D.K. Ferry, K.H. Kim, J.Y. Lin, and H.X. Jiang, "Subpicosecond Raman studies of non-equilibrium electron transport in an In0.4Ga0.6N epilayer grown on GaN," Proc. SPIE (SPIE, Belingham, WA), 5352, 404 (2004).
183. H. X. Jiang and J. Y. Lin, "Carrier Dynamics Probed by Time-Resolved Photoluminescence,"– in "*Ultrafast Dynamics Processes in Semiconductors,*" Book Volume 92 – Topics in Applied Physics, edited by K. T. Tsen, published by Springer-Verlag Berlin, (Berlin Heidelberger, 2004).
182. H. X. Jiang & J. Y. Lin, "AlN Epitaxial Layers for UV Photonics" – Chapter 7 in *Optoelectronic Devices: III-Nitride*, edited by M. Razeghi and M. Heini, published by Elsevier Ltd. (Amsterdam, 2004).
181. * Shih-Wei Feng, Yung-Chen Cheng, En-Chiang Lin, Hsiang-Chen Wang, CC Yang, Kung-Jen Ma, Ching-Hsing Shen, LC Chen, KH Kim, JY Lin, and HX Jiang, "Thermal annealing effects on the optical properties of high-indium InGaN epi-layers," physica status solidi (c), **0**, 2654 (2003).
180. *J. Shakya, K. H. Kim, J. Li, J. Y. Lin, and H. X. Jiang, "III-Nitride Photonic Crystals for Blue and UV Emitters," Symposium Proceedings of Material Research Society Vol. 798, Y4.6.1 (2003).
179. H. X. Jiang, J. Y. Lin, R. Hui, and J. Zavada, "III-nitrides show promise for telecomm wavelengths," Laser Focus World, Nov. issue (2003).
178. J. Li, K. B. Nam, M. L. Nakarmi, J. Y. Lin, H. X. Jiang, Pierre Carrier, and Su-Huai Wei, "Band structure and fundamental optical transitions in wurtzite AlN," Appl. Phys. Lett. 83, 5163 (2003).
177. J. M. Zavada, J. Y. Lin, H. X. Jiang, P. Chow, B. Hertog, U. Hömmerich, Ei Ei Nyein, and H. A. Jenkinson, "Synthesis and optical characterization of erbium-doped III-N double heterostructures," Mater. Sci. Eng. B, Elsevier, B105, 118 (2003).
176. H. D. Sun, R. Macaluso, S. Calvez, M. D. Dawson, F. Robert, A. C. Bryce,J. H. Marsh, P. Gilet, L. Grenouillet, A. Million,K. B. Nam, J. Y. Lin, and H. X. Jiang,"Quantum well intermixing in GaInNAs/GaAs structures," J. Appl. Phys. 94, 7581 (2003).
175. Shih-Wei Feng, En-Chiang Lin, Tsung-Yi Tang, Yung-Chen Cheng, Hsiang-Chen Wang, C. C. Yang, Kung-Jen Ma, Ching-Hsing Shen, L. C. Chen, K. H. Kim, J. Y. Lin, and H. X. Jiang, "Thermal annealing effects on an InGaN film with an average indium mole fraction of 0.31,"Appl. Phys. Lett. 83, 3906 (2003).
174. R. M. Frazier, G. T. Thaler, C. R. Abernathy, S. J. Pearton, M. L. Nakarmi, K. B. Nam, J. Y. Lin, H. X. Jiang,J. Kelly, R. Rairigh, and A. F. Hebard, "Transition metal ion implantation into AlGaN,"J. Appl. Phys. 94, 4956 (2003).

173. K. B. Nam, M. L. Nakarmi, J. Li, J. Y. Lin, and H. X. Jiang, "Photoluminescence studies of Si-doped AlN epilayers,"Appl. Phys. Lett. 83, 2787 (2003).
172. R. Hui, Y. Wan, J. Li, S. X. Jin, J. Y. Lin, and H. X. Jiang," Birefringence of GaN/AlGaN optical waveguides,"Appl. Phys. Lett. 83, 1698 (2003).
171. T. N. Oder, J. Shakya, J. Y. Lin, and H. X. Jiang, "III-nitride photonic crystals," Appl. Phys. Lett. 83, 1231 (2003).
170. K. B. Nam, M. L. Nakarmi, J. Li, J. Y. Lin, and H. X. Jiang, "Mg acceptor level in AlN probed by deep ultraviolet photoluminescence," Appl. Phys. Lett. 83, 878 (2003). PDF
169. R. M. Frazier, J. Stapleton, G. T. Thaler, C. R. Abernathy, S. J. Pearton, R. Rairigh, J. Kelly, A. F. Hebard, M. L. Nakarmi, K. B. Nam, J. Y. Lin, H. X. Jiang, J. M. Zavada and R. G. Wilson, "Properties of Co-, Cr- or Mn-implanted AlN," J. Appl. Phys. 94, 1592 (2003). PDF
168. J. M. Zavada, R. G. Wilson, U. Hommerich, M. Thaik, J. T. Seo, C. J. Ellis, J. Y. Lin, and H. X. Jiang, "Compositional changes in Erbium-implanted GaN films due to Annealing," Journal of Electronic Materials, 32, 382 (2003).
167. B. Guo, K.S. Wong, Z.Z. Ye, H.X. Jiang, and J.Y. Lin, "Dynamics of below-band-gap carrier in highly excited GaN," Chinese Physics Letters 20, 749 (2003).
166. K. H. Kim, J. Li, S. X. Jin, J. Y. Lin, and H. X. Jiang, "III-nitride ultraviolet light-emitting diodes with delta doping," Appl. Phys. Lett. 83, 566 (2003).
165. Young Shin Park, Kun Ho Kim, Jeoung Ju Lee, Hyeon Soo Kim, Tae Won Kang, Hong Xing Jiang and Jing Yu Lin, "Defect Reduction in $Al_xGa_{1-x}N$ Films Grown by Metal Organic Chemical Vapor Deposition," Jpn. J. Appl. Phys. 42, 1231 (2003).
164. *Z. Y. Fan, J. Li, J. Y. Lin, H. X. Jiang, Y. Liu, J. A. Bardwell, J. B. Webb, and H. Tang, AlGaN/GaN Metal-Oxide-Semiconductor Heterostructure Field-Effect Transistors (MOSHFETs) with the Delta-Doped Barrier Layer," Symposium Proceedings of Materials Research Society, 743, 567 (2003).
163. * K. B. Nam, J. Li, M. L. Nakarmi, J. Y. Lin, and H. X. Jiang, "Epitaxial growth and time-resolved photoluminescence studies of AlN epilayers," SPIE Proceedings, 4992, 202 (2003).
162. L. S. Yu, L. Jia, D. Qiao, S. S. Lau, J. Li, J. Y. Lin, and H. X. Jiang, "The origin of leaky characteristics of Schottky diode on p-GaN," IEEE Transaction on Electron Devices, 50, 292 (2003).
161. M. L. Nakarmi, K. H. Kim, J. Li, J. Y. Lin and H. X. Jiang, "Enhanced P-type Conductions in GaN and AlGaN by Mg-Delta-Doping," App. Phys. Lett. 82, 3041 (2003).
160. T. N. Oder, J. Shakya, J. Y. Lin and H. X. Jiang "Nitride Microlens Arrays for Blue and UV Wavelength Applications, Appl. Phys. Lett. 82, 3692 (2003).
159. H. X. Jiang and J. Y. Lin, "Advances in III-Nitride Microstructures and Micro-Size Emitters," J. of the Korean Physical Society, 42, S757 (2003).
158. J. Y. Lin and H. X. Jiang, "Recent Advances in III-Nitride Ultraviolet Photonic Materials and Devices," J. of the Korean Physical Society, 42, S535 (2003).
157. C. H. Chen, D. R. Hang, W. H. Chen, Y. F. Chen, H. X. Jiang and J. Y. Lin, "Persistent Photoconductivity in $In_xAl_yGa_{1-x-y}N$ quaternary alloys," Appl. Phys. Lett. 82, 1884 (2003).
156. K.B. Nam, J. Li, M. L. Nakarmi, J. Y. Lin and H. X. Jiang, "Deep ultraviolet picosecond time-resolved photoluminescence studies of AlN epilayers," Appl. Phys. Lett. 82, 1694 (2003).
155. W. Liang, K. T. Tsen, D. K. Ferry, K. H. Kim, J. Y. Lin, and H. X. Jiang, "Studies of field-induced non-equilibrium electron transport in an InxGa1-xN (x»0.6) epilayer grown on GaN," Appl. Phys. Lett. 82, 1413 (2003).
154. Shih-Wei Feng, Yung-Chen Cheng, Yi-Yin Chung, C. C. Yang, Kung-Jeng Ma, Chih-Chiang Yan, Chen Hsu, J. Y. Lin, and H. X. Jiang, "Strong green luminescence in quaternary InAlGaN thin films," Appl. Phys. Lett. 82, 1377 (2003).
153. R. Hui, S. Taherion, Y. Wan, J. Li, S.X. Jin, J. Y. Lin, and H. X. Jiang, "GaN-based waveguide devices for long wavelength optical communications," Appl. Phys. Lett. 82, 1326 (2003).

152. * J. Y. Lin and H. X. Jiang, “III-Nitride Ultraviolet Photonic Materials – Epitaxial Growth, Optical and Electrical Properties, and Applications,” Proceedings of SPIE on Quantum Sensing, 4999, 287 (2003), *invited*.
151. H. X. Jiang & J. Y. Lin, “III-Nitride Quantum Devices – Microphotonics,” CRC Critical Reviews in Solid State and Materials Sciences, (P. Holloway, Editor), 28, 131 (2003), *invited*.
150. J. Li, T. N. Oder, M. L. Nakarmi, J. Y. Lin, and H. X. Jiang, "Optical and Electrical Properties of Mg-doped p-type AlGaN," Appl. Phys. Lett. 80, 1210 (2002).
149. Z. Y. Fan, J. Li, J. Y. Lin, and H. X. Jiang,"Delta-doped AlGaN/GaN metal oxide semiconductor heterostructure field effect transistors with high breakdown voltages," Appl. Phys. Lett. 81, 4649 (2002).
148. J. Li, K. B. Nam, M. L. Nakarmi, J. Y. Lin, and H. X. Jiang, "Band-edge Photoluminescence of AlN Epilayers," Appl. Phys. Lett. 81, 3365 (2002).
147. K.B. Nam, J. Li, M. L. Nakarmi, J. Y. Lin and H. X. Jiang, "Growth and Optical Studies of Two-Dimensional Electron Gas of Al-rich AlGaN/GaN Heterostructures," Appl. Phys. Lett. 81, 1809 (2002).
146. X. A. Cao, S. F. LoBoeuf, K. H. Kim, P. Sandvik, E. B. Stokes, A. Ebong, D. Walker, J. Kretchmer, J. Y. Lin, and H. X. Jiang, "Investigation of radiative tunneling in GaN/InGaN single quantum well light-emitting diodes," Solid-State Electronics, 46, 2291 (2002).
145. K. B. Nam, J. Li, M. L. Nakarmi, J. Y. Lin, and H. X. Jiang, "Achieving highly conductive AlGaN alloys with high Al contents," Appl. Phys. Lett. 81, 1038 (2002).
144. *T. N. Oder, J. Li, J. Y. Lin, and H. X. Jiang,"Exciton-polariton propagation in AlGaN/GaN quantum-well waveguides probed by time-resolved photoluminescence", Proceeding of SPIE 4643, 258 (2002).
143. *J. Li K. B. Nam, T. N. Oder, K. H. Kim, M. L. Nakarmi, J. Y. Lin, and H. X. Jiang, "Time-resolved photoluminescence studies of Al-rich AlGaN alloys," Proceeding of SPIE, 4643, 250 (2002).
142. H. X. Jiang, J. Y. Lin, and W. W. Chow “Time-Resolved Photoluminescence Studies of III-Nitrides,” Chapter 1 in "Optical Properties of III-Nitrides I" edited by M .O. Manasreh and H. X. Jiang, (Taylor & Francis Books, New York & London 2002).
141. H. X. Jiang and J. Y. Lin, “AlGaN and InAlGaN Alloys – Epitaxial Growth, Optical and Electrical Properties, and Applications,” in a special issue of Opto-Electronics Review, 10, 271 (2002), *invited*.
140. M. E. Aumer, S. F. LeBoeuf, B. F. Moody, S. M. Bedair,K. Nam, J. Y. Lin, and H. X. Jiang"Effects of tensile, compressive, and zero strain on localized states in AlInGaN/InGaN quantum-well structures", Appl. Phys. Lett. 80, 3099 (2002).
139. G. Coli, K. K. Bajaj, J. Li, J. Y. Lin and H. X. Jiang, "Exciton Luminescence Linewidth in AlGaN Alloys with High Aluminum Concentrations", Appl. Phys. Lett. 80, 2907 (2002).
138. H. X. Jiang, J. Y. Lin, and W. W. Chow “Time-Resolved Photoluminescence Studies of III-Nitrides,” Chapter 1 in *"Optical Properties of III-Nitrides I" edited by* M.O. Manasreh and H. X. Jiang, (Taylor & Francis Books, New York & London 2002).
137. C. H. Chen, Y. F. Chen, H. X. Jiang, and J. Y. Lin, "Mechanism of photoluminescence in GaN/AlGaN quantum wells"," Appl. Phys. Lett. 79, 3806 (2001).
136. J. Li, K. B. Nam, J. Y. Lin, and H. X. Jiang, "Optical and Electrical Properties of Al rich AlGaN Alloys," Appl. Phys. Lett. 79, 3245 (2001).
135. T.N. Oder, J.Y. Lin and H.X. Jiang, "Light Propagation properties in AlGaN/GaN Quantum Well Waveguides," Appl. Phys. Lett. 79, 2511 (2001).
134. D. R. Hang, C. H. Chen, Y. F. Chen, H. X. Jiang, and J. Y. Lin, "AlGaN/GaN band offset determined by deep level emission" J. Appl. Phys. 90, 1887 (2001).
133. Dai Lun, Zhang Bei, Lin Jingyu, and Jiang Hongxing, "Properties of optical resonant modes in III-Nitride semiconductor micro-cone cavities," Chinese Phys. Lett. 18, 437 (2001).
132. D. R. Hang, C. T. Liang, C. F. Huang, Y. H. Chang, Y. F. Chen, H. X. Jiang, and J. Y. Lin, “Effective mass of 2DEG in GaN/AlGaN heterostructure,” Appl. Phys. Lett. 79, 66 (2001). PDF

131. H. X. Jiang and J. Y. Lin, “Advances in III-Nitride Micro-Size Light Emitters,” invited feature article for III-Vs Review, June/July 2001 issue.
130. H. X. Jiang and J. Y. Lin, “Microdisplays Based on III-Nitride Wide Band Gap Semiconductors,” invited feature article for oe magazine (The Monthly Publication of SPIE-The internal Society for Optical Engineering), July 2001 issue; *invited*.
129. T.N. Oder, J.Y. Lin and H.X. Jiang, “Fabrication and Optical Characterization of III-Nitride Sub-micron Waveguides,” Appl. Phys. Lett. 79, 12 (2001).
128. S. X. Jin, J. Shakya, J. Y. Lin, and H. X. Jiang, “Size Dependence of III-Nitride Microdisk Light Emitting Diode Characteristics,” Appl. Phys. Lett. 78, 3532 (2001).
127. L. Dai, B. Zhang, J. Y. Lin, and H. X. Jiang, “Comparison of Optical Transitions in InGaN Quantum Well Structures and Microdisks,” J. Appl. Phys. 89, 4951 (2001).
126. K. B. Nam, J. Li, K. H. Kim, J. Y. Lin, and H. X. Jiang, “Growth and Deep UV Picosecond Time-Resolved Photoluminescence Studies of GaN/AlN Multiple Quantum Wells,” Appl. Phys. Lett. 78, 3690 (2001).
125. H. X. Jiang, S. X. Jin, J. Li, J. Shakya, and J. Y. Lin, “III-Nitride Blue Microdisplays,” Appl. Phys. Lett. 78, 1303 (2001).
124. G. Coli, K. K. Bajaj, J. Li, J. Y. Lin, and H. X. Jiang, “Linewidths of Excitonic Luminescence Transitions in AlGaN Alloys,” Appl. Phys. Lett. 78, 1829 (2001).
123. * T.N. Oder, J. Li, J.Y. Lin and H.X. Jiang, “Fabrication and Characterization of $In_xAl_yGa_{1-x-y}N$ Ultraviolet Detectors,” Symposium Proceedings of Materials Research Society, 2000.
122. * J. Li, K. B. Nam, K. H. Kim, T. N. Oder, H. J. Jun, J. Y. Lin, and H. X. Jiang, “Growth and Optoelectronic Properties of III-Nitride Quaternary Alloys,” Proceedings of SPIE, 4280, 27 (2001).
121. * J. Li, K. C. Zeng, E. J. Shin, J. Y. Lin, and H. X. Jiang, “Optimizing GaN/AlGaN Multiple Quantum Well Structures by Time-Resolved Photoluminescence,” Proceedings of SPIE 4280, 70 (2001).
120. C. J. Ellis, R. M. Mair, J. Li, J. Y. Lin, H. X. Jiang, J. M. Zavada, and R. G. Wilson, “Optical Properties of pr Implanted GaN Epilayers and AlGaN Alloys,” Materials Science & Engineering B - Solid State Materials for Advanced Technology 81, 167 (2001).
119. J.M. Zavada, C. J. Ellis, J. Y. Lin, H. X. Jiang, J. T. Seo, U. Hommerich, M. Thaik, R. G. Wilson, P. A. Grudowski, and R. D. Dupuis, “Annealing behavior of luminescence from erbium-implanted GaN,” Materials Science & Engineering B - Solid State Materials for Advanced Technology 81, 127 (2001).
118. *H. X. Jiang and J. Y. Lin, “Advances in III-Nitride Micro-Photonic Devices,” IEEE/LEOS Annual Meeting Conf. Proc. 2, 758, (2001).
117. H. X. Jiang and J. Y. Lin, Book Review for “Properties of Advanced Semiconductor Materials: GaN, AlN, InN, BN, SiGe, by Michael E. Levinshtein, Serge L. Rumyantsev, and Michael S. Shur, Eds (John Wiley & Sons, New York, 2001), MRS Bulletin, Vol. 26, 728 (2001).
116. H. X. Jiang and J. Y. Lin, “Persistent photoconductivity in III-nitrides,” Chapter 5 in "III-Nitride Semiconductors: Electrical, Structural and Defects Properties" edited by M. O. Manasreh, (Elsevier Science, 2000).
115. W. H. Sun, S. T. Wang, J. C. Zhang, K. M. Chen, G. G. Qin, Y. Z. Tong, Z. J. Yang, G. Y. Zhang, Y. M. Pu, Q. L. Zhang, J. Li, J. Y. Lin, and H. X. Jiang, “Formation and dissolution of microcrystalline graphite in carbon-implanted GaN,” J. Appl. Phys. 88, 5662 (2000).
114. S. X. Jin, J. Li, J. Y. Lin, and H. X. Jiang, “InGaN/GaN Quantum Well Interconnected Microdisk Light Emitting Diodes,” Appl. Phys. Lett. 77, 3236 (2000).
113. J. Z. Li, J. Y. Lin, H. X. Jiang, and G. Sullivan, “Transient Characteristics of AlGaN/GaN Heterojunction Field Effect transistors,” Appl. Phys. Lett. 77, 4046 (11 Dec 2000).
112. J. Li, K.B. Nam, K. Kim, J.Y. Lin, and H.X. Jiang. "Growth and optical properties of InAlGaN Quaternary Alloy." Applied Physics Lett. 78, 61 (2001).

111. M.E. Aumer, S.F. Leboeuf, S.M. Bedair, M. Smith, J.Y. Lin, and H.X. Jiang "Effects of tensile and compressive strain on the luminescence properties of AlInGaN/InGaN quantum well structures" Appl. Phys. Lett. 77, 821 (2000).
110. Eun-joo Shin, J. Li, J. Y. Lin, and H. X. Jiang, "Barrier Width Dependence of Quantum Efficiencies of GaN/$Al_xGa_{1-x}N$ Multiple Quantum Wells," Appl. Phys. Lett. 77, 1170 (2000).
109. C.H. Wei, Z. Y. Xie, J.H. Edgar, K.C. Zeng, Y.Y. Lin, H.X. Jiang, J. Chaudhuri, C. Ignatiev, and D.N.Braski, "MOCVD Growth of BGaN on 6H-SiC (0001) Substrates," J. Electron. Mater.29, 452 (2000).
108. * H.S. Kim, R.A.Mair, J. Li, Y. Lin, H.X. Jiang, "Exciton Localization Dynamics in AlGaN Alloys," Proceeding of Society of Photo-Optical Instrumentation Engineers (SPIE), Vol 3940, 139 (2000).
107. *K.T. Tsen, C. Koch, Y. Chen, H.Morkoe, J. Li, J.Y. Lin, H.X. Jiang, "Electronic Raman Scattering From Mg-doped Wurtzite GaN," Symposium Proceedings of Materials Research Society, Vol. 595 W11.12.1 .
106. * J.Z. Li, J. Li, J.Y. Lin, and H.X. Jiang, "Correlation between Sheet Carrier Density and Mobility Product and Persistent Photoconductivity in AlGaN/GaN Heterostructures, "Symposium Proceedings of Material Research Society Vol. 595 W11.12.1
105. T. N. Oder, J. Li, J. Y. Lin, and H. X. Jiang, "Photoresponsivity of ultraviolet detectors based on InAlGaN quaternary," Appl. Phys. Lett. 77, 791 (2000).
104. K.C. Zeng, J.Z. Li, J. Li, J.Y. Lin, and H.X. Jiang, "Well-width dependence of the quantum efficiencies of GaN/$Al_xGa_{1-x}N$ multiple quantum wells" Appl. Phys. Lett. 76, 3040 (2000).
103. K.T. Tsen, C. Koch, Y.Chen, H. Morkoc, J.Z. Li, J. Li, J.Y. Lin, and H.X. Jiang, " Observation of electronic Raman scattering from Mg-doped wurtzite GaN" Appl. Phys. Lett. 76, 2889 (2000).
102. K.C. Zeng, J. Li, J.Y. Lin, and H.X. Jiang, "Optimizing Growth Conditions for GaN/AlGaN Multiple Quantum Well Structures," Appl. Phys. Lett. 76, 864 (2000).
101. H.S. Kim, R.A. Mair, J. Li, J.Y. Lin and H.X. Jiang, "Time-Resolved Photoluminescence Studies of $Al_xGa_{1-x}N$ Alloys," Appl. Phys. Lett. 76, 1252 (2000).
100. K.C. Zeng, J.Y. Lin, and H.X. Jiang, "Effects of Alloy Disorder on the Transport Properties of $Al_xGa_{1-x}N$ Epilayers Probed by Persistent Photoconductivity," Appl. Phys. Lett. 76, 1728 (2000).
99. S.X. Jin, J. Li, J.Z. Li, J.Y. Lin and H.X. Jiang, "GaN Microdisk Light Emitting Diodes," Appl. Phys. Lett. 76, 631 (2000).
98. D. Qiao, L.S. Yu, S.S. Lau, J. Redwing, J.Y. Lin, and H.X. Jiang, "Dependence of Ni/AlGaN Schottky Barrier Height on Al Mode Fraction," J. Appl. Phys. 87, 801 (2000).
97. R.A. Mair, J.Y. Lin, H.X. Jiang, E.D. Jones, A.A. Allerman, and S.R. Kurtz, "Time-Resolved Photoluminescence Studies of $In_xGa_{1-x}As_{1-y}Ny$," Appl. Phys. Lett. 76, 188 (2000).
96. D. Qiao, L. S. Yu, S. S. Lau, J. Y. Lin, H. X. Jiang and T. E. Haynes, "A study of the Au/Ni Ohmic contact on p-GaN," J. Appl. Phys. 88, 4196 (2000).
95. Hyeon Soo Kim, Robin Mair, Jin Li, Jingyu Lin and Hongxing Jiang, "Optical Characterization of $Al_xGa_{1-x}N$ Alloys Grown by MOCVD," J. Korean Physical Society, 37, 391, (2000).
94. * H.S. Kim, H.X. Jiang, J.Y. Lin, W.W. Chow, A. Botchkarev, and H. Morkoc, "Piezoelectric Effects on the Dynamics of Optical Transitions in GaN/AlGaN Multiple Quantum Wells," Proceeding of Society of Photo-Optical Instrumentation Engineers (SPIE), Vol 3624, 198 (1999).
93. J.Z. Li, H.X. Jiang, J.Y. Lin, J.F. Geisz, and Sarah R. Kurtz, "Persistent Photoconductivity in $Ga_{1-x}In_xNyAs_{1-y}$" Appl. Phys. Lett. 75, 1899 (1999).
92. M.O Manasreh, J.M. Baronowsky, K. Pakula, H.X. Jiang, and J.Y. Lin, "Localized Vibrational Modes of Carbon-Hydrogen Complexes in GaN," Appl. Phys. Lett. 75, 659 (1999).
91. J.M. Zavada, R.A. Mair, C.J. Ellis, H.X. Jiang, J.Y. Lin, and R.G. Wilson, "Optical Transitions in Pr Ion-Implanted GaN," Appl. Phys. Lett. 75, 790 (1999).
90. * H.X. Jiang and J.Y. Lin, "Optical properties of III-nitride microstructures," Proceeding of Society of Photo-Optical Instrumentation Engineers (SPIE), (1999), *invited*.
89. H.X. Jiang, J.Y. Lin, K.C. Zeng, and W. Yang, "Optical resonance modes in GaN pyramid Microcavities, Appl. Phys. Lett. 75, 763 (1999).

88. K.C. Zeng, L. Dai, J.Y. Lin, and H.X. Jiang, "Optical resonance mode in InGaN/GaN multiple-quantum-well microring cavities," Appl. Phys. Lett. 75, 2563 (1999).
87. L.S. Yu, D. Qiao, S. S. Lau, J. M. Redwig, J.Y. Lin, and H.X. Jiang, "Measurement of the Al mole fraction of bulk AlGaN and AlGaN/GaN Heterostructure by photoconductance spectra," J. Appl. Phys. (Sept. 1, 1999).
86. K.C. Zeng, J. Y. Lin, H. X. Jiang, and W. Yang, "Optical properties of high-quality insulating GaN epilayers," Appl. Phys. Lett. 74, 3821 (1999).
85. K.C. Zeng, J. Y. Lin, H. X. Jiang, and W. Yang, "Optical Properties of GaN Pyramids," Appl. Phys. Lett. 74, 1227 (1999).
84. H. X. Jiang and J. Y. Lin, "Mode Spacing Anomaly in InGaN Blue Lasers," Appl. Phys. Lett. 74, 1066 (1999).
83. R. Mair, J. Li, S. K. Duan, J. Y. Lin, and H. X. Jiang, "Time-Resolved Photoluminescence of an Ionized Donor-Bound Exciton in GaN," Appl. Phys. Lett. 74, 513 (1999).
82. *C. H. Wei, Z. Y. Xie, J. H. Edgar, K. C. Zeng, J. Y. Lin, H. X. Jiang, G. Jiji, J. Chaudhuri, and D. N. Braski, "Growth and Characterization of $B_xGa_{1-x}N$ on 6H-SiC (0001)," MRS Internet J. Nitride Semicond. Res. 4S1, G3.79 (1999).
81. *H.S. Kim, J. Y. Lin, H. X. Jiang, W. W. Chow, A. Botchkarev, and H. Morkoc "Piezoelectric effects in GaN/AlGaN Multiple Quantum Wells Probed by Picosecond Time-Resolved Photoluminescence," MRS Internet J. Nitride Semicond. Res. 4S1, G3.3 (1999).
80. *J.M. Zavada, M. Thaik, U. Hommerich, J. D. MacKenzie, C. R. Abernathy, F. Ren, H. Shen, J. Pamulapati, H. X. Jiang, J. Y. Lin, and R. G. Wilson, "Luminescence from Er-Doped GaN Thin Films," MRS Internet J. Nitride Semicond. Res. 4S1, G11.1 (1999), *invited*.
79. *H. Morkoc R. Cingolani, W. Lambrecht, B. Gil, H. X. Jiang, J. Lin, D. Pavlidis, and K.Shenai "Material Properties of GaN in the Context of Electron Devices," MRS Internet J. Nitride Semicond. Res. 4S1, G1.2 (1999), *invited*.
78. H. Morkoc R. Cingolani, W. Lambrecht, B. Gil, H. X. Jiang, J. Lin, and D. Pavlidis "Spontaneous Polarization and Piezoelectric Field in Nitride Semiconductor Heterostructures", J. of the Korean Physical Society, 34 S224-S233 (1999), *invited*.
77. H. X. Jiang and J. Y. Lin, "Persistent Photoconductivity in GaN," A3.6 in Gallium Nitride and Related Compounds, EMIS Datareview Series, Edited by J. Edgar, S. Strite, I. Akasaki, H. Amano, and C. Wetzel, (The Institute of Electrical Engineers, London, 1999).
76. H. X. Jiang and J. Y. Lin, "Time-Resolved Photoluminescence Studies of GaN," A3.5 in Gallium Nitride and Related Compounds, EMIS Datareview Series, Edited by J. Edgar, S. Strite, I. Akasaki, H. Amano, and C. Wetzel, (The Institute of Electrical Engineers, London, 1999).
75. * J. Z. Li, J. Li, J. Y. Lin, and H. X. Jiang, "Correlation Between Sheet Carrier Density and Mobility Product and Persistent Photoconductivity in AlGaN/GaN Heterostructures," Material Research Society Symposium Proceedings, Vol. 595 W11.12.1, Fall (1999).
74. H.S. Kim, J. Y. Lin, H. X. Jiang, W. W. Chow, A. Botchkarev, and H. Morkoc, "Piezoelectric Effects on the Optical Properties of GaN/AlGaN Multiple Quantum Wells," Appl. Phys. Lett. 73, 3426 (1998).
73. D.N. McIlroy, S.D. Hwang, K. Yang, N. Remmes, P.A. Dowben, A.A. Ahmad, N.J. Ianno, J. Z. Li, J. Y. Lin, and H. X. Jiang, "The Incorporation of Nickel and Phosphorus Dopants Unto Boron-Carbon Alloy Thin Films," Appl. Phys. A67, 335 (1998).
72. K.C. Zeng, R. Mair, J. Y. Lin, H. X. Jiang, W. W. Chow, A. Botchkarev, and H. Morkoc, Appl. Phys. Lett., "Plasma Heating in Highly Excited GaN/AlGaN Multiple Quantum Wells," Appl. Phys. Lett. 73, 2476 (1998).
71. K.C. Zeng, J. Y. Lin, and H. X. Jiang, "Collective Effects of Interface Roughness and Alloy Disorder in InGaN/GaN Multiple Quantum Wells," Appl. Phys. Lett. 73, 1724 (1998).
70. H. B. Yu, H. Htoon, A. Delozanne, C. K. Shih, P.A. Grudowski, R. D. Dupuis, K.C. Zeng, R. Mair, J. Y. Lin, and H. X. Jiang "Dynamics of localized excitons in InGaN/GaN quantum," J. Vac. Sci. & Tech. B16, 2215 (1998).

69. J.Z. Li, J. Y. Lin, H. X. Jiang, and M. A. Khan, "Effects of Persistent Photoconductivity on the Characteristic Performance of an AlGaN/GaN Heterostructure Ultraviolet Detector," Appl. Phys. Lett. 72, 2868 (1998).
68. R. Mair, K. C. Zeng, J. Y. Lin, H. X. Jiang, B. Zhang, L. Dai, W. Kim, A. Botchkarevand, H. Morkoc, and M. Asif Khan, "Optical Modes Within III-Nitride Multiple Quantum Well Microdisk Cavities," Appl. Phys. Lett. 72, 1530 (1998).
67. *H.X. Jiang and J. Y. Lin, "Dynamics of Fundamental Optical transitions in GaN," Proceeding of Society of Photo-Optical Instrumentation Engineers (SPIE), Vol 3277, 108 (1998), *invited*.
66. * K.C. Zeng, M. Smith, J. Y. Lin, H. X. Jiang, H. Morkoc, and M. Asif Khan, "Optical Transitions and Dynamic Processes in III-Nitride Epilayers and Multiple Quantum Wells," IEEE International Symposium on Compound Semiconductors, edited by Mike Melloch and Mark Reed, p235, 1998 IEEE.
65. * R. Mair, K.C. Zeng, J. Y. Lin, H. X. Jiang, B. Zhang, L. Dai, H. Tang, W. Kim, A. Botchkarevand, H. Morkoc, and M. Asif Khan, "Photoluminescence Properties of GaN/AlGaN Multiple Quantum Well Micro-disks," Symposium Proceedings of Materials Research Society, Vol 482, 649 (1998).
64. * K.C. Zeng, M. Smith, J. Y. Lin, H. X. Jiang, H. Morkoc, and M. Asif Khan, "Well Thickness and Doping Effects, and Room Temperature Emission Mechanisms in InGaN/GaN and GaN/AlGaN Multiple Quantum Wells," Symposium Proceedings of Materials Research Society, Vol 482, 643 (1998).
63. R. Mair, K.C. Zeng, J. Y. Lin, H. X. Jiang, B. Zhang, L. Dai, H. Tang, W. Kim, A. Botchkarevand and H. Morkoc, "Optical Properties of GaN/AlGaN Multiple Quantum Well Micro-disks," Appl. Phys. Lett. 71, 2898 (1997).
62. * J. Z. Li, J. Y. Lin, H. X. Jiang, A. Khan, Q. Chen, A. Salvador, A. Borchkarev, and H. Morkoc, "Persistent Photoconductivity in p-Type GaN Epilayers and n-type AlGaN/GaN Heterostructures," Symposium Proceedings of Materials Research Society, Fall, 1996, Vol. 449, 537(1997).
61. * M. Smith, J. Y. Lin, H. X. Jiang, A. Khan, Q. Chen, A. Salvador, A. Borchkarev, and H. Morkoc, "Optical Transitions and Recombination Lifetimes in GaN and InGaN Epilayers, and InGaN/GaN and GaN/AlGaN Multiple Quantum Wells," Symposium Proceedings of Materials Research Society, Vol 449, 829 (1997).
60. K.C. Zeng, J. Y. Lin, H. X. Jiang, A. Salvador, G. Popovici, H. Tang, W. Kim, and H. Morkoc, "Effects of Well Thickness and Si-Doping on the Optical Properties of GaN/AlGaN Multiple Quantum Wells," Appl. Phys. Lett. 71, 1368 (1997).
59. K.C. Zeng, M. Smith, J. Y. Lin, H. X. Jiang, J. C. Robert, E. L. Piner, F. G. McIntosh, S. M. Bedair, and J. Zavada, "Optical Transitions in InGaN/AlGaN Single Quantum Wells," J. Vac. & Sci. Tech. B15, 1139 (1997).
58. J. Z. Li, J. Y. Lin, H. X. Jiang, M. Asif Khan, and Q. Chen, "Two-Dimensional Electron Gas in AlGaN/GaN Heterostructure," J. Vac. & Sci. Tech. B15, 1117 (1997).
57. J.Z. Li, J. Y. Lin, H. X. Jiang, M. Asif Khan, and Q. Chen, "Persistent Photo-conductivity and Two-Dimensional Electron Gas in AlGaN/GaN Heterostructures," J. Appl. Phys. 82, 1227 (1997). PDF
56. M. Smith, J. Y. Lin, H. X. Jiang, and A. Khan, "Room Temperature Intrinsic Optical Transitions in GaN Epilayers: the Band-to-Band versus Excitonic Transition," Appl. Phys. Lett. 71, 635 (1997).
55. M. Smith, J. Y. Lin, H. X. Jiang, A. Khan, Q. Chen, A. Salvador, A. Borchkarev, and H. Morkoc, "Exciton-Phonon Interactions in InGaN/GaN and GaN/AlGaN Multiple Quantum Wells," Appl. Phys. Lett. 70, 2882 (1997).
54. R.J. Bandaranayake, J. Y. Lin, H. X. Jiang, and C. M. Sorensen, "Synthesis and Properties of $Cd_{1-x}Mn_xS$ Diluted Magnetic Semiconductor Ultrafine Particles," J. of Magnetism & Magnetic Materials, 169, 289 (1997).
53. C.J. Sun, M. Zubair Anwar, Q. Chen, J. W. Yang, M. Asif Khan, M. S. Shur, A. D. Bykhovski, Z. Liliental-Weber, C. Kisielowski, M. Smith, J. Y. Lin, and H. X. Jiang, "Quantum Shift of Band-Edge Stimulated Emission in InGaN-GaN Multiple Quantum Well Light-Emitting Diodes," Appl. Phys. Lett. 70, 2978 (1997).

52. S.D. Hwang, K. Yang, P. A. Dowben, A. A. Ahmad, N. J. Ianno, J. Z. Li, J. Y. Lin, H. X. Jiang, and D. N. Mcllroy, "Fabrication of n-Type Nickel Doped B5C1+d Homojunction and Heterojunction Diodes," Appl. Phys. Lett. 70, 1028 (1997).
51. H.X. Jiang, J. Y. Lin, M. Asif Khan, Q. Chen, and J. W. Yang, "Surface Emission of $In_xGa_{1-x}N$ Epilayers under Strong Optical Excitation," Appl. Phys. Lett. 70, 984 (1997).
50. M. Smith, J. Y. Lin, H. X. Jiang, A. Salvador, A. Botchkarev, H. Kim, and H. Morkoc "Optical Transitions in $GaN/Al_xGa_{1-x}N$ Multiple Quantum Wells Grown by Molecular Beam Epitaxy," Appl. Phys. Lett. 69, 2453 (1996).
49. M. Smith, G. D. Chen, J. Y. Lin, H. X. Jiang, M. Asif Khan, and Q. Chen, "Time-Resolved Photoluminescence Studies of InGaN Epilayers," Appl. Phys. Lett. 69, 2837 (1996).
48. J.Z. Li, J. Y. Lin, H. X. Jiang, A. Salvador, A. Botchkarev, and H. Morkoc, "Nature of Mg Impurities in GaN," Appl. Phys. Lett. 69, 1474 (1996).
47. M. Smith, J. Y. Lin, and H. X. Jiang, "Disorder and Persistent Photoconductivity in ZnxCd1-xSe Semiconductor Alloys," Phys. Rev. B54, 1471 (1996).
46. M. Smith, G. D. Chen, J. Y. Lin, H. X. Jiang, M. Asif Khan, and C. J. Sun, "Free Excitonic Transitions in GaN Grown by Metal-Organic Chemical Vapor Deposition," J. Appl. Phys. 79, 7001 (1996).
45. G. D. Chen, M. Smith, J. Y. Lin, H. X. Jiang, S.-H. Wei, M. Asif Khan, and C. J. Sun, "Fundamental Optical Transitions in GaN," Appl. Phys. Lett. 68, 2784 (1996).
44. G. D. Chen, J. Y. Lin, and H. X. Jiang, "Effects of Electron Mass Anisotropy on Hall Factors in 6H-SiC," Appl. Phys. Lett. 68, 1341 (1996).
43. C. Johnson, J. Y. Lin, H. X. Jiang, M. Asif Khan, and C. J. Sun, "Metastability and Persistent Photoconductivity in Mg-Doped P-type GaN," Appl. Phys. Lett. 68, 1808 (1996).
42. M. Smith, G. D. Chen, J. Y. Lin, H. X. Jiang, A. Salvador, W. Kim, O. Aktas, A. Botchkarev, and H. Morkoc, "Mechanisms of Band-Edge Emissions in Mg-Doped P-type GaN," Appl. Phys. Lett. 68, 1883 (1996).
41. G.D. Chen, M. Smith, J. Y. Lin, H. X. Jiang, A. Salvador, B. N. Sverdlov, A. Botchkarev, and H. Morkoc, "Photoluminescence Studies of Band-Edge Transitions in GaN Epitaxial Layers Grown by Molecular Beam Epitaxy," J. Appl. Phys. 79, 2675 (1996).
40. * H. Morkoc, W. Kim, O. Aktas, A. Salvador, A. Botchkarev, D. C. Reynolds, D. C. Look, M. Smith, G. D. Chen, J. Y. Lin, H. X. Jiang, T. J. Schmidt, X. H. Yang, W. Shan, and J. J. Song, "Optical Properties of Mg-GaN, GaN/AlGaN SCH Structures, and GaN on ZnO Substrates," Symposium Proceedings of Materials Research Society, 395, p527, 1996, *invited*.
39. M. Smith, G. D. Chen, J. Z. Li, J. Y. Lin, H. X. Jiang, A. Salvador, W. Kim, O. Aktas, A. Botchkarev, and H. Morkoc, "Excitonic Recombination in GaN Grown by Molecular Beam Epitaxy," Appl. Phys. Lett. 67, 3387 (1995).
38. M. Smith, G. D. Chen, J. Y. Lin, H. X. Jiang, M. Asif Khan, and C. J. Sun, "Acceptor-Bound Exciton Recombination in p-type GaN," Appl. Phys. Lett. 67, 3295 (1995).
37. G.D. Chen, M. Smith, J. Y. Lin, H. X. Jiang, M. Asif Khan, and C. J. Sun, "Neutral-Donor-Bound Exciton Recombination Dynamics in GaN Grown by Metal- Organic Chemical Vapor Deposition," Appl. Phys. Lett. 67, 1653 (1995).
36. M. Smith, G. D. Chen, J. Y. Lin, H. X. Jiang, A. Salvador, B. N. Sverdlov, A. Botchkarev, and H. Morkoc, "Dynamics of a Band-Edge Transition in GaN Grown by Molecular Beam Epitaxy," Appl. Phys. Lett. 66, 3474 (1995).
35. R.J. Bandaranayake, G. W. Wen, J. Y. Lin, H. X. Jiang, and C. M. Sorensen, "Structural Phase Behavior in II-VI Semiconductor Quantum Dots," Appl. Phys. Lett. 67, 831 (1995).
34. G.W. Wen, J. Y. Lin, and H. X. Jiang, "Quantum-Confined Stark Effects in Semiconductor Quantum Dots," Phys. Rev. B52, 5913 (1995).
33. R.J. Bandaranayake, J. Y. Lin, H. X. Jiang, and C. M. Sorensen, "Structure and Spin-Glass Properties of $Cd_{0.5}Mn_{0.5}S$ Diluted Magnetic Semiconductor Quantum Dots," IEEE, Transactions on Magnetics, 31, 3761 (1995).

32. *M. Smith, J. Y. Lin, and H. X. Jiang, "Transport Properties due to Alloy Disorder in $Zn_xCd_{1-x}Se$," Proc. of 22nd International Conference on the Physics of Semiconductors 3, 1827 (1995).
31. * A. Dissanayake, W. Hein, J. Y. Lin, and H. X. Jiang, "Exciton Dynamics and Quantum- Confined Stark Effects in $CdS_{1-x}Se_x$ Quantum Dots," Proc. of 22nd International Conference on the Physics of Semiconductors, 1, 85 (1995).
30. M. Smith, J. Y. Lin, and H. X. Jiang, "Metal-Insulator Transition in Semiconductor Alloys Probed by Persistent Photoconductivity," Phys. Rev. B51, 4132, (1995).
29. A.S. Dissanayake, J. Y. Lin, and H. X. Jiang, "Quantum-Confined Stark Effects in $CdS_{1-x}Se_x$ Quantum Dots," Phys. Rev. B51, 5457, (1995).
28. A. S. Dissanayake, J. Y. Lin, H. X. Jiang, Z. J. Yu, and J. H. Edgar, "Low Temperature MOCVD Epitaxial Growth and Photoluminescence Characterization of GaN," Appl. Phys. Lett. 65, 2317 (1994).
27. R. J. Bandaranayake, M. Smith, J. Y. Lin, H. X. Jiang, and C. M. Sorensen, "Synthesis and Properties of $Cd_{1-x}Mn_xS$ Diluted Magnetic Semiconductor Nanoparticles," IEEE Trans. on Magnetics, 30, 4930 (1994).
26. P. Staikov, D. Baum, J. Y. Lin, and H. X. Jiang, "Evidence for Bistable Defects in 6H-SiC," Solid State Commun. 89, 995 (1994).
25. * P. Staikov, D. Baum, J. Y. Lin, and H. X. Jiang, "Persistent Photoconductivity and Carrier Mobility in Nitrogen Doped 6H-SiC," Proc. of Inter. Conf. on SiC and Related Materials, p235 (1994).
24. A. Dissanayake, J. Y. Lin, and H. X. Jiang, "Persistent Photoconductivity in $Zn_{0.043}Cd_{0.96}Te$ Semiconductor Thin Films," Phys. Rev. B 48, 8145 (1993).
23. J. Y. Lin, A. Dissanayake, and H. X. Jiang, "DX Centers in $Al_{0.34}Ga_{0.66}As$ Amorphous Thin Films," Solid State Commun. 87, 787 (1993).
22. J. Y. Lin, A. Dissanayake, and H. X. Jiang, "Electric-Field-Enhanced Persistent Photoconductivity in a $Zn_{0.02}Cd_{0.98}Te$ Semiconductor Alloy," Phys. Rev. B 46, 3810 (1992).
21. A. S. Dissanayake, M. Elahi, H. X. Jiang, and J. Y. Lin, "Kinetics of Persistent Photoconductivity in $Al_{0.3}Ga_{0.7}As$ and $Zn_{0.3}Cd_{0.7}Se$ Semiconductor Alloys," Phys. Rev. B 45, 13996 (1992).
20. H. X. Jiang, A. Dissanayake, and J. Y. Lin, "Band-Tail States in a $Zn_{0.3}Cd_{0.7}Se$ Semiconductor Alloy Probed by Persistent Photoconductivity," Phys. Rev. B 45, 4520 (Rapid Commun.) (1992).
19. A. S. Dissanayake, S. X. Huang, H. X. Jiang, and J. Y. Lin, "Charge Storage and Persistent Photoconductivity in a $CdS_{0.5}Se_{0.5}$ Semiconductor Alloys," Phys. Rev. B 44, 13343 (1991).
18. H. X. Jiang, G. Brown, and J. Y. Lin, "Persistent Photoconductivity in II-VI and III-V Semiconductor Alloys and a Novel Infrared Detector," J. Appl. Phys. 69, 6701 (1991).
17. J. Y. Lin, D. Baum, A. Honig, and H. X. Jiang, "Dynamics of Bound-Exciton Energy Transformation to Edge-Luminescence Centers in CdS," J. Lumines. 45, 251 (1990).
16. J. Y. Lin, S. X. Huang, L. Q. Zu, E. X. Ping, and H. X. Jiang, "Persistent Photoconductivity in $Cd_{0.7}Zn_{0.3}Se$ Mixed Crystals," J. Lumines. 45, 198 (1990).
15. H. X. Jiang, L. Q. Zu, and J. Y. Lin, "Dynamics of Exciton Localization in $CdSe_{0.5}S_{0.5}$ Mixed Crystals," Phys. Rev. (Rapid Commun.) B 42, 7284 (1990).
14. J. Y. Lin, A. Dissanayake, G. Brown, and H. X. Jiang, "Relaxation of Persistent Photoconductivity in $Al_{0.3}Ga_{0.7}As$," Phys. Rev. B 42, 5855 (1990).
13. H. X. Jiang, E. X. Ping, P. Zhou, J. Y. Lin, "Dynamics of Exciton Transfer Between the Bound and the Continuum States in GaAs-$Al_xGa_{1-x}As$ Multiple Quantum Wells," Phys. Rev. B (Rapid Commun.) 41, 12949 (1990).
12. J. Y. Lin and H. X. Jiang, "Relaxation of Stored Charge Carriers in $Zn_{0.3}Cd_{0.7}Se$ Mixed Crystals," Phys. Rev. B 41, 5178 (1990).
11. H. X. Jiang and J. Y. Lin, "Percolation Transition of Persistent Photoconductivity in II-VI Mixed Crystals," Phys. Rev. Lett. 64, 2547 (1990).
10. J. Y. Lin and H. X. Jiang, "Electronic Structure and Dispersion of Compensated n-i-p-i Superlattices with Small Period Lengths," Phys. Rev. B 40, 5561 (1989).

9. H. X. Jiang and J. Y. Lin, "Persistent Photoconductivity and Related Critical Phenomena in $Zn_{0.3}Cd_{0.7}Se$," Phys. Rev. (Rapid Commun.) B 40, 10025 (1989).
8. J. Y. Lin, Q. Zhu, D. Baum, and A. Honig, "Direct Observation of Edge-Luminescence Excited by Long-Lived-Exciton-Polariton Propagation in CdS," Phys. Rev. (Rapid Commun.) B40, 1385 (1989).
7. H. X. Jiang and J. Y. Lin, "Semiconductor Superlattices with Periodic Disorder," J. Appl. Phys. 63, 1984 (1988).
6. H. X. Jiang and J. Y. Lin, "Band Structure of Non-Ideal Semiconductor Superlattices," Superlattices and Microstructures 3, 689 (1987).
5. H. X. Jiang and J. Y. Lin, "Band Structure of Superlattices with Graded Interfaces," J. Appl. Phys. 61, 624 (1987).
4. H. X. Jiang and J. Y. Lin, "Band-structure of a periodic potential with 2 wells and 2 barriers per period," Am. J. Phys. 55, 462 (1987).
3. H. X. Jiang and J. Y. Lin, "Superlattice with multiple layers per period," Phys. Rev. B 33, 5851 (1986).
2. H. X. Jiang and J. Y. Lin, "The Ground State of a Particle under the Influence of a Uniformly Charged Sphere," Am. J. Phys. 54, 1046 (1986).
1. H. X. Jiang and J. Y. Lin, "Precession of Kepler's Orbit," Am. J. Phys. 53, 694 (1985).

Invited reviews in scientific journals

1. H. X. Jiang and J. Y. Lin, Book Review for "Properties of Advanced Semiconductor Materials: GaN, AlN, InN, BN, SiGe, by Michael E. Levinshtein, Serge L. Rumyantsev, and Michael S. Shur, Eds (John Wiley & Sons, New York, 2001), MRS Bulletin, Vol. 26, 728 (2001).
2. H. X. Jiang and J. Y. Lin, "AlGaN and InAlGaN Alloys – Epitaxial Growth, Optical and Electrical Properties, and Applications," in a special issue of Opto-Electronics Review, 10, 271 (2002), invited.
3. H. X. Jiang and J. Y. Lin, "Advances in III-Nitride Microstructures and Micro-Size Emitters," J. of the Korean Physical Society, 42, S757 (2003).
4. J. Y. Lin and H. X. Jiang, "Recent Advances in III-Nitride Ultraviolet Photonic Materials and Devices," J. of the Korean Physical Society, 42, S535 (2003).
5. J. Y. Lin, H. X. Jiang, and J. Zavada, "Nitride Photonic Crystals," Eighth International Symposium on Contemporary Photonics Technology, Tokyo, Japan (January 2005.
6. J. Y. Lin and H. X. Jiang, "III-nitride ultraviolet photonic materials – Epitaxial growth, optical and electrical properties, and applications," Proceedings of SPIE on Quantum Sensing, 4999, 287 (2003).
7. H. X. Jiang & J. Y. Lin, "III-Nitride Quantum Devices – Microphotonics," CRC Critical Reviews in Solid State and Materials Sciences, (P. Holloway, Editor), 28, 131 (2003).
8. Z. Y. Fan, J. Y. Lin, and H. X. Jiang, "III-nitride deep ultraviolet micro- and nano-photonics," Proc. SPIE 6127, 61271C (2006).
9. Z. Y. Fan, J. Y. Lin, and H. X. Jiang, "Achieving conductive high Al-content AlGaN alloys for deep UV photonics," Proc. SPIE 6479, 64791I (2007).
10. Z. Y. Fan, J. Y. Lin, and H. X. Jiang, "III-nitride micro-emitter arrays: development and applications," J. Phys. D: Appl. Phys. 41, 094001 (2008).
11. B N. Pantha, J. Y. Lin, and H. X. Jiang, "III-nitride nanostructures for energy generation," Proc. SPIE 7608, 76081I (2010).
12. H. X. Jiang and J. Y. Lin, "Semiconductor lasers: Expanding into blue and green," Nature Photonics 5, 521 (2011).
13. S. Majety, X. K. Cao, R. Dahal, B. N. Pantha, J. Li, J. Y. Lin and H. X. Jiang, "Semiconducting hexagonal boron nitride for deep ultraviolet photonics," Proc. SPIE 8268, 82682R (2012).
14. J. Day, J. Li, D. Y. C. Lie, C. Bradford, J. Y. Lin and H. X. Jiang, "Full-Scale Self-Emissive Blue and Green Microdisplays Based on GaN Micro-LED Arrays," Proc. SPIE 8268, 82681X (2012).
15. X. K. Cao, S. Majety, J. Li, J. Y. Lin and H. X. Jiang, "Optoelectronic properties of hexagonal boron nitride epilayers," Proc. SPIE 8631, 863128 (2013).
16. H. X. Jiang and J. Y. Lin, "Nitride micro-LEDs and beyond - a decade progress review," Optics Express, 21, A475 (2013).

17. H. X. Jiang, and J. Y. Lin, "Hexagonal boron nitride for deep ultraviolet photonic devices," (in special section "Deep UV LEDs", Guest editors: Jung Han, Hiroshi Amano and Leo Scholwalter), Semicon. Sci. Technol. 29, 084003 (2014).
18. H. X. Jiang and J. Y. Lin, "Review - Hexagonal Boron Nitride Epilayers: Growth, optical properties and device applications," ECS J. Solid State Sci. Technol. 6, Q3012 (2017).
19. J. Y. Lin and H. X. Jiang, "Development of microLED," Appl. Phys. Lett. 116, 100502 (2020).
20. A. Maity, S. J. Grenadier, J. Li, J. Y. Lin, and H. X. Jiang, "Hexagonal boron nitride: Epitaxial growth and device applications," Prog. Quantum. Electron. 76 100302 (2021).
21. H. X. Jiang and J. Y. Lin, "How we made the microLED," Nature Electronics 6, 257 (2023).

Invited feature articles written for popular magazines

1. H. X. Jiang and J. Y. Lin, "Microdisplays based on III-nitride wide band gap semiconductors," oe magazine (The Monthly Publication of SPIE-The internal Society for Optical Engineering), July 2001 issue, page 28.
2. H. X. Jiang and J. Y. Lin, "Advances in III-nitride micro-size light emitters," III-Vs Review, 14, 35 (2001) [June/July 2001 issue].
3. H. X. Jiang, J. Y. Lin, R. Hui, and J. Zavada, "III-nitrides show promise for telecomm wavelengths," Laser Focus World, Nov. issue, S8 (2003).
4. J. Y. Lin, J. Day, J. Li, D. Lie, C. Bradford, and H. X. Jiang, "High-resolution group III-nitride microdisplays," SPIE Newsroom, Dec. issue (2011).

Invited book chapters

1. H. X. Jiang and J. Y. Lin, "Time-Resolved Photoluminescence Studies of GaN," A3.5 in "*Gallium Nitride and Related Compounds*, *EMIS Datareview Series*," *Edited by J. Edgar, S. Strite, I. Akasaki, H. Amano, and C. Wetzel,* (The Institute of Electrical Engineers, London, 1999).
2. H. X. Jiang and J. Y. Lin, "Persistent Photoconductivity in GaN," *A3.6* in *Gallium Nitride and Related Compounds*, *EMIS Datareview Series*, *Edited by J. Edgar, S. Strite, I. Akasaki, H. Amano, and C. Wetzel,* (The Institute of Electrical Engineers, London, 1999).
3. H. X. Jiang and J. Y. Lin, "Persistent photoconductivity in III-nitrides," Chapter 5 in *"III-Nitride Semiconductors: Electrical, Structural and Defects Properties"* edited by M. O. Manasreh, (Elsevier Science, 2000).
4. H. X. Jiang, J. Y. Lin, and W. W. Chow "Time-Resolved Photoluminescence Studies of III-Nitrides," Chapter 1 in *"Optical Properties of III-Nitrides I" edited by* M .O. Manasreh and H. X. Jiang, (Taylor & Francis Books, New York & London 2002).
5. H. X. Jiang and J. Y. Lin, "III-Nitride Micro-Cavity Light-Emitters," – in *"Wide Bandgap Light-Emitting Materials and Devices,"* edited by G.F. Neumark, I. Kuskovsky, and H. X. Jiang, published by Wiley –VCH Verlag GmbH, 2007.
6. H. X. Jiang and J. Y. Lin, "Carrier Dynamics Probed by Time-Resolved Photoluminescence,"– in "*Ultrafast Dynamics Processes in Semiconductors,*" Book Volume 92 – Topics in Applied Physics, edited by K. T. Tsen, published by Springer-Verlag Berlin, (Berlin Heidelberger, 2004).
7. H. X. Jiang & J. Y. Lin**, "**AlN Epitaxial Layers for UV Photonics" – Chapter 7 in "*Optoelectronic Devices: III-Nitride*," edited by M. Razeghi and M. Heini, published by Elsevier Ltd. (Amsterdam, 2004).
8. R. Dahal, J. Y. Lin, H. X. Jiang, and J. Zavada "Er doped $In_xGa_{1-x}N$ for optical communications," Chapter 5 in "*Rare-earth doped III-Nitrides for Optoelectronic and Spintronic Applications*," edited by K O'Donnell & V Dierolf, Canopus Academic Publishing Ltd and Springer SBM (2010).
9. J. Li, J. Y. Lin, H. X. Jiang, and N. Sawaki, "III-nitrides on Si substrate," Chapter 3 in "*III-V Compound Semiconductors: Integration with Silicon Based Microelectronics*," edited by T. Li, et al, published by CRC Press (Boca Raton 2010).

10. A. Sedhain, J. Y. Lin, and H. X. Jiang "AlN: Properties and Applications," Chapter 2 in "*Handbook of Luminescent Semiconductor Materials*," edited by L. Bergman and L. McHale, published in September 2011 by CRC Press, Taylor & Francis Group (ISBN: 1439834679).
11. N. Pantha, J. Y. Lin, and H. X. Jiang, "High qaulity Al-rich AlGaN alloys," Chapter 2 in "*GaN and ZnO-based Materials and Devices*," edited by S.J. Pearton, published in February 2012 by Springer, Springer Series in Materials Science (ISBN: 978-3-642-23520-7).
12. T. N. Oder, J. Y. Lin, and H. X. Jiang, "III-nitride photonics crystals for lighting applications," Chapter 6 in "*Handbook of Microcavities*" (edited by A. H. W. Choi, Pan Stanford Publishing, 2015), ISBN 978-981-4463-24-9 (Hardcover), 978-981-4463-25-6 (ebook).
13. N. Napal, H. X. Jiang, J. Y. Lin, B. Mitchell, V. Dierolf, and J. M. Zavada, "MOCVD growth of Er-doped III-N and optical-magnetic characterization," Chapter 7 *in* "*Rare Earth and Transition Metal Doping of Semiconductor Materials: Synthesis, Magnetic Properties and Room Temperature Spintronics*," edited by V. Dierolf, I. T. Ferguson, and J. M. Zavada, Woodhead Publishing, Elsevier, 2016, pp. 225-255.
14. Q. W. Wang, J. Li, J. Y. Lin, and H. X. Jiang, "Growth and properties of hexagonal boron nitride (h-BN) based alloys and quantum wells," IOP e-book, to be published.
15. Hongxing Jiang and Jingyu Lin, "Development of nitride microLEDs and displays," Chapter 1 in "Micro LEDs," Volume 106 in SEMICONDUCTORS AND SEMIMETALS, edited by Hongxing Jiang and Jingyu Lin, Academic Press (an imprint of Elsevier), 1st Edition (2021). ISBN: 9780128230411.
16. Samuel Grenadier, Avisek Maity, Jing Li, Jingyu Lin, and Hongxing Jiang, "Electrical Transport Properties of Hexagonal Boron Nitride Epilayers," Chapter 12 in "Ultrawide Bandgap Semiconductors," Volume 107 in SEMICONDUCTORS AND SEMIMETALS (2021), edited by Yuji Zhao and Zetian Mi. Hardcover ISBN: 9780128228708. ScienceDirect
17. Hongxing Jiang and Jingyu Lin, "Development of wafer-scale h-BN quasi-bulk crystals," chapter 27, in "Gallium Nitride and Related Materials-Device Processing and Materials Characterization for Power Electronics Applications," edited by Isik Kizilyalli, Jung Han, James Speck, and Eric Carlson, The Materials Research Society Series, Springer 2025. Development of wafer-scale h-BN quasi-bulk crystals (Invited).
18. Hongxing Jiang and Jingyu Lin, "Memories of Richard K. Chang," Pages:337–342, in the book of "Professor Richard K Chang - A Lifelong Teacher and Friend," *World Scientific Publishing Company, Singapore,* https://doi.org/10.1142/9789819803255_0106

Research Grants and Projects

Funded projects conducted at TTU totaling ~ $23 Million (2008 -):

1. **Ultra-wideband gap semiconductors for extrinsic photoconductive switching devices**, J. Y. Lin (P. I.)and H. X. Jiang (in partnership with Opcondys, Kyma, and Tektronix), DOE ARPA-E (ULTRAFAST program), $3,070,735, 06/2024 -05/2027.
2. **Development of Cubic Boron Nitride (c-BN) Ultrawide Bandgap Semiconductors**, J. Y. Lin (P. I.) and H. X. Jiang, DOE ARPA-E (CREATE program, $500,000, 10/2023 – 10/2025.
3. **Semiconductor Fast Neutron Detectors**, H. X. Jiang (P. I.) and J. Y. Lin, DOE ARPA-E (2021 OPEN program), $1,789,998, 04/2022 – 05/2025.
4. **Large size wafers of erbium doped GaN crystals as high energy laser gain medium,** H. X. Jiang (P. I.) and J. Y. Lin, DOD DE-JTO/ONR (MRI program), $3,000,370, 09/2017-01/2023.
5. **Erbium doped GaN crystals as high energy laser gain medium,** H. X. Jiang (P. I.) and J. Y. Lin, DOD DE-JTO/ONR (MRI program), $2,000,000, 08/12 -08/2017.
6. **Wide bandgap semiconductor optical phased arrays (OPAs)**, J. Y. Lin, (P. I.), H. X. Jiang, C. Z. Li, and J. Li, DOD-JTO/AFRL (Beam Control Research and Development), $2,521,963, 05/01/2019 - 11/2023.
7. **Boron nitride solid-state neutron detectors,** J. Y. Lin (P. I.) and H. X. Jiang, DOE ARPA-E (IDEAS program) $500,000, 06/20-11/2022.
8. **Novel solid-state neutron detectors for geothermal and well logging,** J. Y. Lin (P. I.) and H. X. Jiang, DOE ARPA-E (IDEAS program), $499,807, 06/18/2018-12/15/2019.
9. **Ultra-Compact Trace Organic Chemical & Water Ice Imager**, H. X. Jiang (P. I.) and J. Y. Lin, Photon Systems/NASA, $285,000, 08/15/2017-08/14/2020.
10. **Fast neutron spectrometry, dosimetry, and directionality monitoring using semiconductor thin film detector arrays,** H. X. Jiang (P. I.) and J. Y. Lin, DOE/NNSA, $450,000, 04/16-04/2020.
11. **Deep UV emitters and polariton lasers,** H. X. Jiang and J. Y. Lin, ARO, $450,000, 03/16-10/2019.
12. **ARI-MA: Hexagonal Boron Nitride Based Neutron Detectors,** H. X. Jiang (P. I.) and J. Y. Lin, DHS/NSF (ARI), $1,753,691, 09/15/2010 – 09/14/2015.
13. **Optical and electrical properties of III-nitrides and related materials**, H. X. Jiang (P. I.) and J. Y. Lin, DOE, $569,000, 12/01/11 -11/30/2015.
14. **Layer-structured semiconductor alloys: growth, characterization, and applications,** J. Y. Lin (P. I.) and H. X. Jiang, NSF, $450,000, 05/01/12 -04/30/2015.
15. **Erbium doped III-nitrides for optical communications and silicon photonics,** H. X. Jiang (P. I.) and J. Y. Lin, NSF, $456,000, 07/12 -07/2015.
16. **Exploiting novel device structures for deep ultraviolet emitters,** J. Y. Lin (P. I.) and H. X. Jiang, NSF, $324,919, 08/01/14 -07/31/2019.
17. **III-nitride research**, H. X. Jiang (P. I.) and J. Y. Lin, Saphlux, Inc., $55,000, 06/15 -06/2017.
18. **Erbium doped GaN lasers by optical pumping,** J. Y. Lin (P. I.) and H. X. Jiang, ARO, $64,619, 10/27/14 -10/26/2015.
19. **Nitride deep UV emitters with novel p-type layer approach**, H. X. Jiang (P. I.) and J. Y. Lin, DARPA-MTO (CMUVT program), $1,239,169, 09/14/2010 – 09/15/2013.
20. **Bridging the miscibility gap in InGaN alloys,** J. Y. Lin (P. I.) and H. X. Jiang, NSF, $475,183, 07/1/09 - 06/30/13.
21. **1.54 micron optical amplifiers and emitters based upon erbium doped III-nitrides grown on silicon**, H. X. Jiang (P. I.) and J. Y. Lin, NSF, $328,011, 09/15/2008 – 09/14/2012.
22. **III-nitride 1.5 micron photonic devices on Si substrates,** H. X. Jiang (P. I.) and J. Y. Lin, ARO/STTR Phase I, $31,000, 09/24/2010 –12/31/2011.
23. **Optical and electrical properties of III-nitrides and related materials**, H. X. Jiang (P. I.) and J. Y. Lin, DOE, $474,000, 12/01/08 -11/30/2011.

24. **High Al-content AlGaN alloys for deep UV laser applications,** H. X. Jiang (P. I.) and J. Y. Lin, DARPA/ARO (DUVAP program), $712,750, 09/15/08 - 01/14/11.
25. **AlInGaN band gap and doping engineering for visible laser diodes**, J. Y. Lin (P. I.) and H. X. Jiang, DARPA-MTO (VIGIL program), $650,000, 09/01/2008 –11/30/2010.
26. **New types of photonic devices and structures**, H. X. Jiang (P. I.) and J. Y. Lin, US Army (Asian Office), $30,000, 10/15/09 -10/14/10.
27. **DURIP-Erbium doped III-nitride nano-photonic structures grown on Si by MOCVD,** H. X. Jiang (P. I.) and J. Y. Lin, ARO, $150,000, 05/15/09 -05/14/10.

Funded projects conducted at Kansas State University (KSU) totaling ~ $15 million (1992-2008)

1. "AlInGaN bandgap and doping engineering for visible laser diodes," J. Y. Lin (P. I.) and H. X. Jiang, DARPA-MTO (VIGIL program), $132,773, 09/01/2007 – 08/31/2008.
2. "High Al-content AlGaN alloys for deep UV laser applications," H. X. Jiang (P.I) & J. Y. Lin, DARPA-MTO (DUVAP program), $270,379, 09/07-09/08.
3. "Workshop/Summer School 2008 on Wide-Bandgap Semiconductor Physics and Devices," H. X. Jiang (P.I) & J. Y. Lin, US Army International Technology Center, $15,000.
4. "III-nitride deep ultraviolet photonic materials and structures" J.Y. Lin (P.I.) & H. X. Jiang, NSF, $300,000, 05/01/05-04/30/08.
5. "III-nitrides for hydrogen fuel cell and thermopower technologies," H. X. Jiang (P.I) & J. Y. Lin, AFOSR, $300,000, 06/15/06-06/14/09
6. "Rare earth doped III-nitrides for optical communications," Z. Y. Fan (P.I.), J. Y. Lin, and H. X. Jiang, $661,250, ARO, 06/01/06-05/31/09.
7. "Optical and electrical properties of III-V nitrides and related materials," H. X. Jiang (P.I.) & J. Y. Lin, DOE, $450,000, 10/15/2005-10/14/2008.
8. "Wide bandgap III-nitride micro- and nano-photonics," H. X. Jiang (P.I) & J. Y. Lin, ARO, $625,743, 09/2003-09/2007.
9. "AlN based extreme ultraviolet (EUV) detectors," H. X. Jiang (P.I) & J. Y. Lin, NASA STTR through III-N Technology, Inc., $33,333, 01/06 – 01/07.
10. "Erbium doped III-nitride materials and photonic structures for optical communications," J. Y. Lin (P. I.) and H. X. Jiang, NSF STTR through III-N Technology, Inc, $30,000, 01/07 – 12/07.
11. "Instrumentation for III-nitride micro-photonics and electronics materials and devices research," J. Y. Lin & H. X. Jiang, DOD MDA, $750,000, 8/03-8/06.
12. "III-nitride UV optoelectronic devices for bio-agents detection," H.X. Jiang (P.I.) and J. Y. Lin, DARPA-MTO (SUVOS program),, $1,400,000, 05/01/02 – 04/30/06.
13. "III-nitride wide bandgap semiconductors for optical communications," R. Hui (P.I. – University of Kansas), H. X. Jiang and J. Y. Lin, NSF, $487,000, 11/01 – 08/06.
14. "Instrumentation for Growth of Rare Earth Doped III-Nitrides for Optical Communications," H.X. Jiang (P.I.) and J. Y. Lin, ARO, $145,000, 05/05-05/06.
15. "MOCVD Growth of InGaN/GaN Blue/Green LEDs" H. X. Jiang (P.I.) and J. Y. Lin, Saint-Gobain Company, $50,000, 6/1/05-5/31/06
16. "MOCVD Growth of AlGaN UV Materials," H.X. Jiang (P.I.) and J. Y. Lin, NASA, $25,000, 08/05 – 04/06.
17. "Optical and Electrical Properties of III-V Nitrides and Related Materials - Applications for solid-state lighting and chemical/biological agent detections," H. X. Jiang (P.I.) & J. Y. Lin, DOE, $450,000, 10/15/2002-10/14/2005.
18. "Nitride Quantum Wells and Photonic Structures – Growth, Optical Studies, and Applications," J.Y. Lin (P.I.) & H. X. Jiang," NSF, $491,884, 05/01/02-04/30/05.
19. "III-Nitrides Growth, Characterization, and Devices - for high power electronic device and deep UV sensor applications," J. Y. Lin (P.I.) & H. X. Jiang, DOD MDA (GaNPA program), $1,000,000, 07/27/2000-07/26/2005.

20. “Kansas Advanced Semiconductor Project,” DOE-EPSCoR, $900,000 over 3-years for advanced semiconductor cluster, H. X. Jiang, J. Y. Lin, and G. Wysin), ended 5/03.
21. “III-Nitride Micro- and Nano-Structures and Devices – Growth, Fabrication, and characterization,” ARO, H.X Jiang (P.I.) & J. Y. Lin, $250,010, ended 04/03.
22. "Instrumentation for III-Nitride Wide Bandgap Semiconductor Research,” H. X. Jiang (P.I) & J. Y. Lin, BMDO/ARO, $399,532, ended 5/03.
23. “Instrumentation for AlGaN/GaN Heterostructure Nano-Scale Electronic and Optoelectronic Device Fabrication,” H. X. Jiang (P. I.) & J. Y. Lin, ONR, $176,497, ended 04/30/03.
24. “Nitride Growth by MOCVD,” H. X. Jiang (P.I.) & J. Y. Lin, Thomas Swan Scientific Equipment Ltd, $164,800, 05/01 – 08/03.
25. “Fabrication and Optical Recombination in III-Nitride Microstructures and Devices,” H. X. Jiang (P.I) & J. Y. Lin, ARO, $357,98, 06/19/2000-06/18/2003.
26. “Optical and Electrical Properties of III-V Nitrides and Related Materials," H. X. Jiang (P.I.) & J. Y. Lin, DOE, $326,000, 09/15/1999-09/14/2002.
27. “III-Nitride UV Optoelectronic Devices - for Chem-Bio Agent Detection,” H.X. Jiang (P.I.) & J. Y. Lin, DARPA-MTO, $150,000, 07/2001-06/2002.
28. “Material and Device Characterization of Photoconductors,” J. Y. Lin (P. I.) & H. X. Jiang, DOD/BMDO, $100,000, 09/01/1999-08/31/2002.
29. “Picosecond Time-Resolved Spectroscopy System for Studying Deep UV Optical Transitions in AlGaN with High AlN Mole Fractions,” J. Y. Lin (P.I.) & H. X. Jiang, BMDO/ARO, $283,800, ended 03/02.
30. “Fabrication and Optical and Electrical Characterization of HFET Structures for High Power Transistor Applications,” J. Y. Lin (P.I) & H. X. Jiang, DOD-BMDO, $200,000, 09/1999-08/2002.
31. “Mechanisms of Optical Transitions in AlGaN Alloys and GaN/AlGaN Quantum Wells,” J. Y. Lin (P.I.) & H. X. Jiang, NSF, $421,979, 06/01/1999-05/01/2002.
32. "Picosecond Time-Resolved Studies of III-Nitride Materials and Structures," H. X. Jiang (P.I) & J. Y. Lin, DOD, $150,000, 04/01/1999-03/31/2002.
33. “Fabrication and Characterization of AlGaN/GaN HFET Structures with High Al-Contents for High-Power Amplifier Applications,” H. X. Jiang (P.I) & J. Y. Lin, BMDO, $250,000, 02/2000-01/09/2002.
34. "US-China Cooperative Research - Fabrication and Optical Studies of GaN Microcavities", H. X. Jiang (P. I.) & J. Y. Lin, NSF, $73,010, 03/15/1998-03/14/2001.
35. “Fabrication and Characterization of III-Nitride Microdisk Arrays," H. X. Jiang (P.I) & J. Y. Lin, DOD, $187,250, ended 05/01.
36. “Advanced Semiconductor Research Group in the State of Kansas,” H. X. Jiang (P.I.), J. Edgar, J. Y. Lin, A. Rys, G. Wysin, K. Nordheden, R. Q. Hui, and J. Chaudhuri, NSF, 500,000, 8/99-8/02.
37. “Advanced Semiconductor Research Group in the State of Kansas,” H. X. Jiang (P.I.), J. Edgar, J. Y. Lin, A. Rys, G. Wysin, K. Nordheden, R. Q. Hui, and J. Chaudhuri, Kansas Technology Enterprise Corporation, $100,000, 8/99-8/02.
38. "Switching Characteristics of AlGaN/GaN Heterojunction FETs," J. Y. Lin (P.I.) & H. X. Jiang, ONR, $131,666, 4/98-3/01.
39. "Properties and Applications of $In_xGa_{1-x}N/Al_yGa_{1-y}N$ Quantum Wells," H. X. Jiang (P.I.) & J. Y. Lin, DOD, $112,170, 6/1/97 - 5/31/00.
40. "Characterization of GaN Materials and High-Power Electronic Devices by Time-Resolved Photoluminescence and Hall Measurements," J. Y. Lin (P. I.) & H. X. Jiang, DOD, $302,780, 8/1/97-7/31/00.
41. "Instrumentation for Studying Ultrafast Optical Processes in GaN Quantum Wells and Devices - Application for High Power UV/Blue Lasers," H. X. Jiang (P.I) & J. Y. Lin, DOD, $210,250 ended 03/01.
42. “Picosecond Time-Resolved Spectroscopy System for Studying Deep UV Optical Transitions in AlGaN with High AlN Mole Fractions,” J. Y. Lin (P.I.) & H. X. Jiang, DOD, $247,500, ended 3/00.

43. "Optical and Electrical Properties of III-V Nitride Wide Band Gap Semiconductors," H. X. Jiang (P.I.) & J. Y. Lin, DOE, $150,000, 9/15/96-9/14/99.
44. "Optical Properties and Optically-Pumped UV-Blue Laser Actions in GaN," H. X. Jiang (P.I) & J. Y. Lin, DOD, $372,135, 6/15/96 - 6/14/99.
45. "Dynamics of Optical Recombination in GaN and $Al_xGa_{1-x}N$ - Applications for High Power Blue Lasers, H. X. Jiang (P.I.) & J. Y. Lin, DOD, $280,000, 8/1/96 - 7/31/99.
46. “Instrumentation for Fabrication of GaN and AlGaN Microcavities –Applications for UV Microcavity lasers and Detectors,” J. Y. Lin (P.I.) & H. X. Jiang, DOD, $185,000, ended 6/99.
47. "Dynamics of Fundamental Optical Transitions in GaN and $Al_xGa_{1-x}N$," J. Y. Lin (P.I.) & H. X. Jiang, NSF, $286,000, 7/96 - 6/99.
48. "Picosecond Optical Transitions and Carrier Dynamics in GaN," H. X. Jiang (P. I.) & J. Y. Lin, DOD, $147,142, ended 2/98.
49. "Optical Properties of GaN Semiconductors," H. X. Jiang (P.I.) & J. Y. Lin, APA Optics, Inc., $15,000, 1995.
50. “Exciton Transitions in Wide Bandgap Semiconductors,” J. Y. Lin (P.I.), NSF, $40,432, 1996.
51. "Nature of Quantum Localization Probed by Exciton Dynamics in II-VI Semiconductor Alloys,” J. Y. Lin (P.I.), NSF Career Advancement Award, $55,000, ended 06/96.
52. "Nanostructured SiC," NSF EPSCoR, J. Y. Lin (P.I.), $30,000, ended 10/97.
53. "Advanced Materials Processing," NSF EPSCoR (P. Sherwood, C. Sorensen, and K. Klabunde, P.I.s) & J. Y. Lin (one of the 7 core members with share $34,000), ended 06/97.
54. “Materials Synthesis and Characterization of Wide Bandgap Semiconductor,” NSF EPSCoR, (P. Sherwood, C. Sorensen, and K. Klabunde, P.I.s, and J. Y. Lin one of the 14 core members with share $45,000), ended 9/95.
55. “Physical Properties of Wide Bandgap Semiconductors,” J. Y. Lin (P. I.), $8,000, Alfred P. Sloan Foundation, ended 1994.