

DANIEL F. FEEZELL, PH.D.

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EDUCATION

Ph.D. Electrical Engineering, University of California Santa Barbara, 2005
Thesis Title: *Long-Wavelength Vertical-Cavity Surface-Emitting Lasers with Selectively Etched Thin Apertures*
Advisor: Professor Larry A. Coldren
M.S. Electrical Engineering, University of California Santa Barbara, 2001
B.S. Electrical Engineering, University of California Irvine, 2000

AWARDS AND HONORS

DARPA Director's Fellowship for “High-Speed Nonpolar InGaN/GaN Light-Emitting Diodes Using Plasmonic Core-Shell Nanowires”, Defense Advanced Research Projects Agency, 2015
NSF Faculty Early Career Development (CAREER) Program Award for “CAREER: Short-Wavelength Vertical-Cavity Surface-Emitting Laser Arrays Using Nonpolar and Semipolar GaN,” National Science Foundation, 2015
Highlighted as a Young Professional Speaker at the 2015 Electronic Materials and Applications Conference
DARPA Young Faculty Award for “High-Speed Nonpolar InGaN/GaN Light-Emitting Diodes Using Plasmonic Core-Shell Nanowires”, Defense Advanced Research Projects Agency, 2013
Editors Pick, Applied Physics Letters, 2013
30th Annual JSAP Outstanding Paper Award, Japan Society of Applied Physics, 2008
Excellence in Technical Communication Award, Laser Focus World Magazine, 2007
Outstanding Research Achievement, Solid State Lighting and Display Center, University of California Santa Barbara, 2007
National Research Council (NRC) Postdoctoral Associate Fellowship (declined), NIST, 2007
Three-Year Graduate Student Support Package, University of California Santa Barbara, 2000
ECE Departmental Fellowship, University of California Santa Barbara, 2000

RESEARCH EXPERIENCE

Assistant Professor (tenure track) - Department of Electrical and Computer Engineering, University of New Mexico, Albuquerque, NM, 2012 – present
Project Scientist - Materials Department and Solid-State Lighting and Energy Center, University of California Santa Barbara, Santa Barbara, CA, 2010 – 2012
Senior Device Scientist (first employee) - Soraa, Inc., Goleta, CA, 2007 – 2010
Postdoctoral Researcher (advisor: Professor Shuji Nakamura) - Materials Department, University of California Santa Barbara, Santa Barbara, CA, 2005 – 2007

Graduate Student Research Assistant (advisor: Professor Larry A. Coldren) - Electrical and Computer Engineering Department, University of California Santa Barbara, Santa Barbara, CA, 2000 – 2005

Undergraduate Research Assistant (advisor: Professor Henry Lee) - Electrical Engineering and Computer Science Department, University of California Irvine, Irvine, CA, 1999 – 2000

TEACHING AND STUDENT SUPERVISION

Courses Taught:

ECE 570, *Optoelectronic Semiconductor Materials and Devices*, Required Graduate Course, University of New Mexico, Fall Semester 2015

ECE 475, *Introduction to Electro-Optics and Opto-Electronics*, Elective Undergraduate Course, University of New Mexico, Spring Semester 2013 and 2015

ECE 371, *Materials and Devices*, Required Undergraduate Course, University of New Mexico, Fall Semester 2013 and 2014

ECE 577, *Fundamentals of Semiconductor LEDs and Lasers*, Elective Graduate Course, University of New Mexico, Spring Semester 2012

MAT 215C, *Semiconductor Device Processing*, Elective Graduate Course, University of California Santa Barbara, Spring Quarter 2011 (with Prof. Nakamura)

ECE 162B, *Fundamentals of Solid-State Physics*, Required Undergraduate Course, University of California Santa Barbara, Winter Quarter 2010 (with Prof. DenBaars)

Graduate Student Advising:

Current:

Mr. Mohsen Nami, University of New Mexico, Ph.D. Student (post-qualifier, pre-proposal), January 2013-present

Mr. Saadat Mishkat Ul Masabih, University of New Mexico, Ph.D. Student (post-qualifier, pre-proposal), January 2013-present

Mr. Rhett Eller, University of New Mexico, Ph.D. Student (post-qualifier, pre-proposal), June 2013-present

Mr. Nick Martinez, University of New Mexico and Sandia National Laboratories, Ph.D. Student (post-qualifier, pre-proposal), January 2014-present

Mr. Nick Boynton, University of New Mexico and Sandia National Laboratories, Ph.D. Student (pre-qualifier), August 2015-present

Mr. Isaac Stricklin, University of New Mexico, Ph.D. Student (pre-qualifier), August 2015-present

Mr. Jimmy Stricklin, University of New Mexico, Ph.D. Student (pre-qualifier), August 2015-present

Graduated:

Dr. Jeremy Wright, University of New Mexico and Sandia National Laboratories, Ph.D. Graduate, June 2013-September 2014, “III-Nitride Nanowire Lasers.” Currently a Senior Member of Technical Staff at Sandia National Laboratories.

Postdoctoral Research Advising:

Current:

Dr. Ashwin Rishinaramangalam, University of New Mexico, Postdoctoral Fellow, August 2012-present. Project: “Coaxial Nanostructure LEDs” with Smart Lighting Engineering Research Center (ERC).

Dr. Serdal Okur, University of New Mexico, Postdoctoral Fellow, February 2015-present. Project: “Nonpolar Vertical-Cavity Surface-Emitting Lasers for Ytterbium Atomic Clocks” with DARPA.

Former:

Dr. Benjamin Bryant, University of New Mexico and Sandia National Laboratories, September 2013-present. Project: “High-Speed Nonpolar InGaN/GaN Light-Emitting Diodes Using Plasmonic Core-Shell Nanowires” with DARPA Young Faculty Award. Currently at Avogy.

Undergraduate Student Advising:

Current:

Ms. Olivia Johnson, University of New Mexico, ECE Undergraduate, August 2015-present. Funded by DOD HBCU/MI.

Former:

Mr. Jorge Romero, University of New Mexico, ECE Undergraduate, October 2014-present. Funded by Smart Lighting Engineering Research Center.

Ms. Jacquie Shortridge, University of New Mexico, University of Arizona Physics Undergraduate, June 2014-August 2014. Funded by Nanoscience and Microsystems Research Experience for Undergraduates (REU) Program.

Ms. Rekha Schnepf, University of New Mexico, Carnegie Mellon University Undergraduate, June 2013-August 2013. Funded by Nanophotonics REU Program.

Mr. Michael Wabaunsee, University of New Mexico, Southwestern Indian Polytechnic Institute (SIPI) Undergraduate, October 2012-May 2013. Funded by Nanophotonics REU Program.

CONSULTING EXPERIENCE

Independent Technical Consultant for LEDs and Solid-State Lighting, Williams & Connolly, LLP, 05/2013 – 12/2014

Independent Technical Consultant for LEDs and Solid-State Lighting, Skadden, Arps, Slate, Meagher, and Flom, LLP, 09/2011 – 09/2012

Independent Technical Consultant for GaN-Based Lasers, Insite Partners: 08/2010 – 11/2010

FUNDING HISTORY

Current Funding (total awarded since 08/2012 is \$3.63M):

(PI) National Science Foundation Electronic, Photonic, and Magnetic Devices Program (**CAREER Award**), “CAREER: Short-Wavelength Vertical-Cavity Surface-Emitting Laser Arrays Using Nonpolar and Semipolar GaN,” \$500,000, 03/2015 – 02/2020, NSF #1454691

(PI) Army Research Laboratory (ARL) “Nonpolar Vertical-Cavity Surface-Emitting Lasers for Ytterbium Atomic Clocks,” \$387,750 (UNM budget), \$750,000 (total budget including sub-contract to UCSB), 01/2015 – 07/2016, ARO #W911NF-15-1-0027

(PI) Defense Advanced Research Projects Agency (*DARPA*) *Young Faculty Award + Director's Fellowship Extension*, "High-Speed Nonpolar InGaN/GaN Light-Emitting Diodes Using Plasmonic Core-Shell Nanowires," \$936,747, 08/2013 – 07/2016, DARPA #D13AP00055

(co-PI) National Science Foundation Engineering Research Center in Smart Lighting (sub-contract from Rensselaer Polytechnic Institute), "Patterned m-Plane Nanowall LEDs," \$624,334 (UNM budget), \$4,010,723 (total budget), 09/2012 – 08/2015, NSF #EEC-0812056, RPI #A12020

(PI) Sandia National Laboratories, "III-Nitride Lasers for Solid-State Lighting," \$121,901, 09/2013 – 10/2015, SNL #1391774

(PI) Department of Defense (Office of Naval Research), "High-Speed Blue and Green Light-Emitting Diodes Using Polarization-Free GaN," \$593,974, 08/2015 – 07/2018, ARO #W911NF-15-1-0428

(PI) Start-up Grant, Center for High Technology Materials, University of New Mexico, \$100,000, 08/2012 – present

SERVICE ACTIVITIES

Leadership:

CHTM Nanofabrication Facility Faculty Advisor, 2015 – present

Sources Thrust Leader for NSF Engineering Research Center on Smart Lighting, 2012 – present

Invited Organizer for *Group III-Nitrides and Compound Semiconductor Growth on Silicon* topics at 2015 Electronic Materials Conference

Invited Organizer for *Compound Semiconductor Growth on Silicon* topic at 2014 Electronic Materials Conference

Session Chair for *III-Nitride Novel Device Concepts and Nanowires: Structures and Defects* sessions, 2014 Electronic Materials Conference

Subcommittee Member for *Science and Innovation 15: LEDs, Photovoltaics and Energy-Efficient ("Green") Photonics*, 2014 Conference on Lasers and Electro-Optics

Professional Standing:

Faculty Associate: Center for High Technology Materials, University of New Mexico

Member: IEEE (senior member), IEEE Photonics Society, Tau Beta Pi

Prior Member: American Physical Society, Eta Kappa Nu

Service to UNM:

ECE Department: Optoelectronics Area Chair, 2015 – present

ECE Department: Graduate Curriculum Committee, 2013 – present

ECE Department: Undergraduate Curriculum Committee, 2013 – 2015

CHTM: Nanofabrication Facility Steering Committee, 2014 – 2015

CHTM: Faculty Search Committee, 2013 – 2014

CHTM: Cleanroom Manager Search Committee, 2014

Reviewing:

Army Research Labs program reviewer for Sensors and Electron Devices Directorate, 7/22/15

National Science Foundation proposal review panel for LEDs, OLEDs, Lighting, Displays in SBIR/STTR Program, 8/26/14

National Science Foundation proposal review panel for LEDs, OLEDs, and Light Sources in SBIR/STTR Program, 2/26/14

National Science Foundation proposal review panel for Emitters and Detectors in Electronic, Photonic, and Magnetic Devices Program, 1/27/14 – 1/28/14

Technical Journal Reviewer: Applied Physics Letters, Nature, Nano Letters, Optics Express, Journal of Applied Physics, Journal of Crystal Growth, Physica Status Solidi, Photonics Technology Letters, Laser and Photonics Reviews, Electron Device Letters, Photonics Review, Electrochemical and Solid-State Letters, Rapid Research Letters, Applied Physics Express, Japanese Journal of Applied Physics.

Outreach:

Mentor, Research Experience for Undergraduates (REU), University of New Mexico, 09/2012 – 2015

Mentor, Research Experience for Teachers (RET), University of New Mexico, 06/2013 – 2015

Presenter, “High Efficiency Solid-State Lighting, Light-Emitting Diodes, and Smart Lighting,” Southwestern Indian Polytechnic Institute (SIPI), 12/05/13 and 04/03/14.

Presenter, “Light-Emitting Diodes and Smart Lighting,” Dolores Gonzales Elementary School (5th grade class), 10/26/12

Instructor for high-school and community college students, National Nanotechnology Infrastructure Network (NNIN), University of California Santa Barbara, 09/2004-06/2005

PUBLICATIONS

Since starting at UNM in August 2012, I have published 14 refereed journal papers, 16 refereed conference papers/presentations, 1 book chapter, and 1 article in the popular press. As of August 27, 2015, **h-index = 27**, **i10-index = 36**, and number of **citations = 1780** (source: Google Scholar).

BOOK CHAPTERS:

[1] **D. Feezell** and S. Nakamura, “Nonpolar and Semipolar Group III-Nitride Lasers,” in *Semiconductor Lasers: Fundamentals and Applications*, Edited by A. Baranov and E Tournie, Woodhead Publishing, ISBN13: 9780857091215, Apr. 2013.

INVITED JOURNAL PUBLICATIONS:

[1] **D. Feezell**, J. Speck, S. DenBaars, and S. Nakamura “Semipolar (20 $\bar{2}$ 1) InGaN/GaN Light-Emitting Diodes for High Efficiency Solid-State Lighting,” *J. Display Technol.*, vol. 9, pp. 190-198, Feb. 2013.

[2] S. DenBaars, **D. Feezell**, K. Kelchner, S. Pimputkar, C. Pan, C. Yen, S. Tanaka, Y. Zhao, N. Pfaff, R. Farrell, M. Iza, S. Keller, U. Mishra, J. Speck, and S. Nakamura, “Development of Gallium-Nitride-Based Light-Emitting Diodes (LEDs) and Laser Diodes for Energy-Efficient Lighting and Displays,” *Acta Materialia*, vol. 61, pp. 945-951, Feb. 2013.

[3] M. Hardy, **D. Feezell**, S. DenBaars, and S. Nakamura, “Group III-Nitride Lasers: A Materials Perspective,” *Materials Today*, vol. 14, pp. 408-415, Sep. 2011.

- [4] **D. Feezell**, M. Schmidt, S. DenBaars, and S. Nakamura, “Development of Nonpolar and Semipolar InGaN/GaN Visible Light-Emitting Diodes,” *MRS Bulletin: Nonpolar and Semipolar Group III Nitride-Based Materials*, vol. 34, pp. 318-323, May 2009.

REFEREED JOURNAL PUBLICATIONS:

- [1] A. Rishinaramangalam, S. Ul Masabih, M. Fairchild, J. Wright, D. Shima, G. Balakrishnan, I. Brener, S. Brueck, and **D. Feezell**, “Controlled Growth of Ordered III-Nitride Core-Shell Nanostructure Arrays for Visible Optoelectronic Devices,” *J. Electron. Mat.*, vol. 44, pp. 1255-1262, May 2015.
- [2] M. Nami and **D. Feezell**, “Optical Properties of Ag-Coated GaN/InGaN Axial and Core-Shell Nanowire Light-Emitting Diodes,” *J. Opt.*, vol. 17, pp.025004(1-9), Jan. 2015.
- [3] M. Nami and **D. Feezell**, “Optical Properties of Plasmonic Light-Emitting Diodes Based on Flip-Chip III-Nitride Core-Shell Nanowires,” *Opt. Express*, vol. 24, pp. 29445-29455, Nov. 2014.
- [4] C. Holder, J. Leonard, R. Farrell, D. Cohen, B. Yonkee, J. Speck, S. DenBaars, S. Nakamura, and **D. Feezell**, “Nonpolar III-Nitride Vertical-Cavity Surface-Emitting Lasers with a Polarization Ratio of 100% Fabricated Using Photoelectrochemical Etching,” *Appl. Phys. Lett.*, vol. 105, pp. 031111(1-5), July 2014.
- [5] M. Nami, A. Rishinaramangalam, and **D. Feezell**, “Analysis of Light Extraction Efficiency for Gallium Nitride-Based Coaxial Microwall Light-Emitting Diodes,” *Phys. Status Solidi C*, vol. 11 pp. 766– 770, Jan. 2014.
- [6] M. Hardy, F. Wu, C. Huang, Y. Zhao, **D. Feezell**, S. Nakamura, J. Speck, and S. DenBaars “Impact of p-GaN Thermal Damage and Barrier Composition on Semipolar Green Laser Diodes,” *IEEE Photon. Technol. Lett.*, vol. 26, pp. 43-46, Jan. 2014.
- [7] N. Pfaff, K. Kelchner, **D. Feezell**, S. Nakamura, S. DenBaars, J. Speck, “Thermal performance of Violet and Blue Single-Quantum-Well Nonpolar m-Plane InGaN Light-Emitting Diodes,” *Appl. Phys. Express*, vol. 6, pp. 092104(1-4), Aug. 2013.
- [8] M. Hardy, C. Holder, **D. Feezell**, S. Nakamura, J. Speck, D. Cohen, and S. DenBaars, “Indium-tin-oxide clad blue and true green semipolar InGaN/GaN laser diodes,” *Appl. Phys. Lett.*, vol. 103, pp. 081103(1-4), Aug. 2013.
- [9] **D. Feezell**, Y. Sharma, and S. Krishna, “Optical Properties of Nonpolar III-Nitrides for Intersubband Photodetectors,” *J. Appl. Phys.*, vol. 113, pp. 133103(1-7), Apr. 2013.
- [10] A. Rishinaramangalam, M. Fairchild, S. Hersee, G. Balakrishnan, and **D. Feezell**, “Three-Dimensional GaN Templates for Molecular Beam Epitaxy of Nonpolar InGaN/GaN Coaxial Light-Emitting Diodes,” *J. Vac. Sci. Technol. B*, vol. 31, pp. 03C107(1-7), Feb. 2013.
- [11] Y. Zhao, Q. Yan, **D. Feezell**, K. Fujito, C. Van de Walle, J. Speck, S. DenBaars, and S. Nakamura, “Optical polarization characteristics of semipolar (30 $\bar{3}$ 1) and (30 $\bar{3}$ 1) InGaN/GaN light-emitting diodes,” *Opt. Express*, vol. 21, pp. A53-A59, Dec. 2012.
- [12] C. Holder, J. Speck, S. DenBaars, S. Nakamura, and **D. Feezell**, “Demonstration of Nonpolar GaN-Based Vertical Cavity Surface-Emitting Lasers,” *Appl. Phys. Express*, vol. 5, pp. 092104(1-3), Sep. 2012.

- [13] C. Pan, T. Gilbert, N. Pfaff, S. Tanaka, Y. Zhao, **D. Feezell**, J. Speck, S. Nakamura, and S. DenBaars, “Reduction in Thermal Droop Using Thick Single-Quantum-Well Structure in Semipolar (2021) Blue Light-Emitting Diodes,” *Appl. Phys. Express* vol. 5, pp. 102103(1-4), Sep. 2012.
- [14] Y. Kawaguchi, C. Huang, Y. Wu, Q. Yan, C. Pan, Y. Zhao, S. Tanaka, K Fujito, **D. Feezell**, C. Van de Walle, S. DenBaars, and S. Nakamura, “Influence of Polarity on Carrier Transport in Semipolar (2021) and (2021) Multiple-Quantum-Well Light-Emitting Diodes,” *Appl. Phys. Lett.*, vol. 100, pp. 231110(1-4), Jun. 2012.
- [15] C. Pan, S. Tanaka, F. Wu, Y. Zhao, J. Speck, S. Nakamura, S. DenBaars, and **D. Feezell**, “High-Power, Low-Efficiency-Droop Semipolar (2021) Single-Quantum-Well Blue Light-Emitting Diodes,” *Appl. Phys. Express*, vol. 5, pp. 062103(1-3), Jun. 2012.
- [16] Y. Zhao, Q. Yan, C. Huang, S. Huang, P. Hsu, S. Tanaka, C. Pan, Y. Kawaguchi, K Fujito, C. Van de Walle, J. Speck, S. DenBaars, S. Nakamura, and **D. Feezell**, “Indium Incorporation and Emission Properties of Nonpolar and Semipolar InGaN Quantum Wells,” *Appl. Phys. Lett.*, vol. 100, pp. 201108(1-4), May 2012.
- [17] P. Hsu, M. Hardy, F. Wu, I. Koslow, E. Young, A. Romanov, K. Fujito, **D. Feezell**, S. DenBaars, J. Speck, and S. Nakamura, “444.9 nm Semipolar (1122) Laser Diodes Grown on an Intentionally Stress Relaxed InGaN Waveguiding Layer,” *Appl. Phys. Lett.*, vol. 100, pp. 021104(1-4), Jan. 2012.
- [18] C. Huang, M. Hardy, K. Fujito, **D. Feezell**, J. Speck, S. DenBaars, and S. Nakamura, “Demonstration of 505 nm Laser Diodes Using Wavelength-Stable (2021) InGaN/GaN Quantum Wells,” *Appl. Phys. Lett.*, vol. 99, pp. 241115(1-3), Dec. 2011.
- [19] R. Farrell, D. Haeger, P. Hsu, K. Fujito, **D. Feezell**, S. DenBaars, J. Speck, and S. Nakamura, “Determination of Internal Parameters for AlGa_N-Cladding-Free *m*-Plane InGa_N/Ga_N Laser Diodes,” *Appl. Phys. Lett.*, vol. 99, pp. 171115(1-3), Oct. 2011.
- [20] R. Farrell, D. Haeger, P. Hsu, M. Schmidt, K. Fujito, **D. Feezell**, S. DenBaars, J. Speck, and S. Nakamura, “High-Power Blue-Violet AlGa_N-Cladding-Free *m*-Plane InGa_N/Ga_N Laser Diodes,” *Appl. Phys. Lett.*, vol. 99, pp. 171113(1-3), Oct. 2011.
- [21] C. Huang, Q. Yan, Y. Zhao, K. Fujito, **D. Feezell**, C. Van de Walle, J. Speck, S. DenBaars, and S. Nakamura, “Influence of Mg-Doped Barriers on Semipolar (2021) Multiple-Quantum-Well Green Light-Emitting Diodes,” *Appl. Phys. Lett.*, vol. 99, pp. 141114(1-3), Oct. 2011.
- [22] R. Farrell, D. Haeger, P. Hsu, M. Hardy, K. Kelchner, K. Fujito, **D. Feezell**, U. Mishra, S. DenBaars, J. Speck, and S. Nakamura, “AlGa_N-Cladding-Free *m*-plane InGa_N/Ga_N Laser Diodes with p-Type AlGa_N Etch Stop Layers,” *Appl. Phys. Express*, vol. 4, pp. 092105(1-3), Sep. 2011.
- [23] Y. Zhao, S. Tanaka, Q. Yan, C. Huang, R. Chung, C. Pan, K. Fujito, **D. Feezell**, C. Van de Walle, J. Speck, S. DenBaars, and S. Nakamura, “High Optical Polarization Ratio from Semipolar (2021) Blue-Green InGa_N/Ga_N Light-Emitting Diodes,” *Appl. Phys. Lett.*, vol. 99, pp. 051109(1-3), Aug. 2011.
- [24] Y. Zhao, S. Tanaka, C. Pan, K. Fujito, **D. Feezell**, J. Speck, S. DenBaars, and S. Nakamura, “High-Power Blue-Violet Semipolar (2021) InGa_N/Ga_N Light-Emitting Diodes with Low Efficiency Droop at 200 A/cm²,” *Appl. Phys. Express*, vol. 4, pp. 082104(1-3), Jul. 2011.

- [25] A. Tyagi, H. Zhong, R. Chung, **D. Feezell**, M. Saito, K. Fujito, J. Speck, S. DenBaars, and S. Nakamura, “InGaN/GaN Laser Diodes on Semipolar (1011) Bulk GaN Substrates,” *Phys. Stat. Sol. (c)*, vol. 5, pp. 2108-2110, Mar. 2008.
- [26] R. Farrell, **D. Feezell**, M. Schmidt, D. Haeger, K. Kelchner, K. Iso, H. Yamada, M. Saito, K. Fujito, D. Cohen, J. Speck, S. DenBaars, and S. Nakamura, “Continuous-Wave Operation of AlGaIn-Cladding-Free Nonpolar *m*-plane InGaIn/GaN Laser Diodes,” *Jpn. J. Appl. Phys. (Express Letters)*, vol. 46, pp. L761-L763, Aug. 2007.
- [27] A. Tyagi, H. Zhong, R. Chung, **D. Feezell**, M. Saito, K. Fujito, J. Speck, S. DenBaars, and S. Nakamura, “Semipolar (1011) InGaIn/GaN Laser Diodes on Bulk GaN Substrates,” *Jpn. J. Appl. Phys. (Express Letters)*, vol. 46, pp. L444-L445, May 2007.
- [28] **D. Feezell**, R. Farrell, M. Schmidt, H. Yamada, M. Ishida, S. DenBaars, D. Cohen, and S. Nakamura, “Thin Metal Intra-Cavity Contact and Lateral Current-Distribution Scheme for GaIn-Based Vertical-Cavity Lasers,” *Appl. Phys. Lett.*, vol. 90, pp. 181128(1-3), May 2007.
- [29] **D. Feezell**, M. Schmidt, R. Farrell, K. Kim, M. Saito, K. Fujito, D. Cohen, J. Speck, S. DenBaars, and S. Nakamura, “AlGaIn-Cladding-Free Nonpolar InGaIn/GaN Laser Diodes,” *Jpn. J. Appl. Phys. (Express Letters)*, vol. 46, pp. L284-L286, Mar. 2007.
- [30] M. Schmidt, K. Kim, R. Farrell, **D. Feezell**, D. Cohen, M. Saito, K. Fujito, J. Speck, S. DenBaars, and S. Nakamura, “Demonstration of Nonpolar *m*-plane InGaIn/GaN Laser Diodes,” *Jpn. J. Appl. Phys. (Express Letters)*, vol. 46, pp. L190-L191, Feb. 2007.
- [31] M. Mehta, **D. Feezell**, D. Buell, A. Jackson, L. Coldren, and J. Bowers, “Electrical Design Optimization of Single-Mode Tunnel Junction-Based Long-Wavelength VCSELs,” *IEEE Journal of Quantum Electronics*, vol. 42, pp. 675-682, Jul. 2006.
- [32] **D. Feezell**, D. Buell, D. Lofgreen, M. Mehta, and L. Coldren, “Optical Design of InAlGaAs Low-Loss Tunnel-Junction Apertures for Long-Wavelength Vertical Cavity Lasers,” *IEEE J. Quant. Electron.*, vol. 42, pp. 494-499, May 2006.
- [33] D. Buell, **D. Feezell**, and L. Coldren, “Molecular Beam Epitaxy of InP-Based Alloys for Long-Wavelength Vertical-Cavity Lasers,” *J. Vac. Sci. Technol. B*, vol. 24, pp. 1544-1547, May 2006.
- [34] **D. Feezell**, L. Johansson, D. Buell, and L. Coldren, “Efficient Modulation of InP-Based 1.3 μ m VCSELs with AsSb-Based DBRs,” *IEEE Photon. Technol. Lett.*, vol. 17, pp. 2253-2255, Nov. 2005.
- [35] **D. Feezell**, D. Buell, and L. Coldren, “InP-Based 1.3 – 1.6 μ m VCSELs with Selectively Etched Tunnel-Junction Apertures on a Wavelength Flexible Platform,” *IEEE Photon. Technol. Lett.*, vol. 17, pp. 2017-2019, Oct. 2005.
- [36] **D. Feezell**, D. Buell, and L. Coldren, “Continuous Wave Operation of All-Epitaxial InP-Based 1.3 μ m VCSELs with 57% Differential Quantum Efficiency,” *Electron. Lett.*, vol. 41, pp. 803-804, Jul. 2005.
- [37] M.H.M. Reddy, T. Asano, **D. Feezell**, D. Buell, A. Huntington, R. Koda, and L. Coldren, “Selectively Etched Tunnel Junction for Lateral Current and Optical Confinement in InP-Based Vertical Cavity Lasers,” *J. Electron. Mat.*, vol. 33, pp. 118-122, Feb. 2004.

- [38] T. Asano, **D. Feezell**, R. Koda, M.H.M. Reddy, D. Buell, A. Huntington, E. Hall, S. Nakagawa, and L. Coldren, “InP-Based All-Epitaxial 1.3 μ m VCSELs with Selectively Etched AlInAs Apertures and Sb-Based DBRs,” *IEEE Photon. Technol. Lett.*, vol. 15, pp. 1333-1335, Oct. 2003.
- [39] M.H.M. Reddy, D. Buell, **D. Feezell**, T. Asano, R. Koda, A. Huntington, and L. Coldren, “Continuous-Wave Operation of 1.55 μ m Vertical-Cavity Surface-Emitting Laser with Digital-Alloy Active Region Using Submonolayer Superlattices,” *IEEE Photon. Technol. Lett.*, vol. 15, pp. 891-893, Jul. 2003.
- [40] M.H.M. Reddy, D. Buell, T. Asano, R. Koda, **D. Feezell**, A. Huntington, and L. Coldren, “Lattice-matched Al_{0.95}Ga_{0.05}AsSb Oxide for Current Confinement in InP-Based Long Wavelength VCSELs,” *J. Cryst. Growth*, vol. 251, pp. 766-770, Apr., 2003.
- [41] M.H.M. Reddy, D. Buell, A. Huntington, T. Asano, R. Koda, **D. Feezell**, D. Lofgreen, and L. Coldren, “Al_{0.95}Ga_{0.05}As_{0.56}Sb_{0.44} for Lateral Oxide-Confinement Layer in InP-Based Devices,” *Appl. Phys. Lett.*, vol. 82, pp. 1329-1331, Mar. 2003.

POPULAR AND TECHNICAL PRESS PUBLICATIONS:

- [1] **D. Feezell**, “Laser Research at UNM” highlight of GaN-based VCSELs by Albuquerque news station KOAT, Feb. 2015. (<http://www.koat.com/news/laser-research/31129892>)
- [2] **D. Feezell**, “The Evolving GaN VCSEL,” *Compound Semiconductor Magazine*, vol. 20, issue 1, pp. 44-49, Jan. 2014.
- [3] **D. Feezell**, J. Speck, S. DenBaars, and S. Nakamura, “Nonpolar Gallium Nitride Laser Diodes Are The Next New Blue,” Invited Article *Laser Focus World Magazine*, vol. 43, pp. 79-83, Oct. 2007.

INVITED CONFERENCE PUBLICATIONS:

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