

VITA

DENNIS GLENN DEPPE

Areas of Professional Interest: Optical data networks, optical transceivers, free space optical interconnects, optoelectronic system integration, nanocavity lasers, silicon photonics, laser physics, displays, semiconductor lasers, quantum dots and nanostructures, optoelectronic devices, epitaxial crystal growth, semiconductor materials, quantum optics.

University Appointments:

2005 - Present	FPCE Endowed Chair in Nanophotonics,
2003 - 2005	Cullen Trust Endowed Professorship, UT Austin
1998 - 2005	Professor, Electrical and Computer Engineering, UT Austin
1994 - 1998	Associate Professor, ECE, UT Austin
1990 - 1994	Assistant Professor, ECE, UT Austin

Industrial Experience:

2006 - Present	Founder and CEO, sdPhotonics, Oviedo, Florida
1988-1990	Member of Technical Staff, A.T.&T. Bell Laboratories Murray Hill, New Jersey
1982-1984	Integrated Circuit Product Engineer, Hewlett-Packard Colorado Springs, Colorado

Professional Preparation:

Univ. of Illinois	Electrical Engineering	Ph.D. 1988
Univ. of Illinois	Electrical Engineering	M.Sc. 1984
Univ. of Illinois	Electrical Engineering	B.Sc. 1981

Professional Recognitions:

Guest Editor, J. Lightwave Technology, 2008
UCF Millionaires Club, 2006
FPCE Endowed Chair in Nanophotonics, UCF, 2005
Cullen Trust Endowed Professorship, UT Austin, 2003
IEEE LEOS Engineering Achievement Award, 2003
IEEE LEOS Distinguished Lecturer Award, 2001
Fellow, Institute of Electrical and Electronics Engineers, 2000
Fellow, Optical Society of America, 2000
Nicholas Holonyak Award, Optical Society of America, 1999
Associate Editor, IEEE Photonics Technology Letters, 1999-2002
Guest Editor, IEEE JSTQE, 2000
Robert & Jane Mitchell Endowed Faculty Fellowship in Engineering, UT Austin, 1991-2003
National Science Foundation Presidential Young Investigator Award, 1991
Office of Naval Research Young Investigator Award, 1991
Shell Graduate Research Fellowship, 1985-1987

Professional Service Activities

Technical Committee, International Semiconductor Laser Conference (2004)

Program Committee, IEEE LEOS Summer Topical Meeting on Optical Interconnects and VLSI Photonics (2004), San Diego, CA
 Program Committee, SPIE's Conference on VCSELs (2004), San Jose, CA
 Program Committee, SPIE's Conference on Quantum Dots, Nanoparticles, and Nanoclusters (2004), San Jose, CA
 Technical Committee, IEEE Nanotechnology Council, 2002-2004
 Awards Committee, IEEE LEOS Distinguished Lecturer Award, 2002-2003
 Program Committee, IEEE Nano-Conference 2003, San Francisco, CA
 Program Committee, SPIE's Conference on Active and Passive Optical Components for WDM Communications II (2002), Boston, MA
 Program Committee-SPIE's Photonics Fabrication Europe Conference on VCSELs and Optical Interconnects (2002)-Brugge, Belgium
 Program Committee – Photonics West Quantum Dot Devices and Computing (2002) – San Jose, CA
 Program Committee – Photonics West Vertical-Cavity Surface-Emitting Lasers VI (2002) – San Jose, CA
 Program Sub-Committee – 13th International Conference on InP and Related Compounds (2001) Nara, Japan
 Program Committee – SPIE Photonics West (2002) – Quantum Dot Sources and Detectors VI, San Jose, CA
 Program Committee – SPIE Photonics West (2002) – Vertical Cavity Surface Emitting Lasers VI, San Jose, CA
 Program Sub-Committee – IEEE LEOS Summer Topical Meeting (2001) – Advanced Semiconductor Lasers and Applications, Copper Mountain, CO
 Program Sub-Committee - IEEE/LEOS Annual Meeting (2001) - Semiconductor Lasers
 Awards Committee, Nick Holonyak Award, Optical Society of America, 2001 & 2002
 Program Sub-Committee Chair - IEEE/LEOS Annual Meeting (2000) - Semiconductor Lasers, Rio Grande, Puerto Rico
 Program Sub-Committee Chair - IEEE/LEOS Annual Meeting (1999) - Semiconductor Lasers, San Francisco, CA
 IEEE/LEOS Chair - Semiconductor Laser Technical Committee -1999 through 2002
 Symposium Organizer - OSA Annual Conference (1999) - Vertical-Cavity Surface-Emitting Lasers and Microcavities, Baltimore
 Conference Chair – IEEE/LEOS 1999 Summer Topical Meeting on VCSELs and Microcavities, San Diego, CA
 Steering Committee – International Semiconductor Science and Technology Conference, La Jolla
 Advanced-Topics Research School (1998), La Jolla, CA
 Workshop Chair - IEEE/LEOS Annual Semiconductor Laser Workshop (1998), San Francisco, CA
 Program Sub-Committee Member - IEEE/LEOS Annual Meeting (1998) - Semiconductor Lasers, Boston, MA
 Program Sub-Committee Member - SPIE Photonics West 1998 - Physics of Optoelectronic Devices, San Jose, CA

Program Sub-Committee Member - IEEE/LEOS Annual Meeting (1997) - Optoelectronics Materials and Processing, Boston, MA
 Program Sub-Committee Member - IEEE/LEOS Summer Topical Meeting (1997) - Vertical-Cavity Surface-Emitting Lasers, Montreal, Canada
 Workshop Organizer - 1997 Workshop on Native Oxides of Compound Semiconductors, San Antonio, TX
 Conference Chair - SPIE Photonics West 1997 - Vertical-Cavity Surface-Emitting Lasers, San Jose, CA
 Session Organizer/Chair - 1996 IEEE Semiconductor Laser Workshop; Session on Vertical-Cavity Surface-Emitting Lasers, Anaheim, CA
 Program Sub-Committee Member - IEEE/LEOS Annual Meeting (1996) - Optoelectronics Materials and Processing, Boston, MA
 Symposium Organizer - OSA Conference (1995) - Vertical-Cavity Surface-Emitting Lasers I&II, Portland, OR
 Present and past consulting – Kenyon & Kenyon, Austin Ventures, RF MicroDevices, Picolight, Molex Fiber Optics, Methode, Keyotee

**Invited Seminars and Presentations at Universities,
Industries, and Government Laboratories**

1. D.G. Deppe, "Semiconductor Microcavities," University of Texas, Austin, Physics Colloquium, Fall, 1990.
2. D.G. Deppe, "Controlled Spontaneous Emission in Semiconductor Microcavities," University of Illinois, Urbana, Spring, 1991.
3. D.G. Deppe, "Vertical-Cavity Surface-Emitting Lasers," Army Research Laboratory, Fall, 1991.
4. D.G. Deppe, "Semiconductor Microcavities and VCSELs," Naval Research Laboratory, Spring, 1992.
5. D.G. Deppe, "Oxide-Confined Vertical-Cavity Surface-Emitting Lasers," University of Southern California, Los Angeles, Spring, 1995.
6. D.G. Deppe, "Oxide-Confined Vertical-Cavity Surface-Emitting Lasers," University of Iowa, Iowa City, Spring, 1997.
7. D.G. Deppe, "Oxide-Confined VCSELs Using Quantum Well and Quantum Dot Active Regions," Texas Tech University, Lubbock, Spring, 1997.
8. D.G. Deppe, "Ultralow Threshold Oxide-Confined VCSELs," Univ. of New Mexico, Albuquerque, Fall, 1997.

9. D.G. Deppe, "Quantum Dot Light Emitters & Semiconductor Microcavities," Optical Science Center Colloquium, University of Arizona, Tucson, Spring, 1998.
10. D.G. Deppe, "Ultralow Threshold Microcavity Lasers and Light Emitters Based on Native Oxides and Quantum Dots," University of Iowa, Iowa City, Spring, 1998.
11. D.G. Deppe, "Selectively Oxidized VCSELs and Microcavities," Army Research Laboratory, Adelphi, November, 1998.
12. D.G. Deppe, "Microcavity Spontaneous Light Emitters," Mitel Corporation, Stockholm, February, 1999.
13. D.G. Deppe, "Novel Processing and Nanostructures for III-V Microcavity Lasers and Spontaneous Light Emitters," University of New Mexico, Albuquerque, May, 1999.
14. D.G. Deppe, "Novel Processing and Nanostructures for III-V Microcavity Lasers and Spontaneous Light Emitters," University of Michigan, Ann Arbor, June, 1999.
15. D.G. Deppe, "Quantum Dot Microcavity Lasers," University of Connecticut, April 18, 2000.
16. D.G. Deppe, "Ultralow Threshold VCSELs and Microcavity LEDs," Stanford Research Institute, Menlo Park, CA, May, 2000.
17. D.G. Deppe, Mini-Lecture Series on "VCSELs, Nanostructures, and Microcavities," University of Marburg, June 11-18, 2000.
18. D.G. Deppe, "Quantum Dots for Mid-Infrared Lasers," DARPA Photonic WASSP Program Review, Harrisburg, West Virginia, October, 2000.
19. D.G. Deppe, "Quantum Dots for Mid-Infrared Lasers," DARPA MTO Program Review, Cincinnati, OH, October, 2000.
20. D.G. Deppe, "Quantum Dot Lasers and Microcavity Light Emitters," Boston Chapter of Lasers and Electro-Optics Society, Boston, MA, December 1, 2000.
21. D.G. Deppe, "Nanostructure-Based Lasers and Light Emitters that Operate at 1.3 μm Wavelength," Central Texas Society for Optics, Austin, TX, July 2, 2001.
22. D.G. Deppe, "Quantum Dots for Mid-Infrared Lasers," DARPA Photonic WASSP Program Review, Los Angeles, CA, July 31, 2001.
23. D.G. Deppe, "Improved Efficiency in Microcavity Light Emitting Diodes for the Optoelectronic Eye," ARO MURI Program Review, Adelphi, MD, August 14, 2001.

24. D.G. Deppe, "Microcavity and Quantum Dot Light Emitters," Army Research Laboratories, Adelphi, MD, November 13, 2001.
25. D.G. Deppe, "Microcavity and Quantum Dot Light Emitters," Virginia Commonwealth University, Virginia, November 16, 2001.
26. D.G. Deppe, "Quantum Dots for Lasers and Microcavity Light Emitters," LEOS Long Island Chapter, Long Island, NY, April 8, 2002.
27. D.G. Deppe, "Quantum Dots for Lasers and Microcavity Light Emitters," Princeton University, Princeton, NJ, April 9, 2002.
28. D.G. Deppe, "Quantum Dots for Lasers and Microcavity Light Emitters," University of Toronto, May 2, 2002.
29. D.G. Deppe, "Quantum Dots for Lasers and Microcavity Light Emitters," Australian National University, Canberra, Australia, May 6, 2002.
30. D.G. Deppe, "Quantum Dots for Lasers and Microcavity Light Emitters," University of Melbourne, Melbourne, Australia, May 8, 2002.
31. D.G. Deppe, "Quantum Dots for Lasers and Microcavity Light Emitters," LEOS Scottish Chapter, St. Andrews University, St. Andrews, Scotland, May 27, 2002.
32. D.G. Deppe, "Quantum Dots for Lasers and Photonic Crystal Lasers," LEOS Belgium Chapter, University of Ghent, Ghent, Belgium, May 29, 2002.
33. D.G. Deppe, "Quantum Dots for Lasers and Microcavity Light Emitters," Arizona State University, Tempe, AZ, August, 2002.
34. D.G. Deppe, "III-V Nanostructures and Their Application to Lasers," Motorola, Tempe, AZ, August, 2002.
35. D.G. Deppe, "Self-Organized III-V Epitaxial Nanostructures and Their Application to Quantum Dot Optoelectronic Devices," Univ. California at Berkeley, Berkeley, CA, March 14, 2003.
36. D.G. Deppe, "Epitaxial Self-Organized III-V Nanostructures and Their Application to Novel Photonic Devices," 2003 NanoSummit, Houston, TX, July 31, 2003.
37. D.G. Deppe, "Epitaxial Nanostructures for Nanophotonics and Novel Optoelectronic Devices," Harvard University, Boston, MA, March 19, 2004.
38. D.G. Deppe, "Epitaxial Nanostructures for Nanophotonics and Novel Optoelectronic Devices," University of California at Berkeley, Berkeley, CA, March 31, 2004.

39. D.G. Deppe, "Epitaxial Nanostructures for Nanophotonics and Novel Optoelectronic Devices," University of Florida CREOL, Orlando, FL, April 16, 2004.
40. D.G. Deppe, "Epitaxial Nanostructures for Nanophotonics and Novel Optoelectronic Devices," University College of Cork, Cork, Ireland, May 11, 2004.
41. D.G. Deppe, "Nanophotonic Laser Sources for High Performance Integrated Photonics," University of Illinois, Champaign-Urbana, IL, March 1, 2007.
42. D.G. Deppe, "Vertical-Cavity Surface-Emitting Lasers," The Holonyak Symposium, University of Illinois, Champaign-Urbana, IL, Oct. 24, 2008.
43. D.G. Deppe, "Quantum Dot Laser and Microcavity Technologies," Carnegie-Mellon, Pittsburg, PA, April 23, 2009.
44. D.G. Deppe, "Semiconductor Nanotechnologies," Univ. Arkansas, Fayetteville, AR, Oct. 17, 2009.
45. D.G. Deppe, "Quantum Dot Lasers, Lithographic Lasers, Quantum Light Sources, and Photonic Fabric," University of Central Florida, Orlando, FL, April 30, 2010.
46. D.G. Deppe, "Quantum Dot and Microcavity Lasers," University of South Florida, Tampa, FL, September 30, 2010.
47. D.G. Deppe, "Nanolasers: Scaling and Thermal Issues," University of Illinois, Champaign-Urbana, IL, Feb. 23, 2011.
48. D.G. Deppe, "Nano-VCSELs and Other Novel Photonic Devices," CREOL @ 25, University of Central Florida, Orlando, FL, March 16, 2012.
49. D.G. Deppe, "Vertical-Cavity Surface-Emitting Lasers: Selective Oxidation and Scaling Issues," LED 50th Anniversary Symposium, University of Illinois, Champaign-Urbana, IL, Oct. 25, 2012.
50. D.G. Deppe, "Next Generation Laser Diode Technologies," University of Illinois, Champaign-Urbana, IL, Feb. 15, 2013.

JOURNAL PUBLICATIONS

1. P.E. Brunemeier, D.G. Deppe, and N. Holonyak, Jr., "Photoluminescence Measurements on Band-Discontinuity in InP-InGaPAs Heterostructures," *Appl. Phys. Lett.* 46, 755-757 (15 April, 1985).

2. P.E. Brunemeier, K.C. Hsieh, D.G. Deppe, J.M. Brown, and N. Holonyak, Jr., "Interface Abruptness and Dissolution-Induced 'Damage' in LPE InGaAsP Heterostructures," *J. Crystal Growth* 71, 705-710 (May/June, 1985).
3. P. Gavrilovic, D.G. Deppe, K. Meehan, N. Holonyak, Jr., J.J. Coleman, and R.D. Burnham, "Implantation Disordering of $\text{Al}_x\text{Ga}_{1-x}\text{As}$ Superlattices," *Appl. Phys. Lett.* 47, 130-132 (15 July, 1985).
4. R.L. Thornton, R.D. Burnham, T.L. Paoli, N. Holonyak, Jr., and D.G. Deppe, "Low Threshold Planar Buried Heterostructure Lasers Fabricated by Impurity-Induced Disordering," *Appl. Phys. Lett.* 47, 1239-1241 (15 December, 1985).
5. D.G. Deppe, K.C. Hsieh, N. Holonyak, Jr., R.D. Burnham, and R.L. Thornton, "Low Threshold Disorder-Defined Buried Heterostructure $\text{Al}_x\text{Ga}_{1-x}\text{As}$ -GaAs Quantum-Well Lasers," *J. Appl. Phys.* 58, 4515-4520 (15 December, 1985).
6. R.L. Thornton, R.D. Burnham, T.L. Paoli, N. Holonyak, Jr., and D.G. Deppe, "Highly Efficient Multiple Emitter Index-Guided Array Lasers Fabricated by Si Impurity-Induced Disordering," *Appl. Phys. Lett.* 48, 7-9 (6 January, 1986).
7. G.S. Jackson, D.G. Deppe, K.C. Hsieh, N. Holonyak, Jr., D.C. Hall, R.D. Burnham, R.L. Thornton, and T.L. Paoli, "Reduced Temperature Sensitivity $\text{Al}_x\text{Ga}_{1-x}\text{As}$ -GaAs Quantum Well Lasers With $(\text{Si}_2)_x(\text{GaAs})_{1-x}$ Barriers," *Appl. Phys. Lett.* 48, 1156-1158 (28 April, 1986).
8. R.L. Thornton, R.D. Burnham, T.L. Paoli, N. Holonyak, Jr., and D.G. Deppe, "Highly Efficient Long Lived AlGaAs Lasers Fabricated by Silicon Impurity Induced Disordering," *Appl. Phys. Lett.* 49, 133-134 (21 July, 1986).
9. D. G. Deppe, L.J. Guido, N. Holonyak, Jr., K.C. Hsieh, R.D. Burnham, R.L. Thornton, and T.L. Paoli, "Stripe-Geometry Quantum Well Heterostructure $\text{Al}_x\text{Ga}_{1-x}\text{As}$ -GaAs Lasers Defined by Defect Diffusion," *Appl. Phys. Lett.* 49, 510-512 (1 September, 1986).
10. R.L. Thornton, R.D. Burnham, T.L. Paoli, N. Holonyak, Jr., and D.G. Deppe, "Opto-Electronic Device Structures Fabricated by Impurity-Induced Disordering," *J. Crystal Growth* 77, 621-628 (September, 1986).
11. D.G. Deppe, G.S. Jackson, N. Holonyak, Jr., D.C. Hall, R.D. Burnham, R.L. Thornton, J.E. Epler, and T.L. Paoli, "Single-Mode Single-Lobe Operation of Broad Area $\text{Al}_x\text{Ga}_{1-x}\text{As}$ -GaAs Quantum Well Lasers," *Appl. Phys. Lett.* 49, 883-885 (6 October, 1986).
12. L.J. Guido, N. Holonyak, Jr., K. C. Hsieh, R.W. Kaliski, J.E. Baker and D.G. Deppe, R.D. Burnham, R.L. Thornton, and T.L. Paoli, "Impurity-Induced Disordering of $\text{Al}_x\text{Ga}_{1-x}\text{As}$ -GaAs Quantum-Well Heterostructures With $(\text{Si}_2)_x(\text{GaAs})_{1-x}$ Barriers," *J. Electron. Mater.* 16, 87-91 (1, January, 1987).

13. D.G. Deppe, G.S. Jackson, N. Holonyak, Jr., D.C. Hall, R.D. Burnham, R.L. Thornton, J.E. Epler, and T.L. Paoli, "Impurity-Induced Layer-Disordered Buried Heterostructure $\text{Al}_x\text{Ga}_{1-x}\text{As}$ -GaAs Quantum Well Edge-Injection Laser Array," *Appl. Phys. Lett.* 50, 392-394 (16 Feb. 1987).
14. D.G. Deppe, G.S. Jackson, N. Holonyak, Jr., R.D. Burnham, and R.L. Thornton, "Coupled-Stripe $\text{Al}_x\text{Ga}_{1-x}\text{As}$ -GaAs Quantum Well Lasers Defined by Impurity-Induced (Si) Layer Disorder," *Appl. Phys. Lett.* 50, 632-634 (16 March, 1987).
15. F. Julien, P. Swanson, M. Emanuel, D.G. Deppe, T.A. DeTemple, J.J. Coleman, and N. Holonyak, Jr., "Impurity-Induced Disorder Delineated Optical Waveguides in GaAs-AlGaAs Superlattices," *Appl. Phys. Lett.* 50, 866-868 (6 April, 1987).
16. D.G. Deppe, N. Holonyak, Jr., F.A. Kish, and J.E. Baker, "Background Doping Dependence of Silicon Diffusion in p-type GaAs," *Appl. Phys. Lett.* 50, 998-1000 (13 April, 1987).
17. R.W. Kaliski, D.W. Nam, D.G. Deppe, N. Holonyak, Jr., K.C. Hsieh, and R.D. Burnham, "Thermal Annealing and Photoluminescence Measurements on $\text{Al}_x\text{Ga}_{1-x}\text{As}$ -GaAs Quantum Well Heterostructures with Se and Mg Sheet Doping," *J. Appl. Phys.* 62, 998-1005 (1 August, 1987).
18. D.G. Deppe, N. Holonyak, Jr., K.C. Hsieh, P. Gavrilovic, W. Stutius, and J. Williams, "Layer Interdiffusion in Se-Doped $\text{Al}_x\text{Ga}_{1-x}\text{As}$ -GaAs Superlattices," *Appl. Phys. Lett.* 51, 581-583 (24 August, 1987).
19. D.G. Deppe, N. Holonyak, Jr., D.W. Nam, K.C. Hsieh, G.S. Jackson, R.J. Matyi, H. Shichijo, J.E. Epler, and H.F. Chung, "Room Temperature Continuous Operation of p-n $\text{Al}_x\text{Ga}_{1-x}\text{As}$ -GaAs Quantum Well Heterostructure Lasers Grown on Si," *Appl. Phys. Lett.* 51, 637-639 (31 August, 1987).
20. D.G. Deppe, D.W. Nam, N. Holonyak, Jr., K.C. Hsieh, R.J. Matyi, H. Shichijo, J.E. Epler, and H.F. Chung, "Stability of 300 K Continuous Operation of p-n $\text{Al}_x\text{Ga}_{1-x}\text{As}$ -GaAs Quantum Well Lasers Grown on Si," *Appl. Phys. Lett.* 51, 1271-1273 (19 October, 1987).
21. D.G. Deppe, N. Holonyak, Jr., and J.E. Baker, "Sensitivity of Si Diffusion in GaAs to Column IV and VI Donor Species," *Appl. Phys. Lett.* 52, 129-131 (11 January, 1988).
22. D.G. Deppe, W.E. Plano, J.M. Dallesasse, D.C. Hall, L.J. Guido, and N. Holonyak, Jr., "Buried Heterostructure $\text{Al}_x\text{Ga}_{1-x}\text{As}$ Quantum Well Lasers by Ge Diffusion From the Vapor," *Appl. Phys. Lett.* 52, 825-827 (7 March, 1988).
23. D.W. Nam, D.G. Deppe, N. Holonyak, Jr., R.M. Fletcher, C.P. Kuo, T.D. Osentowski, and M.G. Crawford, "Short Wavelength ($\sim 625\text{nm}$) Room Temperature Continuous Laser

- Operation of $\text{In}_{0.5}(\text{Al}_x\text{Ga}_{1-x})_{0.5}\text{P}$ Quantum Well Heterostructures," *Appl. Phys. Lett.* 52, 1329-1331 (18 April, 1988).
24. D.G. Deppe, D.W. Nam, N. Holonyak, Jr., K.C. Hsieh, J.E. Baker, C.P. Kuo, R.M. Fletcher, T.D. Osentowski, and M.G. Crawford, "Impurity-Induced Layer Disorder in High Gap $\text{In}_y(\text{Al}_x\text{Ga}_{1-x})_{1-y}\text{P}$ Heterostructures," *Appl. Phys. Lett.* 52, 1413-1415 (25 April, 1988).
 25. D.G. Deppe, N. Holonyak, Jr., W.E. Plano, V.M. Robbins, J.M. Dallesasse, K.C. Hsieh, and J.E. Baker, "Impurity Diffusion and Layer Interdiffusion in $\text{Al}_x\text{Ga}_{1-x}\text{As-GaAs}$ Heterostructures," *J. Appl. Phys.* 64, 1838-1844 (15 August, 1988).
 26. D.G. Deppe, N. Holonyak, Jr., K.C. Hsieh, D.W. Nam, W.E. Plano, R.J. Matyi, and H. Shichijo, "Dislocation Reduction By Impurity Diffusion in Epitaxial GaAs Grown on Si," *Appl. Phys. Lett.* 52, 1812-1814 (23 May, 1988).
 27. D.G. Deppe, L.J. Guido, and N. Holonyak, Jr., "Impurity-Induced Layer Disorder in $\text{Al}_x\text{Ga}_{1-x}\text{As-GaAs}$ Quantum Well Heterostructures," *Materials Research Society Proceedings*, Spring Meeting April 5-9, 1988, Reno.
 28. D.C. Hall, D.G. Deppe, N. Holonyak, Jr., R.J. Matyi, H. Shichijo, and J.E. Epler, "Thermal Behavior and Stability of Room Temperature Continuous $\text{Al}_x\text{Ga}_{1-x}\text{As-GaAs}$ Quantum Well Heterostructure Lasers Grown on Si," *J. Appl. Phys.* 64, 2854-2860 (15 September, 1988).
 29. D.G. Deppe and N. Holonyak, Jr., "Atom Diffusion and Impurity-Induced Layer Disorder in Quantum Well III-V Semiconductor Heterostructures," *J. Appl. Phys.* 64, R93-R113 (15 December, 1988).
 30. D.G. Deppe, D.C. Hall, N. Holonyak, Jr., R.J. Matyi, H. Shichijo, and J.E. Epler, "Effects of Microcracking on $\text{Al}_x\text{Ga}_{1-x}\text{As-GaAs}$ Quantum Well Lasers Grown on Si," *Appl. Phys. Lett.* 53, 874-876 (5 September, 1988).
 31. J.M. Dallesasse, D.W. Nam, D.G. Deppe, N. Holonyak, Jr., R.M. Fletcher, C.P. Kuo, R.M. Fletcher, T.D. Osentowski, and M.G. Crawford, "Short wavelength ($<6400\text{\AA}$) Room Temperature Continuous Operation of p-n $\text{In}_{0.5}(\text{Al}_x\text{Ga}_{1-x})_{0.5}\text{P}$ Quantum Well Lasers," *Appl. Phys. Lett.* 53, 1826-1828 (7 November, 1988).
 32. D.G. Deppe, W.E. Plano, J.E. Baker, N. Holonyak, Jr., M.J. Ludowise, C.P. Kuo, R.M. Fletcher, T.D. Osentowski, and M.G. Crawford, "Comparison of $\text{Si}_{\text{III}}\text{-Si}_{\text{IV}}$ and $\text{Si}_{\text{III}}\text{-V}_{\text{III}}$ Diffusion Models in III-V Heterostructures Lattice Matched to GaAs," *Appl. Phys. Lett.* 53, 2211-2213 (28 November, 1988).

33. D.G. Deppe, A.Y. Cho, K.F. Huang, R.J. Fischer, K. Tai, E.F. Schubert, and J.F. Chen, "AlGaAs-GaAs and AlGaAs-GaAs-InGaAs Vertical Cavity Surface Emitting Lasers with Ag Mirrors," *J. Appl. Phys.* 66, 5629-5631 (1 December, 1989).
34. D.G. Deppe, "A Thermodynamic Explanation of the Enhanced Diffusion of Base Dopant in AlGaAs-GaAs npn Bipolar Transistors," *Appl. Phys. Lett.* 56, 340-342 (22 January, 1990).
35. D.G. Deppe, N.D. Gerrard, C.J. Pinzone, R.D. Dupuis, and E.F. Schubert, "Quarter-Wavelength Bragg Reflector Stack of InP-InGaAs for 1.65 μ m Wavelengths," *Appl. Phys. Lett.* 56, 315-317 (22 January, 1990).
36. D.G. Deppe, N. Chand, J.P. van der Ziel, and G.J. Zydzik, "Al_xGa_{1-x}As-GaAs Vertical-Cavity Surface-Emitting Laser Grown on Si," *Appl. Phys. Lett.* 56, 740-742 (19 February, 1990).
37. D.G. Deppe, S. Singh, R.D. Dupuis, N.D. Gerrard, G.J. Zydzik, J.P. van der Ziel, C.A. Green, and C.J. Pinzone, "Room-Temperature Photopumped Operation of an InGaAs-InP Vertical-Cavity Surface-Emitting Laser," *Appl. Phys. Lett.* 56, 2172-2174 (28 May, 1990).
38. D.G. Deppe, J.P. van der Ziel, N. Chand, G.J. Zydzik, and S.N.G. Chu, "Phase-Coupled Operation of a Vertical-Cavity Surface-Emitting Laser Array," *Appl. Phys. Lett.* 56, 2089-2091 (21 May, 1990).
39. E.F. Schubert, L.-W. Tu, R.F. Kopf, G.J. Zydzik, and D.G. Deppe, "Low Threshold Vertical Cavity Surface Emitting Semiconductor Lasers with Metallic Reflectors," *Appl. Phys. Lett.* 57, 117-119 (9 July, 1990).
40. R.D. Dupuis, D.G. Deppe, C.J. Pinzone, N.D. Gerrard, S. Singh, G.J. Zydzik, J.P. van der Ziel, and C.A. Green, "In_{0.47}Ga_{0.53}As-InP Heterostructures for Vertical Cavity Surface Emitting Lasers at 1.65 μ m Wavelength," *J. Crystal Growth* 107, 790-795 (1991).
41. D.G. Deppe, J.C. Campbell, R. Kuchibhotla, T.J. Rogers, and B.G. Streetman, "Optically-Coupled Mirror-Quantum Well InGaAs-GaAs Light Emitting Diode," *Electron. Lett.* 26, 1665-1667 (27 September, 1990).
42. D.G. Deppe, "Gain Mechanism of the Vertical-Cavity Surface-Emitting Semiconductor Laser," *Appl. Phys. Lett.* 57, 1721-1723 (22 October, 1990).
43. J.P. van der Ziel, D.G. Deppe, N. Chand, G.J. Zydzik, and S.N.G. Chu, "Characteristics of Single and Two Dimensional Phase Coupled Arrays of Vertical Cavity Surface Emitting GaAs/AlGaAs Lasers", *IEEE J. of Quant. Electron.* QE-26, 1873-1882 (November, 1990).
44. T.J. Rogers, D.G. Deppe, and B.G. Streetman, "Effect of an AlAs/GaAs Mirror on the Spontaneous Emission of an InGaAs-GaAs Quantum Well," *Appl. Phys. Lett.* 57, 1858-1860 (29 October, 1990).

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6. C. Ell, H.M. Gibbs, G. Khitrova, E.S. Lee, S. Park, D.G. Deppe, and D.L. Huffaker, "Toward Quantum Entanglement in a Quantum Dot Nanocavity," LEOS Newsletter 13, pp. 8-9, (August 1999).
7. D.G. Deppe, D.L. Huffaker, G. Park, and O.B. Shchekin, "Quantum Dots: A New Generation of Semiconductor Lasers?" LEOS Newsletter, vol. 14, No. 3, pp. 3-6 (June 2000).

CONFERENCE PRESENTATIONS AND INVITED CONFERENCE TALKS

1. L.J. Guido, N. Holonyak, Jr., K.C. Hsieh, R.W. Kaliski, J.E. Baker, D.G. Deppe, R.D. Burnham, R.L. Thornton, and T.L. Paoli, "Impurity-Induced Disorder and Thermal Annealing in AlGaAs-GaAs Quantum Well Heterostructures with $(\text{Si}_2)_x(\text{GaAs})_{1-x}$ Barriers," 28th Annual Electronic Materials Conference, June 25-27, 1986, Amhurst, MA, paper N6.
2. D.G. Deppe, N. Holonyak, Jr., D.W. Nam, K.C. Hsieh, R.W. Kaliski, J.W. Lee, R.J. Matyi, H. Shichijo, R.D. Burnham, J.E. Epler, H.F. Chung, and T.L. Paoli, "Continuous Room Temperature Laser Operation of AlGaAs-GaAs Quantum Well Heterostructures Grown on Si," 45th Annual Device Research Conference, June 22-24, 1987, Santa Barbara, CA, paper VB6.
3. (Invited) D.G. Deppe, L.J. Guido, and N. Holonyak, Jr., "Impurity-Induced Layer Disorder in $\text{Al}_x\text{Ga}_{1-x}\text{As}$ -GaAs Quantum Well Heterostructures," Materials Research Society Spring Meeting, April 5-9, 1988, Reno, NV.
4. D.C. Hall, D.G. Deppe, N. Holonyak, Jr., R.J. Matyi, H. Shichijo, and J.E. Epler, "Thermal Behavior and Stability of Room Temperature Continuous AlGaAs-GaAs Quantum Well Heterostructure Lasers Grown on Si," 46th Annual Device Research Conference, June 20-22, 1988, Boulder, CO, paper VIA8.
5. D.G. Deppe, R.D. Dupuis, C.J. Pinzone, N.D. Gerrard, J.P. van der Ziel, G.J. Zydzik, and N. Chand, "Vertical Cavity Surface Emitting Laser Structures of AlGaAs-GaAs and InP-InGaAs," SPIE's Optical Engineering Conference, May 10-11, 1990, Dallas, TX.

6. D.G. Deppe, T.J. Rogers, and B.G. Streetman, "Gain Mechanism of the Vertical-Cavity Surface-Emitting Laser," 48th Annual Device Research Conference, June 26, 1990, Santa Barbara, CA, post-deadline paper VB-3.
7. N. Chand, S.N.G. Chu, and D.G. Deppe, "MBE Growth and Characterization of AlAs-GaAs Quarter-Wave Bragg Reflectors on GaAs and Si Substrates," 32nd Annual Electronics Materials Conference, June 27-29, 1990, Santa Barbara, CA, paper F2.
8. (Invited) D.G. Deppe, C. Lei, T.J. Rogers, and B.G. Streetman, "Semiconductor Microcavity Effect on Spontaneous Emission," Joint U.S.-Soviet Workshop on Semiconductor Lasers, Leningrad, Soviet Union, May 19-26, 1991.
9. R. Kuchibotla, A. Srinivasan, J.C. Campbell, C. Lei, D.G. Deppe, Y.-S. He, and B.G. Streetman, "Resonance Enhanced, Low-Voltage InGaAs Avalanche Photodiode," Integrated Photonics Research Topical Meeting, Monterey, CA, 1991.
10. D.G. Deppe, D.L. Huffaker, C. Lei, W.D. Lee, T.J. Rogers, J.C. Campbell, and B.G. Streetman, "Bistability and Optical Switching in an AlGaAs-GaAs-InGaAs Vertical-Cavity Surface-Emitting Laser," 49th Annual Device Research Conference, June 17-19, 1991, Boulder, CO, paper IIIA4.
11. (Invited) D.G. Deppe and C. Lei, "Electrodynamics and Controlled Spontaneous Emission in Microcavity Semiconductor Lasers," International Electron Devices Meeting, Dec. 8-11, 1991, Washington, D.C.
12. D.G. Deppe, D.L. Huffaker, C. Lei, C.J. Pinzone, J.G. Neff, and R.D. Dupuis, "Controlled Spontaneous Emission in Room Temperature Microcavities," WOCSEMAD, Feb. 17-19, 1992, San Antonio, TX.
13. (Invited) D.G. Deppe, C. Lei, D.L. Huffaker, Z. Huang, C.C. Lin, "Spontaneous Emission in Semiconductor Microcavities," Rank Prize Fund Minisymposium, September 21-24, 1992, Grasmere, England.
14. T.J. Rogers, C. Lei, B.G. Streetman, and D.G. Deppe, "Low Growth Temperature AlGaAs Current Blocking Layers for Use in Surface Normal Optoelectronic Devices," 12th North American Conference on Molecular Beam Epitaxy, Oct.12-14, 1992, Ottawa, Canada.
15. C. Lei, T.J. Rogers, D.G. Deppe, B.G. Streetman, "Low-Threshold-Voltage CW Vertical-Cavity Surface-Emitting Lasers Based on Low Growth Temperature Current Blocking Layer," IEEE/LEOS Annual Meeting, November 15-20, 1992, Boston, MA, Post-Deadline Paper PD4.
16. C. Lei, D.G. Deppe, Z. Huang, C.C. Lin, C.J. Pinzone, and R.D. Dupuis, "Spontaneous Emission Characteristics from Dipoles with Fixed Positions in Fabry Perot Cavities," 15th International Conference on Lasers & Applications, Dec. 7-11, 1992, Houston, TX.

17. (Invited) D.G. Deppe, "Performance Issues Related to Dielectric Stack Reflectors for Vertical-Cavity Surface-Emitting Lasers," SPIE International Symposia on Optoelectronic Packaging and Interconnects, January 16-23, 1993, Los Angeles, CA, Paper 1853.
18. D.L. Huffaker, D.G. Deppe, C.J. Pinzone, T.J. Rogers, B.G. Streetman, and R.D. Dupuis, "Threshold Dependence on Cavity Length and Mirror Reflectivity in Fabry-Perot Microcavity Semiconductor Lasers with High Contrast Mirrors," Quantum Optoelectronics Topical Meeting, March 17-19, 1993, Palm Springs, NV Paper QWA4.
19. (Invited) D.G. Deppe, "Electrodynamics in Semiconductor Microcavity Lasers," Workshop on Optical Properties of Mesoscopic Semiconductor Structures, April 20-23, 1993, Snowbird, UT.
20. C.C. Hansing, H. Deng, J.M. Reifsnider, D.G. Deppe, and B.G. Streetman, "MBE Regrowth Over a Selectively Undercut GaAs Masking Layer," Materials Research Society Spring Meeting, 1994, San Francisco, CA.
21. D.G. Deppe, D.L. Huffaker, C.C. Lin, and T.J. Rogers, "Nearly Planar Low Threshold Vertical-Cavity Surface-Emitting Lasers Using High Contrast Mirrors and Native Oxide," Conference on Lasers and Electro-Optics 1994 Technical Digest Series, vol. 8, pp. CPD2-1/3-6/8, May 8-13, 1994, Anaheim, CA.
22. D.L. Huffaker, D.G. Deppe, K. Kumar, and T.J. Rogers, "Native Oxide Defined Ring Contact for the Vertical-Cavity Surface-Emitting Laser," 52nd Device Research Conference, June 20-22, 1994, Boulder, CO.
23. (Invited) D.G. Deppe, D.L. Huffaker, H. Deng, and C.C. Lin, "Low Threshold Vertical Cavity Lasers Based on Native-Oxidation of AlAs and Their Transverse Mode Structure," Engineering Foundation Conference on High Speed Optoelectronic Devices for Communications and Interconnects, August 14-18, 1994, San Luis Obispo, CA.
24. D.L. Huffaker, D.G. Deppe, K. Kumar, J. Shin, B.G. Streetman, and T.J. Rogers, "Heterostructure Dependence of Buried Native-Oxides for Vertical-Cavity Devices Grown by Molecular Beam Epitaxy," North American Conference on Molecular Beam Epitaxy, October 8-10, 1994, Urbana, IL.
25. H. Deng, D.L. Huffaker, J. Shin, and D.G. Deppe, "Dependence of Large Signal Response on the Transverse Mode Structure in Vertical-Cavity Lasers," Ultrafast Electronics and Optoelectronics Topical Meeting, March 13-17, 1995, Dana Point, CA, Paper UTuE13.
26. D.L. Huffaker, J. Shin, and D.G. Deppe, "Low Threshold Microcavity Lasers using a Half-Wave Cavity Spacer," Quantum Optoelectronics Topical Meeting, March 13-17, 1995, Dana Point, CA, Paper QFB3.
27. D.G. Deppe, D.L. Huffaker, H. Deng, J. Shin, and Q. Deng, "Spontaneous Emission Coupling to the Lasing Mode in a Fabry-Perot Microcavity with High Contrast

- $\text{Al}_x\text{O}_y/\text{GaAs}$ Bragg Reflectors," Quantum Optoelectronics Topical Meeting, March 13-17, 1995, Dana Point, CA, Paper QThE6.
28. (Invited) D.G. Deppe and D.L. Huffaker, "Lasing Mode Structure in Very Small Vertical-Cavity Lasers Fabricated Using Selective Conversion of AlAs to Al_xO_y ," Optical Society of America Annual Meeting, September 10-15, 1995, Portland, OR, Paper MW1.
 29. (Invited) D.G. Deppe and D.L. Huffaker, "Spontaneous Emission and Lasing in 3-Dimensionally Confined Semiconductor Microcavities," Winter Colloquium on Physics of Quantum Electronics, January 7-10, 1996, Snowbird, UT.
 30. D.L. Huffaker and D.G. Deppe, "Native Oxides for Optoelectronic Applications," WOCSEMMAD - 1996, February 12-14, Santa Fe, NM.
 31. D.L. Huffaker, D.G. Deppe, C. Lei, and L.A. Hodges, "Sealing AlAs Against Oxidative Decomposition and Its Use in Device Fabrication," Conference on Lasers and Electro-Optics, June 2-7, 1996, Anaheim, CA, Paper JTuh5.
 32. D.L. Huffaker and D.G. Deppe, "Wavelength Control Through Lateral Device Size in a 2x2 Vertical-Cavity Surface-Emitting Laser Array Fabricated Using Selective Oxidation," 1996 Device Research Conference, Santa Barbara, CA, Paper P018.
 33. D.L. Huffaker, T.-H. Oh, L.A. Graham, H. Deng, D.G. Deppe, C. Lenox, and B.G. Streetman, "Sub-40 μA continuous-wave lasing in an oxidized vertical-cavity surface-emitting laser with dielectric mirrors," Ninth International Conference on Molecular Beam Epitaxy, Malibu, CA, August 5-9, 1996, P4.9.
 34. (Invited) D.G. Deppe and D.L. Huffaker, "Spontaneous Coupling and Wavelength Control in Very Small Index Confined Vertical-Cavity Surface-Emitting Lasers," High Speed Opto-Electronics for Communications II - Engineering Foundation Conference, August 11-15, 1996, Snowbird, UT.
 35. T.-H. Oh, D.L. Huffaker, L. Graham, H. Deng, and D.G. Deppe, "Steam Oxidation of GaAs to Form Ga_xO_y ," 190th Meeting of The Electrochemical Society, San Antonio, TX, October 6-11, 1996, Paper 424.
 36. (Invited) B.G. Streetman, J.C. Campbell, and D.G. Deppe, "Microcavity Emitters and Detectors," 190th Meeting of The Electrochemical Society, San Antonio, TX, October 6-11, 1996, Paper 417.
 37. (Invited) D.G. Deppe and D.L. Huffaker, "Transverse and Temporal Mode Characteristics in Planar and Index-Confined Microcavity Lasers," Optical Society of America Annual Meeting, October 20-25, 1996, Rochester, NY, Paper I-00074.

38. H. Deng and D.G. Deppe, "Low Coherence Microcavity Laser Operating Near the Bad-Cavity Regime," Optical Society of America Annual Meeting, October 20-25, 1996, Rochester, NY.
39. (Invited) D.L. Huffaker and D.G. Deppe, "Low Threshold Al_xO_y - Confined VCSELs and Densely-Packed Arrays," IEEE Lasers and Electro-Optics Society 1996 Annual Meeting, November 18-21, 1996, Boston, MA, Conference Proceedings, Vol. 1, pp. 384-385.
40. (Invited) D.G. Deppe, "3-Dimensional Confinement of Eigenmodes in Planar Microcavities and Interconnection of Optical Elements," Workshop on Meso-Optics, January 12-15, 1997, Crested Butte, CO.
41. Q. Deng and D. G. Deppe, "Coupling of the Transverse Modes Due to Mirror Reflectivity in a 3-Dimensionally Confined Fabry-Perot Microcavity," SPIE's International Symposium - Photonics West Optoelectronics '97 - Physics and Simulation of Optoelectronic Devices V, San Jose, CA, February 8-14, 1997.
42. (Invited) D.L. Huffaker, T.-H. Oh, H. Deng, Q. Deng, and D.G. Deppe, "Oxide-Confined VCSELs Using Half-Wave Cavity and High Contrast Dielectric Mirrors," SPIE's International Symposium - Optoelectronics '97 - Vertical-Cavity Surface-Emitting Lasers, San Jose, CA, February 8-14, 1997.
43. L.A. Graham, D.L. Huffaker, and D.G. Deppe, "Effects of Steam Oxidation on Interface Recombination Using a Single $\text{In}_{0.2}\text{Ga}_{0.8}\text{As}$ Quantum Well in a Half-Wave Microcavity VCSEL," SPIE's International Symposium - Optoelectronics '97 - Vertical-Cavity Surface-Emitting Lasers, San Jose, CA, February 8-14, 1997.
44. (Invited) D.G. Deppe, D.L. Huffaker, Q. Deng, T.-H. Oh, and H. Deng, "Lasing Modes in Highly Confined Vertical-Cavity Surface-Emitting Lasers," SPIE's International Symposium - Optoelectronics '97 - Physics and Simulation of Optoelectronic Devices V, San Jose, CA, February 8-14, 1997.
45. D.L. Huffaker, T.-H. Oh, and D.G. Deppe, " $\text{Al}_x\text{O}_y/\text{GaAs}$ Distributed Bragg Reflectors in an Oxide-Confined Half-Wave Vertical Cavity Laser," Workshop on Native Oxides of Compound Semiconductors, February 19-20, 1997, San Antonio, TX.
46. D.G. Deppe, D.L. Huffaker, O. Baklenov, L.A. Graham, and B.G. Streetman, "Very Low Threshold Vertical-Cavity Surface-Emitting Laser Based on a Native-Oxide Aperture and a Quantum Dot Active Region," Workshop on Native Oxides of Compound Semiconductors, February 19-20, 1997, San Antonio, TX.
47. Y. Qian, Z.H. Zhu, Y.H. Lo, H.Q. Hou, B.E. Hammons, D.L. Huffaker, D.G. Deppe, W. Lin, and Y.K. Tu, "Long Wavelength ($1.3\mu\text{m}$) Vertical-Cavity Surface-Emitting Lasers With a Wafer-Bonded Mirror and an Oxygen-Implanted Confinement Region," Optical Fiber Conference '97, Dallas, TX, February, 1997, Postdeadline Paper, PD-14.

48. Y. Qian, Z.H. Zhu, Y.H. Lo, D.L. Huffaker, D.G. Deppe, H.Q. Hou, B.E. Hammons, W. Lin, and Y.K. Tu, "Hydrogen Implanted $1.3\mu\text{m}$ Vertical-Cavity Surface-Emitting Lasers With Dielectric and Wafer-Bonded GaAs/AlAs Mirrors," 1997 Conference on Lasers and Electro-Optics, Baltimore, Maryland, May 18-23.
49. (Invited) D.G. Deppe, "Oxide-Confinement: A Revolution in VCSEL Technology," 1997 Conference on Lasers and Electro-Optics, Baltimore, Maryland, May 18-23.
50. D.L. Huffaker, T.-H. Oh, and D.G. Deppe, "Oxide-Apertured VCSELs Using Oxide/GaAs Distributed Bragg Reflectors and Tunnel Injection," 1997 Conference on Lasers and Electro-Optics, Baltimore, Maryland, May 18-23.
51. B. Klein, L.F. Register, K. Hess, and D.G. Deppe, "Theory and Modeling of Lasing Modes in Vertical-Cavity Surface-Emitting Lasers," Fifth International Workshop on Computational Electronics, May 28-30, 1997, Notre Dame, IN.
52. O. Baklenov, D.L. Huffaker, L.A. Graham, K.A. Anselm, D.G. Deppe, and B.G. Streetman, "Influence of Al Incorporation on Dot Size in Strained Layer Epitaxy of InGaAlAs Quantum Dots," 39th Electronic Materials Conference, 1997, Fort Collins, CO, Paper I4.
53. (Invited) D.G. Deppe, D.L. Huffaker, Q. Deng, and T.-H. Oh, "Eigenmode Confinement in the Dielectrically Apertured Fabry-Perot Microcavity," Optical Society of America Annual Meeting, 1997, Long Beach, CA.
54. D.L. Huffaker, L.A. Graham, M.R. McDaniel, and D.G. Deppe, "Low-Threshold Continuous-Wave Operation of an Oxide-Confined Vertical-Cavity Surface-Emitting Laser Based on a Quantum Dot Active Region and Half-Wave Cavity," 1997 Digest of the LEOS Summer Topical Meetings, Vertical-Cavity Lasers, Montreal, Canada, pp. 33-34.
55. Y. Qian, Z.H. Zhu, Y.H. Lo, D.L. Huffaker, D.G. Deppe, H.Q. Hou, B.E. Hammons, W. Lin, and Y.K. Yu, "High Performance $1.3\mu\text{m}$ Vertical-Cavity Surface-Emitting Lasers with Oxygen-Implanted Confinement Regions and Wafer-Bonded Mirrors," 1997 Digest of the LEOS Summer Topical Meetings, Vertical-Cavity Lasers, Montreal, Canada, pp. 45-46.
56. T.-H. Oh, D.L. Huffaker, M.R. McDaniel, and D.G. Deppe, "Single-Mode Vertical-Cavity Surface-Emitting Laser with Cavity Induced Antiguiding," 1997 Digest of the LEOS Summer Topical Meetings, Vertical-Cavity Lasers, Montreal, Canada, pp. 75-76.
57. (Invited) D.G. Deppe, D.L. Huffaker, Q. Deng, T.-H. Oh, and L.A. Graham, "Oxide-Confined VCSELs with Quantum Well and Quantum Dot Active Regions," Proceedings of IEEE Lasers and Electro-Optics Society 1997 Annual Meeting, November 10-13, 1997, San Francisco, CA, pp. 287-288.

58. Q. Deng and D.G. Deppe, "Self-Consistent Calculation of the Lasing Eigenmode of the Dielectrically-Apertured Fabry-Perot Microcavity with Distributed Bragg Reflectors," Optical Society of America Annual Meeting, 1997, Long Beach, CA.
59. D.L. Huffaker, L.A. Graham, M.R. MacDaniel, and D.G. Deppe, "InGaAlAs Quantum Dot Active Regions in Low-Threshold Continuous Wave Operation Oxide-Confined Vertical-Cavity Surface-Emitting Lasers," Tenth International Conference on Molecular Beam Epitaxy, October 5-8, 1997, Ann Arbor, MI, Paper III.9.
60. D.L. Huffaker, H. Deng, J.C. Campbell, and D.G. Deppe, "1.27 μm Resonant Cavity PIN Photodetector using an InAs/GaAs Quantum Dot Active Region Grown on GaAs," Proceedings of IEEE Lasers and Electro-Optics Society 1997 Annual Meeting, November 10-13, 1997, San Francisco, CA, pp. 237-238.
61. D.G. Deppe, Q. Deng, and D.L. Huffaker, "Mode Confinement in the Ultralow Threshold Fabry-Perot Microcavity Laser," Proceedings of IEEE Lasers and Electro-Optics Society 1997 Annual Meeting, November 10-13, 1997, San Francisco, CA, p. 164.
62. J. Zhang, Y. Qian, Z.H. Zhu, Y.H. Lo, D.L. Huffaker, D.G. Deppe, H.Q. Hou, B.E. Hammons, W. Lin, and Y.K. Tu, "Dosage Effects on Oxygen Implanted Single-Bonded 1.3 μm Vertical-Cavity Surface-Emitting Lasers," Proceedings of IEEE Lasers and Electro-Optics Society 1997 Annual Meeting, November 10-13, 1997, San Francisco, CA, pp. 426-427.
63. (Invited) D.L. Huffaker and D.G. Deppe, "InAs/GaAs Quantum Dot Active Regions in Oxide-Confined Vertical-Cavity Surface-Emitting Lasers," International Semiconductor Device Research Symposium, December 11-13, 1997, Charlottesville.
64. (Invited - Critical Review) D.G. Deppe and D.L. Huffaker, "Native Oxide Technology for III-V Optoelectronic Devices," Proceedings of the SPIE's International Symposium on Critical Review of Heterogeneous Integration: Systems on a Chip, San Jose, CA, January 24-30, 1998.
65. (Invited) D.L. Huffaker, H. Deng, and D.G. Deppe, "InAs/GaAs Quantum Dot Active Regions for Oxide-Confined Vertical Cavity Surface Emitting Lasers Operating at 1.15 μm ," Proceedings of the SPIE's International Symposium on Physics and Simulation of Optoelectronic Devices VI, San Jose, CA, January 24-30, 1998.
66. Q. Deng and D.G. Deppe, "Spontaneous Emission and Lasing Modes in Planar and Dielectrically Apertured Fabry-Perot Microcavities," Proceedings of the SPIE's International Symposium on Physics and Simulation of Optoelectronic Devices VI, San Jose, CA, January 24-30, 1998.
67. (Invited) D.G. Deppe, D.L. Huffaker, and L.A. Graham, "Quantum Dot Active Regions for Extended Wavelength AlGaAs-GaAs-InGaAs Oxide-Confined Vertical Cavity Lasers,"

Proceedings of the SPIE's International Symposium on Vertical Cavity Surface Emitting Lasers II, San Jose, CA, January 24-30, 1998.

68. M.R. McDaniel, D.L. Huffaker, and D.G. Deppe, "Metal/Dielectric Distributed Bragg Reflector for Flip-Chip Mounting of Vertical Cavity Surface Emitting Lasers," Proceedings of the SPIE's International Symposium on Vertical Cavity Surface Emitting Lasers II, San Jose, CA, January 24-30, 1998.
69. (Invited) D.G. Deppe, D.L. Huffaker, L.A. Graham, and Q. Deng, "Oxide Microcavities," Optical Society of America Topical Meeting on Radiative Processes and Dephasing in Semiconductors, February 2-4, 1998, Coeur d'Alene, Idaho.
70. D.L. Huffaker, L.A. Graham, and D.G. Deppe, "Ultra-Narrow Electroluminescence Spectrum From the Ground State of an Ensemble of Self-Organized Quantum Dots," Optical Society of America Topical Meeting on Radiative Processes and Dephasing in Semiconductors, February 2-4, 1998, Coeur d'Alene, Idaho.
71. D.L. Huffaker, L.A. Graham, and D.G. Deppe, "Carrier Confinement in InGa(Al)As Tunnel Coupled Quantum Dot Light Emitters Based on Ultra Small Apertures," Conference on Lasers and Electro-Optics, May 5-7, 1998, San Francisco.
72. L.A. Graham, D.L. Huffaker, and D.G. Deppe, "Controlled Spontaneous Lifetime From Quantum Dots Confined in Microcavities," 40th Electronic Materials Conference, Technical Program, June 24-26, 1998, Charlottesville, VA, pg. 32.
73. D.L. Huffaker, G. Park, O. Shchekin, and D.G. Deppe, "Sub-Monolayer Deposition of In, Ga, and As to Form 1.3 μm Wavelength Quantum Dots," 40th Electronic Materials Conference, Technical Program, June 24-26, 1998, Charlottesville, VA, pg. 59.
74. D.L. Huffaker, L.A. Graham, O. Shchekin, G. Park, and D.G. Deppe, "Electroluminescence and Formation Dependence on Sub-Monolayer Cycled Growth of InGa(Al)As Quantum Dots," 10th International Conference on Molecular Beam Epitaxy - MBE-X, Cannes, France, August 31-September 4, 1998.
75. (Invited) D.G. Deppe and D.L. Huffaker, "Lateral Tunneling in Closely Spaced InGaAlAs/GaAs Quantum Dots," LaJolla Advanced-Topics Research School on "Semiconductor Science and Technology '98", LaJolla, CA, September 7-11, 1998.
76. (Invited) D.L. Huffaker and D.G. Deppe, "1.3 μm GaAs-Based Quantum Dot Laser" LaJolla Advanced-Topics Research School on "Semiconductor Science and Technology '98", LaJolla, CA, September 7-11, 1998.
77. (Invited) D.G. Deppe and D.L. Huffaker, "Microcavity Physics Based on Quantum Dot Light Emitters," Optical Society of America Annual Meeting, Baltimore, October 4-9, 1998, paper MU2.

78. (Invited) D.L. Huffaker and D.G. Deppe, "Oxide-Confined Vertical Cavity Surface Emitting Lasers With Quantum Well and Quantum Dot Active Regions," Optical Society of America Annual Meeting, Baltimore, October 4-9, 1998, paper WV1.
79. (Invited) D.G. Deppe, "Quantum Dot Optical Emitters," Army Research Office Workshop on Nanostructures, October 14-16, 1998, Georgia Tech University, Atlanta, Georgia.
80. (Invited) D.G. Deppe, D.L. Huffaker, T.-H. Oh, and Z. Zou, "Dielectric Apertures for Mode Control in Low Threshold and Single Mode Vertical Cavity Surface-Emitting Lasers," IEEE Lasers and Electro-Optics Society 1998 Annual Meeting, Orlando, FL.
81. (Invited) D.L. Huffaker, G. Park, O. Shchekin, Z. Zou, and D.G. Deppe "InGaAs/GaAs Quantum Dot Lasers," IEEE Lasers and Electro-Optics Society 1998 Annual Meeting, Orlando, FL.
82. (Invited) B.D. Klein, L.F. Register, K. Hess, D.G. Deppe, and Q. Deng, "Active Cavity Modes for VCSEL Simulation," SPIE's International Symposium on Vertical Cavity Surface Emitting Lasers III, San Jose, CA, January 25-26, 1999.
83. (Invited) D.L. Huffaker, G. Park, O. Shchekin, Z. Zou, and D.G. Deppe, "1.31 μm Lasing From InGaAs/GaAs Quantum Dots Grown on a GaAs Substrate," SPIE's International Symposium on Vertical Cavity Surface Emitting Lasers III, San Jose, CA, January 25-26, 1999.
84. L.A. Graham, Q. Deng, S.M. Csutak, D.L. Huffaker, and D.G. Deppe, "Observation of Enhanced Spontaneous Lifetime in Dielectrically Apertured Microcavity Arrays with InGaAlAs quantum dot active regions," SPIE's International Symposium on Physics and Simulation on Optoelectronic Devices VII, San Jose, CA, January 25-26, 1999.
85. (Invited) D.L. Huffaker and D.G. Deppe, "Quantum Well and Quantum Dot Oxide-Confined VCSELs," COST '99 Workshop, Stockholm, Sweden, March 14-17, 1999.
86. (Invited) D.G. Deppe, D.L. Huffaker, L.A. Graham, S. Csutak, and Q. Deng, "Selectively Oxidized Dielectric Apertures and Mirrors For Low Threshold VCSELs and Spontaneous Light Emitters," Materials Research Society 1999 Spring Meeting, San Francisco, April 5 - 9, 1999, Symposium Z, paper 28584.
87. D.L. Huffaker, G. Park, Z. Zou, O. Shchekin, and D.G. Deppe, "Temperature Dependence of Lasing Characteristics for 1.3 μm GaAs-Based Quantum Dot Lasers," Conference on Lasers and Electro-Optics, May, 1999, Baltimore, MD.
89. (Invited) D.G. Deppe, D.L. Huffaker, G. Park, and Z. Zou, "Quantum Dots for GaAs-Based Long Wavelength Edge-Emitting and Vertical-Cavity Surface-Emitting Lasers," OSA Integrated Photonics Research '99 Meeting, July 18-23, 1999, Santa Barbara, CA.

90. (Invited) D.L. Huffaker, O. Shchekin, G. Park, Z. Zou, and D.G. Deppe, "InGaAs/GaAs Quantum Dots for Extended Wavelength (1.3 μm) GaAs-Based Edge-Emitters and VCSELs," IEEE Summer Topicals on Nanostructures and Quantum Dots, San Diego, CA, July 26-30, 1999.
91. (Invited) Z. Zou, D.L. Huffaker, O. Shchekin, L.A. Graham, and D.G. Deppe, "Ground State Lasing at 1.07 μm From InGaAs/GaAs QD VCSELs," IEEE Summer Topicals on VCSELs and Microcavities, San Diego, CA, July 26-30, 1999.
92. D.L. Huffaker, Z. Zou, S. Csutak, O. Shchekin, G. Park, and D.G. Deppe, "Temperature Dependence of Spontaneous and Lasing Characteristics for 1.3 μm Quantum Dot Lasers," Nanostructures '99, St. Petersburg, Russia.
93. G. Park, O. Shchekin, S. Csutak, and D.G. Deppe, "Continuous-wave, low threshold lasing in a 1.3 μm GaAs-based quantum dot laser," Electronic Materials Conference, June 30 - July 2, 1999, Santa Barbara, CA, post-deadline paper.
94. (Invited) D.L. Huffaker, Z. Zou, O. Shchekin, G. Park, S. Csutak, and D.G. Deppe, "Quantum Dot Active Regions for Extended Wavelength (1.0 to 1.3 μm) GaAs-Based VCSELs and Edge-Emitters," Optical Society of America 1999 Annual Meeting, Sept. 26-30, 1999, MV2.
95. (Invited) D.G. Deppe, D.L. Huffaker, O.B. Shchekin, and Z. Zou, "Quantum Dot Laser," 1999 Joint International Meeting, 196th Meeting of the Electrochemical Society & 1999 Fall Meeting of The Electrochemical Society of Japan, Honolulu, Hawaii, October 17-22, 1999.
96. D.L. Huffaker, Z. Zou, and D.G. Deppe, "Reduced Cavity Loss for Ultra-Low Threshold Vertical Cavity Surface Emitting Lasers," IEEE Lasers and Electro-Optics Society 1999 Annual Meeting, San Francisco, CA, November 8-11, 1999, paper WA2.
97. O. Shchekin, G. Park, D.L. Huffaker, and D.G. Deppe, "1.3 μm Quantum Dot Lasers with Single and Stacked Active Lasers," IEEE Lasers and Electro-Optics Society 1999 Annual Meeting, San Francisco, CA, November 8-11, 1999, paper WI5.
98. (Invited) D.G. Deppe, H. Huang, L.A. Graham, and D.L. Huffaker, "Purcell effect and the bias-free pulse response of vertical-cavity surface-emitting lasers," IEEE Lasers and Electro-Optics Society 1999 Annual Meeting, San Francisco, CA, November 8-11, 1999, WT4.
99. (Invited) D.L. Huffaker, Z. Zou, G. Park, O. Shchekin, and D.G. Deppe, "Extended Wavelength GaAs-Based InGaAs/GaAs Quantum Dot Lasers," Photonics Technology in the 21st Century, Singapore, Nov. 29 - Dec. 3, 1999.
100. (Plenary presentation) D.G. Deppe, D.L. Huffaker, and L.A. Graham, "Oxide-Confined Vertical-Cavity Surface-Emitting Lasers, Quantum Dots, and the Purcell Effect: Can

Scaling the Mode Size Improve Laser Performance?" SPIE Photonics Technology in the 21st Century, Singapore, Nov. 29 - Dec. 3, 1999.

101. (Invited) D.G. Deppe, D.L. Huffaker, G. Park, O. Shchekin, and Z. Zou, "Quantum Dots for 1.1 to 1.3 micron VCSELs and Microcavities," SPIE Photonics West 2000, January 22 - 28, 2000, San Jose, CA.
102. (Invited) D.G. Deppe, "Advances in Vertical-Cavity Surface-Emitting Lasers and Microcavities," International Symposium on Ultra-Parallel Optoelectronics, Feb. 3-4, 2000, Kawasaki-city, Japan.
103. T.F. Boggess, L. Zhang, M.E. Flatte, D.G. Deppe, D.L. Huffaker, O.B. Shchekin, and C. Cao, "Carrier Energy Relaxation and Recombination in 1.3 Micron Wavelength Self-Assemble InGaAs/GaAs Quantum Dots," Quantum Electronics Conference 2000, May 7-12, 2000, San Francisco, CA, CWL6.
104. G. Park, O.B. Shchekin, D.L. Huffaker, and D.G. Deppe, "Very Low Threshold Double-Oxide-Confined 1.3 μm GaAs-Based Quantum Dot Laser," Conference on Lasers and Electro-Optics 2000, May 7-12, 2000, San Francisco, CA, CWQ6.
105. E.S. Lee, S. Park, C. Ell, P. Brick, H.M. Gibbs, G. Khitrova, D.G. Deppe, and D.L. Huffaker, "Normal mode coupling in a 3D semiconductor nanocavity," Conference on Lasers and Electro-Optics 2000, May 7-12, 2000, San Francisco, CA, QTuA20.
106. O.B. Shchekin, G. Park, D.L. Huffaker, and D.G. Deppe, "Shape engineering to improve the threshold temperature dependence in quantum dot lasers," 42nd Electronic Materials Conference, June 21-23, 2000, Denver, CO.
107. Q. Qasaimeh, W. Zhou, P. Bhattacharya, D. Huffaker, and D. Deppe, "Monolithically integrated low-power phototransistor incorporating microcavity LEDs and multiquantum well phototransistors," Device Research Conference, June 19-20, 2000, Denver, CO.
108. (Invited) D.G. Deppe, D.L. Huffaker, G. Park, and O.B. Shchekin, "Quantum dots and their applications to lasers and microcavity lasers," SPIE Optoelectronics Materials and Devices II, July 26-28, 2000, Taipei, Taiwan.
109. (Invited) D.G. Deppe, D.L. Huffaker, G. Park, and O.B. Shchekin, "Quantum dot lasers," Materials Research Society Annual Fall Meeting, November 27 - December 1, 2000, Boston, MA.
110. Q. Qasaimeh, W. Zhou, P. Bhattacharya, D. Huffaker, and D.G. Deppe, "Ultra-Low Power Monolithically Inegrated InGaAs/GaAs Phototransceiver Incorporating at Modulated Barrier Photodiode and a Quantum Dot Microcavity LED," 13th Annual Meeting - IEEE Lasers and Electro-Optics Society 2000 Annual Meeting, November 13-16, 2000, Rio Grande, Puerto Rico, Paper TuS3.

111. T. Yoshie, O. Painter, A. Scherer, D. Huffaker, and D. Deppe, "Photonic Crystal Defect Microcavities with Indium Arsenide Quantum Dots," 13th Annual Meeting - IEEE Lasers and Electro-Optics Society 2000 Annual Meeting, November 13-16, 2000, Rio Grande, Puerto Rico, Paper WC2.
112. D.G. Deppe, D.L. Huffaker, H. Huang, T.F. Boggess, and L. Zhang, "Wetting Layer Entropy Effect on the Modulation Response of Self-Organized Quantum Dot Lasers," 13th Annual Meeting - IEEE Lasers and Electro-Optics Society 2000 Annual Meeting, November 13-16, 2000, Rio Grande, Puerto Rico, Paper TuV3.
113. (Invited) D.G. Deppe, "Shape Engineering of Quantum Dots for High Speed Laser and Microcavity Light Emitters," 10th Seoul International Symposium on the Physics of Semiconductors and Applications - 2000, Cheju Island, Korea, November 1-3, 2000.
114. (Invited) D.G. Deppe, "Carrier Dynamics of InGaAs/GaAs Quantum Dots for Low Power Microcavity Lasers and Light Emitters," Annual Conference on Physics of Quantum Electronics, Snowbird, UT, January 4-11, 2001.
115. (Invited) D.G. Deppe, "Temperature Dependence and Dynamic Response of Quantum Dots for 1.3 μm GaAs-Based Lasers," Workshop on Growth, Electronic, and Optical Properties of Low-Dimensional Semiconductor Quantum Structures, Schloss-Ringberg, Rottach-Egern, Germany, February 7-10, 2001.
116. B.S. Klein and D.G. Deppe, "Calculation of Modified Spontaneous Emission Rates of Quantum Dots in Micropost Vertical Cavity Structures," March 2001 Meeting of the American Physical Society, Seattle, March 12-16, 2001, Paper Q33.013
117. L. Zhang, K. Gundogdu, T.F. Boggess, M. Flatte, D.G. Deppe, D.L. Huffaker, O.B. Shchekin, and C. Cao, "Time Resolved Spectroscopy of the Ground State and Excited State of 1.3 μm Wavelength InGaAs/GaAs Quantum Dots," March 2001 Meeting of the American Physical Society, Seattle, March 12-16, 2001, Paper N33.007.
118. (Invited) D.G. Deppe, C. Cao, O.B. Shchekin, H. Chen, T.F. Boggess, L. Zhang, and K. Gundogdu, "Carrier Dynamics in Quantum Dots and Their Application to Lasers and Microcavity Light Emitters," 13th International Conference on Indium Phosphide and Related Materials, Nara, Japan, May 14-18, 2001, Paper TuB3-1.
119. Z. Zou, H. Chen, and D.G. Deppe, "High Efficiency Quantum Dot Microcavity Light Emitter," Optical Society of America Integrated Photonics Research Topical Meeting, Monterey, CA, June 11-13, 2001.
120. C. Cao, D.G. Deppe, T.F. Boggess, and L. Zhang, "Temperature Dependence of Carrier Relaxation and Dynamics in InAs and InGaAs Quantum Dots: Experiment and Model," 43rd 2001 Electronic Materials Conference, Notre Dame, IN, June 27-29, 2001, Paper U10.

121. O.B. Shchekin, D.G. Deppe, and D. Lu, "Fermi-Level Effect on the Interdiffusion of InAs and InGaAs Quantum Dots," 43rd 2001 Electronic Materials Conference, Notre Dame, IN, June 27-29, 2001, Paper U4.
122. (Invited) D.G. Deppe, C. Cao, O.B. Shchekin, Z. Zou, H. Chen, T.F. Boggess, L. Zhang, and K. Gundodgu, "Carrier Dynamics and Device Characteristics of Quantum Dot Lasers and Microcavity Light Emitters," 10th International Conference on Modulated Semiconductor Structures, Linz, Austria, July 23-27, 2001.
123. (Invited) D.G. Deppe, C. Cao, O.B. Shchekin, Z. Zou, H. Chen, T.F. Boggess, L. Zhang, and K. Gundodgu, "Exciton Carrier Dynamics of Quantum Dots and Their Application to Lasers and Microcavity Light Emitters," Alaska Meeting on Fundamental Optical Processes in Semiconductors, Anchorage, Alaska, August 6-10, 2001.
124. (Invited) D.G. Deppe, H. Chen, Z. Zou, O.B. Shchekin, C. Cao, T. Boggess, and L. Zhang, "Long-Wavelength Quantum Dots: Carrier Dynamics and Applications to Lasers and Light Emitting Diodes," 14th Annual Meeting of the Lasers and Electro-Optics Society, San Diego, CA, November 12-15, 2001.
125. (Invited) D.G. Deppe "Dynamic Response and the Temperature Characteristics of Long-Wavelength Quantum Dots for Low-Power Lasers and Microcavity Light Emitters," APOC SPIE Photonics East, Beijing, China, November 11-15, 2001.
126. (Invited) C. Cao., M. Zhang, and D.G. Deppe, "Unipolar Quantum Cascade Quantum Dot Heterostructures for Long-Wave Infrared Laser Sources," Materials Research Society Fall Meeting 2001, Boston, MA, November 26-30, 2001.
127. (Invited) D.G. Deppe, H. Chen, Z. Zou, C. Cao, and O. Shchekin, "Electrically Injected Microcavity Devices for Single Photon Sources," Annual Conference on Physics of Quantum Electronics, Snowbird, UT, January 7-9, 2002.
128. (Invited) D.G. Deppe, H. Chen, Z. Zou, C. Cao, and O. Shchekin, "Ultra-Low Power High Efficiency Quantum Dot Microcavity Light Emitters," Advanced Workshop on Frontiers in Electronics (WOFE) 2002, St. Croix, Virgin Islands, January 6-11, 2002.
129. (Invited) D.G. Deppe, O.B. Shchekin, C. Cao, T.F. Boggess, L. Zhang, and K. Gudnogdu, "Exciton Relaxation in Self-Organized Quantum Dots and Carrier-Carrier Interactions," Conference 4643, Ultrafast Phenomena in Semiconductors VI - Photonics West, January 24-25, 2002, San Jose, CA.
130. (Invited) D.G. Deppe, O.B. Shchekin, Q. Mo, C. Cao, Z. Zou, and H. Chen, "Quantum Dots for Lasers and Microcavity Devices," Conference 4649, Vertical-Cavity Surface-Emitting Lasers VI - Photonics West, January 23-24, 2002, San Jose, CA.

131. (Invited) D.G. Deppe, "Future Directions of Long Wavelength VCSELs," Conference 4653, WDM and Photonic Switching Devices for Network Applications III - Photonics West, January 24-25, 2002, San Jose, CA.
132. (Invited) D.G. Deppe, "Quantum Dot Lasers for Lasers, Photonic Crystals, and Other Microcavity Light Emitters," LEOS Benelux Photonic Crystal Workshop, May 29, 2002, Ghent, Belgium.
133. (Invited) D.G. Deppe, "Quantum Dot Lasers," Device Research Conference 2002, June, 2002, Santa Barbara, CA.
134. O. Shchekin and D.G. Deppe, "1.3-micron InAs Quantum Dot Laser with $T_0 = 213$ K from 0 to 80 °C," 2002 Electronic Materials Conference, June 27, 2002, Santa Barbara, CA.
135. (Invited) D.G. Deppe, "Quantum Dot Laser Technologies: Perspective for High Speed Modulation," International Workshop on Femtosecond Technology, June 27-28, 2002, Tsukuba, Japan.
136. (Invited) D.G. Deppe, C. Cao, and S. Quadery, "Unipolar Injection Structures for Quantum Dot Infrared Light Emitters," Conference on Physics of Quantum Electronics, January 7-11, 2003, Snowbird, UT.
137. (Invited) D.G. Deppe, O.B. Shchekin, and H. Huang, "High Performance 1.3 μ m Quantum Dot Lasers," SPIE Photonics West, January 20-25, 2003, San Jose, CA.
138. (Invited) H. Huang, D.G. Deppe, O.B. Shchekin, "Effect of P-Type Doping and the Electronic Density of States on the Modulation Response of Quantum Dot Lasers," SPIE Photonics West, January 20-25, 2003, San Jose, CA.
139. (Invited) H. Huang, D.G. Deppe, O.B. Shchekin, "Effect of P-Type Doping and the Electronic Density of States on the Modulation Response of Quantum Dot Lasers," SPIE Photonics West, January 20-25, 2003, San Jose, CA.
140. H. Huang, D.G. Deppe, O.B. Shchekin, "Chirp and Modulation Response in P-Doped Quantum Dot Lasers," WOCCSEMAD, February 16-19, 2003, Atlanta, GA.
141. K. Gundogdu, K. Hall, L. Zhang, T. Boggess, D. Deppe, and O. Shchekin, "Efficient Electron Spin Detection Using Positively Charged Quantum Dots," Annual APS March Meeting 2003, March 3-7, 2003, Austin, TX, paperV24.006.
142. (Invited) O.B. Shchekin, H. Huang, and D.G. Deppe, "1.3 micron High T_0 Quantum Dot Lasers Based on Charge-Controlled Active Regions," Indium Phosphide and Related Materials Conference 2003, Proceedings pg. 80.

143. Q. Mo, C. Cao, H. Chen, D.G. Deppe, J. Huang, S.L. Lipson, and O.B. Shchekin, "Room-Temperature CW Operation of 980 nm Air-Gap VCSELs," 2003 Conference on Lasers and Electro-Optics, June 1-6, 2003, Baltimore, MD, paper CWC1.
144. K. Hall, T.F. Boggess, D.G. Deppe, K. Gundogdu, O.B. Shchekin, and L. Zhang, "Efficient Electron Spin Detection with Positively Charged Quantum Dots," 2003 Quantum Electronics and Laser Science Conference, June 1-6, 2003, Baltimore, MD, paper QthI4.
145. T. Yang, J.-R. Cao, D.G. Deppe, S. Farrell, P.-T. Lee, J. O'Brien, R. Shafiiha, O. Shchekin, M.-H. Shih, "Microdisks with Quantum Dot Active Regions Lasing Near 1300 nm at Room Temperature," 2003 Quantum Electronics and Laser Science Conference, June 1-6, 2003, Baltimore, MD, paper CWK3.
146. (Invited) D.G. Deppe, O.B. Shchekin, "High Temperature Quantum Dot Lasers," 2003 Integrated Photonics Topical Meeting, June 16-20, 2003, Washington, DC.
147. (Invited) D.G. Deppe, O.B. Shchekin, Q. Mo, H. Chen, and Z. Huang, "Novel Semiconductor Lasers Based on Quantum Dots," International Conference on Optical MEMs & Their Applications, August 18-21, 2003, Waikoloa, HI.
148. (Invited) D.G. Deppe, "P-Doped Quantum Dot Lasers," OSA Annual Meeting, October 5-9, 2003, Tucson, AZ.
149. (Invited) D.G. Deppe, "Microcavity Quantum Dot Light Emitters," OSA Annual Meeting, October 5-9, 2003, Tucson, AZ.
150. (Invited) D.G. Deppe, "Modulation Characteristics of P-Doped Quantum Dot Lasers," IEEE Lasers and Electro-Optics Society Annual Meeting 2003, Tucson, AZ, October 26-30, 2003.
151. (Invited) D.G. Deppe, O.B. Shchekin, J. Ahn, and H. Huang, "Prospects of Quantum Dot Lasers for Directly Modulated Chirp-Free Sources," SPIE Asia-Pacific Optical Conference 2003, Wuhan, China, November 2-6, 2003, paper 5280-13.
152. (Invited) D.G. Deppe, "Low Threshold and High Performance Quantum Dot Lasers," International Symposium on Quantum Dots and Photonic Crystals 2003, Tokyo, Japan, November 17-18, 2003.
153. (Invited) D.G. Deppe, "Emerging Laser Technologies Based on Self-Organized Quantum Dots," Workshop on Emerging Laser Technologies, December 16, 2003, Dallas, TX.
154. (Invited) D.G. Deppe, "Quantum Dot Quantum Cascade Lasers," International Workshop on Quantum Cascade Lasers 2004, January 5-8, 2004, Seville, Spain.

155. (Invited) D.G. Deppe, "Modulation and Carrier Dynamics in Quantum Dot Lasers and Microcavity Devices," Photonics West 2004 Conference on Vertical Cavity Surface Emitting Lasers VIII, January 25-29, 2004, San Jose, CA, paper 5359-02.
156. D. Lu, H. Chen, and D.G. Deppe, "All-Epitaxial Apertured GaAs-Based VCSEL," Photonics West 2004 Conference on Vertical Cavity Surface Emitting Lasers VIII, January 28-29, 2004, San Jose, CA, paper 5364-12.
157. D. Gazula, M. Zhang, and D.G. Deppe, "Growth of Self-Assembled InAs Quantum Dots for InP-Based Heterostructures," Photonics West 2004 Conference on Quantum Dots, Nanoparticles, and Nanoclusters, January 26-27, 2004, San Jose, CA, paper 5361-03.
158. (Invited) D.G. Deppe, O.B. Shchekin, C. Cao, and H. Huang, and J. Ahn, "Carrier Dynamics in Quantum Dots and the Impact on Quantum Dot Lasers," SPIE's Photonics Europe 2004, April 26-30, 2004, Strasbourg, France.
159. (Invited) D.G. Deppe, "Low Threshold Quantum Dot Lasers," 7th OptoElectronics and Communications Conference/3rd Conference on Optical Internet, July 12-16, 2004, Yokohama, Japan, paper 3105.
160. (Plenary Presentation) D.G. Deppe, "Self-organized Quantum Dots and Their Application to Low Threshold Lasers," 2004 InP and Related Materials Conference, May 31 - June 4, 2004, Kagoshima, Japan.
161. (Invited) D.G. Deppe, "Quantum Dot and Novel Microcavity Lasers," 31st International Symposium on Compound Semiconductors (ISCS-2004), September 12-15, 2004, Seoul Korea.
162. (Invited) D.G. Deppe, "Novel Microcavities for Quantum Dot Semiconductor Lasers," 2004 US-Korea Conference: Symposium on Nanostructure Science and Technology (NST), August 12-14, 2004, Research Triangle Park, NC.
163. (Invited) D.G. Deppe, "Quantum Dot Lasers: Temperature and Modulation Response and Their Applications to Nanophotonics," The 4th NSF-MEXT Joint Symposium on "Nanophotonics: Beyond the Limit of Optical Technology", October 25-27, 2004, Tokyo, Japan.
164. D. Lu, J. Ahn, D. Gazula, H. Huang, and D.G. Deppe, "Epitaxial Nanostructures for Quantum Dot Lasers and Novel Optoelectronic Devices," IEEE Lasers and ElectroOptics Society Annual Meeting, November , 2004, San Juan, Puerto Rico.
165. (Invited) D.G. Deppe, "Epitaxial Nanostructures for Quantum Dot Lasers and Novel Optoelectronic Devices," Conference on Optoelectronic and Microelectronic Materials and Devices (COMMAD), December 8-10, 2004, Brisbane, Australia.

166. (Invited) D.G. Deppe, "Lithographically Defined, All-Epitaxial Grating Confined VCSELS and Their Applications to Quantum Optics Experiments," 35th Winter Colloquium on the Physics of Quantum Electronics, January 2-6, 2005, Snowbird, UT.
167. (Invited) D.G. Deppe, "Applications of Epitaxial Nanostructures to Quantum Dot Lasers and Microcavity Source," International Symposium on Quantum Dots and Photonic Crystals 2005, March 7-8, 2005, Tokyo, Japan.
168. D.G. Deppe and M. Gobert, "Quantum Dot Heterostructure Based on Electron Tunneling for Infrared Cascade Lasers," SPIE Conference on Laser Source and System Technology for Defense and Security, March 28 - April 1, 2005, Orlando, FL.
169. S. Freisem and D.G. Deppe, "Dependence of 1.3 μm Quantum Dot Laser Performance on P-Doping and Electronic Structure," 47th Annual TMS Electronic Materials Conference, June 22-24, 2005, Santa Barbara, CA.
170. D. Gazula, J. Ahn, D. Lu, H. Huang, and D.G. Deppe, "Intracavity Grating- and Current-Confined All-Epitaxial Vertical-Cavity Surface-Emitting Laser Based on Selective Interface Fermi-Level Pinning," 47th Annual TMS Electronic Materials Conference, June 22-24, 2005, Santa Barbara, CA.
171. J.R. Hendrickson, B.C. Rischards, J. Sweet, S. Mosor, G. Khitrova, H.M. Gibbs, T. Yoshie, A. Scherer, and D.G. Deppe, "Strong Coupling and Nonlinear Emission from a Quantum Dot Photonic Crystal-Slab Nanocavity, 2005 Quantum Electronics and Laser Science Conference, May 21-26, 2005, Long Beach, CA, Paper QME3.
172. J. Ahn, S. Freisem, D. Lu, D. Gazula, D.G. Deppe, "Fabrication of All-Epitaxial Semiconductor Laser Using Selective Interface Fermi Level Pinning," 2005 Conference on Lasers and Electro-Optics, May 21-26, 2005, Long Beach, CA, Paper CMFF3.
173. T. Yang, S. Lipson, J.D. O'Brien, D.G. Deppe, "Photonic Crystal Lasers with Quantum Dot Active Regions and Their Temperature Dependence," 2005 Conference on Lasers and Electro-Optics, May 21-26, 2005, Long Beach, CA, Paper CTHO4.
174. D.G. Deppe, J. Ahn, D. Lu, S. Freisem, A. Muller, and C.K. Shih, "All-Epitaxial Buried Heterostructure Quantum Dot Vertical-Cavity Surface-Emitting Lasers and Single Quantum Dot Light Sources," 2005 Lasers and Electro-Optics Society Annual Meeting, October 23-27, 2005, Sydney, Australia, Paper MB5.
175. D. Gazula, S. Quadery, and D.G. Deppe, "Laser Diode Incorporating a Buried Etched-Void Photonic Pattern," 2005 Lasers and Electro-Optics Society Annual Meeting, October 23-27, 2005, Sydney, Australia, Paper TuJ3.
176. (Invited) D.G. Deppe, J. Ahn, D. Lu, S. Freisem, A. Muller, and C.K. Shih, "Scaling Quantum Dot Microcavities: From Quantum Dot VCSELS to Single QD Sources," 2005

Materials Research Society Annual Meeting, Nov. 27 - Dec. 1, 2005, Boston, MA, Symposium EE, Paper EE 2.3.

177. (Invited) D.G. Deppe, S. Freisem, D. Lu, J. Ahn, D. Gazula, A. Muller, and C.K. Shih, "All-Epitaxial Quantum Dot Microcavities for VCSELs and Single Photon Sources," 2005 International Semiconductor Device Research Symposium, Dec. 7-9, 2005, Bethesda, MD, Paper FA6-01.
178. (Invited) D.G. Deppe, "All-Epitaxial Quantum Dot VCSELs and Microcavities Based on New MBE Growth Techniques," Nano-Optoelectronics Workshop, Aug. 21-23, 2005, UC Berkeley, Berkeley, CA.
179. (Invited) D.G. Deppe, "Quantum Dot Laser Diodes for High Power Applications in Pumping and RF Photonics," OSA Annual Meeting, San Jose, Sept. 19, 2007.
180. (Invited) D.G. Deppe, "Nanophotonic Light Sources for High Speed, High Efficiency, and Quantum Information," OSA Annual Meeting, San Jose, Sept. 20, 2007.
181. (Invited) D.G. Deppe, "Nanophotonic Lasers and Spontaneous Light Sources: Scaling Trends for Speed, Efficiency, and Quantum Light Generation," International Nano-Optoelectronic Workshop, Beijing, China, July 30, 2007.
182. (Invited) D.G. Deppe, "VCSEL Scaling and Impact on Speed, Efficiency, and Light Emission," International Symposium on VCSELs and Integrated Photonics, Tokyo, Japan, December 17, 2007.
183. D.G. Deppe, S. Freisem, G. Ozgur, K. Shavritnuruk, and H. Chen, "Very Low Threshold Current Density Continuous Wave Quantum Dot Laser Diode," 21st International Semiconductor Laser Conference, Sorrento, Italy, Sept. 15-18, 2008.
184. K. Shavritnuruk, S. Freisem, and D.G. Deppe, "Large Cavity Single Layer Quantum Dot Laser Diodes," IEEE LEOS Annual Meeting 2008, Newport Beach, CA, Nov. 9-13, 2008.
185. (Invited) D.G. Deppe, "Physics of Device Scaling in Nanophotonic Lasers and Light Emitters, International Nano-Optoelectronic Workshop (iNOW) 2008, Tokyo, Japan, August 2-15, (2008).
186. H. Pattanaik, G. Zhao, G. Ozgur, A. Demir, and D.G. Deppe, "Alpha-Factor in Above Threshold Operation of 1.3 μm Quantum Dot Laser Diode," Photonics 2008: The International Conference on Fiber Optics and Photonics, New Delhi, India, Dec. 14-17, 2008.
187. A. Demir, G. Ozgur, S. Freisem, K. Shavritnaruk, and D.G. Deppe, "Threshold Temperature Dependence of Quantum Dot Laser Diodes Approaching Ideal Performance," Conference on Lasers and Electro-Optics, May 31 - June 5, 2009, Baltimore.

188. G. Ozgur, A. Demir, S. Freisem, and D.G. Deppe, "Transparency Current Influence on Temperature Dependent Threshold of Undoped and p-Doped QD Laser Diodes," IEEE LEOS Annual Meeting, Paper ThP 2, Oct. 4-8, 2009, Belek-Antalya, Turkey.
189. A. Demir, G. Zhao, G. Ozgur, S. Freisem, and D.G. Deppe, "Lithographic and Oxide-Free Vertical-Cavity Surface-Emitting Laser," Conference on Lasers and Electro-Optics 2010, May 16-21, 2010, San Jose, CA.
190. G. Zhao, A. Demir, S. Freisem, and D.G. Deppe, "Scaling Properties of Lithographic Lasers, Photonics North 2010, Niagra Falls, Canada, June 1-3, 2010.
191. A. Demir, G. Zhao, S. Freisem, X. Liu, Y. Zhang, and D.G. Deppe, "Scaling Properties of Lithographic VCSELs," 2011 Photonics West, January 23-27, 2011, San Francisco, CA.
192. X. Liu, G. Zhao, Y. Zhang, and D.G. Deppe, "Optoelectronic Chip Based on a Laser Integrated with a Thermoelectrophotonic Heat Pump," Proc. 2012 IEEE Compound Semiconductor Integrated Circuits Symposium, pg. 265 – 268, Oct. 14-17, 2012, La Jolla, CA.
193. (Invited) D.G. Deppe, "Quantum Dots for High Powers and High Efficiencies," IEEE Summer Topical Meeting: High Power Diode Lasers, July 7, 2012, Seattle, WA.
194. G. Zhao, Y. Zhang, D.G. Deppe, K. Konthasinghe, and A. Muller, "Buried-Heterostructure VCSELs using Epitaxial Mirrors," IEEE Photonics Conference, Sept. 24, 2012, Burlingame, CA.
195. D.G. Deppe, M. Li, and X. Yang, "Metal Quenching of Radiative Emission in Metal-Clad Nanolasers and Spontaneous Emitters," IEEE Photonics Conference, Sept. 24, 2012, Burlingame, CA.
196. D.G. Deppe, X. Liu, G. Zhao, and Y. Zhang, "Semiconductor Laser Integrated with a Thermoelectrophotonic Light Emitting Diode Heat Pump," IEEE Photonics Conference, Sept. 27, 2012, Burlingame, CA.
197. D.G. Deppe, "Nanolasers and Nano-VCSELs for High Speed and Si Photonic Interconnects," GOMAC Tech, March 12, 2013, Las Vegas, NV.
198. D.G. Deppe, M. Li, and X. Yang, "Metal Cavities as the Efficiency Killer in Nanolasers and Spontaneous Light Sources," Conference on Lasers and Electro-Optics, June 10, 2013, San Jose, CA.
199. A. Gamouras, R. Mathew, S. Freisem, D.G. Deppe, and K. Hall, "Optimal Two-Qubit Quantum Control in InAs Quantum Dots," Conference on Lasers and Electro-Optics, June 10, 2013, San Jose, CA.

200. X. Liu, Y. Zhang, G. Zhao, and D.G. Deppe, "Possibility for Breaking the Unity Efficiency Barrier: Semiconductor Laser Optically Pumped with a Light Emitting Diode," Conference on Lasers and Electro-Optics, June 13, 2013, San Jose, CA.
201. G. Zhao, X. Yang, Y. Zhang, M. Li, D.G. Deppe, J. Thorp, P. Thiagarajan, and M. McElhinney, "Record Low Thermal Resistance of Mode-Confined VCSELs Using AlAs/AlGaAs DBRS, Conference on Lasers and Electro-Optics, June 14, 2013, San Jose, CA.
202. (Invited) D.G. Deppe, "Thermal Properties and Scaling of VCSELs into the 100 nm Regime," IEEE Summer Topicals: Micro- and Nano-Cavity Integrated Photonics, July 8-10, 2013, Waikoloa, HI.
203. G. Zhao, D.G. Deppe, X. Yang, Y. Zhang, X. Liu, and M. Li "Scaling VCSEL arrays to high power and high speed: Importance of the buried heterostructure," GOMAC Tech, March 31 – April 3, 2014, Charleston, SC.
204. (Invited) D.G. Deppe, G. Zhao, X. Yang, Y. Zhang, X. Liu, and M. Li, "Letting the heat out: Integration of VCSELs with Si," Optical Interconnects Conference 2014, May 4-7, 2014, Coronado, CA.
205. X. Yang, G. Zhao, M. Li, and D.G. Deppe, "Small-sized lithographic single-mode VCSELs with high-power conversion efficiency," 2015 SPIE Photonics West, Paper No. 9381-25, Feb. 12, 2015, San Francisco, CA.
206. D.G. Deppe, X. Yang, G. Zhao, M. Li, "Universal reliability model for VCSELs and other diode lasers," 2015 SPIE Photonics West, Paper No. 9381-23, Feb. 12, 2015, San Francisco, CA.
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