

## Refereed Journal Papers

1. Zhenfeng Xu, Liangcai Cao, Ping Su, Qingsheng He, and Guofan Jin, Claire Gu, "Design of a high extraction efficiency light-emitting diode with two crossed one-dimensional gratings," submitted to *Appl. Phys. Lett.*
2. Yuan Yao, Chao Lu, Claire Gu, He Yan, Jiatao Zhang, and Shoushan Fan, "Preparing the single-fiber surface-enhanced Raman scattering probe," submitted to *Nanotechnology*.
3. Chao Lu, Claire Gu, Liangcai Cao, Yuan Yao, Qingsheng He, and Guofan Jin, "Collecting efficiency analysis of various shaped multimode optical fiber probes for contact sensing," submitted to *Opt. Exp.*
4. Yi Zhang, Yuan Xu, Claire Gu, and Ephraim Suhire, "Photothermal Characterization of Vertically Aligned Carbon nanofiber Composites for Thermal Interface Applications," submitted to *IEEE Transactions on Nanotechnology*.
5. Yi Zhang, Yuan Xu, Quoc Ngo, Alan M. Cassell, Brett A. Cruden, Jun Li, and Claire Gu, "Scanning thermal characterization of embedded carbon nanofiber array," submitted to *Appl. Phys. Lett.*
6. Haoyun Wei, Liangcai Cao, Zhenfeng Xu, Qingsheng He, Guofan Jin, Claire Gu "Holographic Grating Formation in Cationic Polymerization Films with Dark Reaction," submitted to *Chinese Physics Letters*.
7. Yi Zhang, Ephraim Suhir, Yuan Xu, Claire Gu, "Bonding strength of a carbon nanofibers array to its substrate" *J. Mate. Res.* **21**, 2922, 2006.
8. Zhenfeng Xu, Liangcai Cao, Ping Su, Qingsheng He, and Guofan Jin, Claire Gu "Micro displacement sensor with large dynamic range based on photonic crystal co-directional coupler," submitted to *IEEE J. Quantum Electronics*.
9. H. Yan, C. Gu, C. Yang, J. Liu, G. Jin, J. Zhang, L. Hou, and Y. Yao, "A novel hollow core photonic crystal fiber surface-enhanced Raman probe," *Appl. Phys. Lett.* **89**, 204101, 2006; selected for the November 27, 2006 issue of Virtual Journal of Nanoscale Science & Technology.
10. Haoyun Wei, Liangcai Cao, Zhenfeng Xu, Qingsheng He, Guofan Jin, Claire Gu "Orthogonal polarization dual-channel holographic memory in cationic ring-opening photopolymer," *Opt. Exp.* **14**, 5135-5142 (2006).
11. Jie Liu, Changxi Yang, Claire Gu, and Guofan Jin, "A Novel Photonic Crystal Fiber with High Nonlinearity and Flattened Dispersion," (in Chinese) *ACTA OPTICA SINICA* **26**, 1569-1574 (2006).
12. Yang Zhang, Changxi Yang, Shiguang Li, He Yan, Jingchan Yin, Claire Gu, and Guofan Jin, "Complete polarization controller based on magneto-optic crystals and fixed quarter wave plates," *Opt. Exp.* **14**, 3483-3490 (2006).
13. Y. Zhang, C. Gu, A. M. Schwartzberg, S. Chen, and J. Z. Zhang, "Optical Trapping and Light Induced Agglomeration of Gold Nanoparticle Aggregates," *Phys. Rev. B* **73**, 165405 (2006); selected for the April 17, 2006 issue of Virtual Journal of Nanoscale Science & Technology.
14. Zhenfeng Xu, Liangcai Cao, Claire Gu, Qingsheng He, and Guofan Jin, "Micro displacement sensor based on line-defect resonant cavity in photonic crystal," *Opt. Exp.* **14**(1), 298-305, (2006).
15. Y. Zhang, C. Gu, A. M. Schwartzberg and J. Z. Zhang, "Surface Enhanced Raman Scattering Sensor Based on D-Shaped Fiber," *Appl. Phys. Lett.* **87**, 123105, (2005).
16. Y. Liu, J. J. Pan, C. Gu, F. Zhou, and L. Dong, "Novel fiber Bragg grating fabrication method with high precision phase control," *Opt. Eng.* **43**(8), 1916-1922, (2004).
17. C. Gu, Y. Xu, Y. Liu, J.J. Pan, F. Zhou, H. He, "Applications of Unconventional Photorefractive Materials in Fiber Optic Devices," *Journal of Optics A: Pure and Applied Optics*, **5**(6), pp. S420-S427, (2003).

18. **C. Gu** (Invited), Y. Liu, Y. Xu, J.J. Pan, F. Zhou and H. He, "Send a Hologram", *IEEE Circuits and Devices* **19(6)**:17-23, (2003).
19. Y. Liu, L. Dong, J. J. Pan, and **C. Gu**, "Strong Phase-Controlled Fiber Bragg Gratings for Dispersion Compensation," *Opt. Lett.* **28**, 786-788, (2003).
20. **C. Gu**, Y. Xu, Y. Liu, J.J. Pan, F. Zhou and H. He, "Applications of Photorefractive Materials in Information Storage, Processing and Communication", *Optical Materials*, **23**, 219-227, (2003).
21. **C. Gu**, "Photorefractive Materials and Devices for Information Systems," *Opto News & Lett. (Translated into Chinese)*, **99**, 2-7 (2002).
22. **C. Gu**, "Applications of weak diffraction theory in volume holographic data storage," *Optical Memory and Neural Networks*, **10**, 35-48, (2001).
23. **C. Gu**, "Weak diffraction theory for volume holographic memory and correlators," *Asian Journal of Physics*, **10**, 135-155, (2001).
24. P. Yeh and **C. Gu**, "Symmetry of viewing characteristics of liquid crystal displays and split compensator configurations," *Displays*, **21**, 31-38, (2000).
25. **C. Gu** and P. Yeh, "Extended Jones Matrix Method and Its Application in the Analysis of Compensators for Liquid Crystal Displays," *Displays*, **20**, 237-257, (1999).
26. X. Yi, P. Yeh, **C. Gu**, and S. Campbell, "Crosstalk in volume holographic memory" (Invited), *Proceedings of the IEEE*, **87**, 1912-1930, (1999).
27. M. Yang, **C. Gu**, and J. Hong "Electro-optic Michelson-Gires-Tournois Modulator for Optical Information Processing and Optical Fiber Communications," *Opt. Letts.* **24**, 1239-1241, (1999).
28. M. Yang and **C. Gu**, "Application of Phase Conjugate Mirrors during the Recording of Volume Holographic Memories," *Appl. Opt.* **38**, 855-862, (1999).
29. M. Yang and **C. Gu**, "Flattopped Tunable Wavelength-Division-Multiplexer Filter Design," *Appl. Opt.* **38**, 1692-1699, (1999); Errata, *Appl. Opt.* **38**, 6293, (1999).
30. F. Dai and **C. Gu**, "Effect of Gaussian References on Crosstalk Noise Reduction," *Opt. Lett.* **22**, 1802-1804, (1997).
31. F. Dai and **C. Gu**, "Statistical Analysis on Extended Reference Method for Volume Holographic Data Storage," *Opt. Eng.* **36**, 1691-1699, (1997).
32. **C. Gu**, F. Dai, and J. Hong, "Statistics of Both Optical and Electrical Noise in Digital Volume Holographic Data Storage," *Elec. Lett.* **18**, 1400-1402, (1996).
33. **C. Gu**, G. Sornat, and J. Hong, "Bit-Error-Rate and Statistics of Complex Amplitude Noise in Holographic Data Storage," *Opt. Lett.* **15**, 1070-1072, (1996).
34. **C. Gu** and P. Yeh, "Form Birefringence Dispersion in Periodic Layered Media," *Opt. Lett.* **21**, 504-506, (1996).
35. **C. Gu**, J.-R. Lien, F. Dai, and J. Hong, "Diffraction Properties of Volume Holographic Diffusers," *J. Opt. Soc. Am. A* **13**, 1704-1711, (1996).
36. A. Chiou, P. Yeh, C.-X. Yang, and **C. Gu**, "Experimental Demonstration of Photorefractive Resonator for Adaptive Fault-Tolerant Coupling," *Optics & Photonics News*, **6**, 20-21, (1995).

37. **C. Gu** and F. Dai, "Cross-talk noise reduction in volume holographic storage with an extended recording reference," *Opt. Lett.* **20**, 2336-2338 (1995).
38. X. Yi, P. Yeh, and **C. Gu**, "Cross-Talk Noise in Volume Holographic Memory with Spherical Reference Beams," *Opt. Lett.* **20**, 1812-1814 (1995).
39. P. Yeh, **C. Gu**, C.-J. Cheng, and K.-Y. Hsu, "Hologram Enhancement in Photorefractive Media," *Opt. Eng.* **34**, 2204-2212 (1995).
40. A. Chiou, P. Yeh, C.-X. Yang, and **C. Gu**, "Photorefractive Coupler for Fault-Tolerant Coupling," *IEEE Photonics Technology Letters* **7**, 789-791 (1995).
41. A. Chiou, P. Yeh, C. Yang, and **C. Gu**, "Photorefractive Spatial Mode Converter for Multimode-to-Single-Mode Fiber-Optic Coupling," *Opt. Lett.* **20**, 1125-1127 (1995).
42. **C. Gu** and P. Yeh, "Form Birefringence of Layered Media and Volume Gratings," *J. Opt. Soc. Am. B.* **12**, 1094-1099 (1995).
43. **C. Gu**, H. Fu, and J.-R. Lien, "Correlation Patterns and Cross-Talk Noise in Volume Holographic Optical Correlators," *J. Opt. Soc. Am. A.* **12**, 861-868 (1995).
44. X. Yi, S. Campbell, P. Yeh, and **C. Gu**, "Statistical analysis of cross-talk noise and storage capacity in volume holographic memory II: image plane holograms," *Opt. Lett.* **20**, 779-781 (1995).
45. S. Campbell, P. Yeh, **C. Gu**, S.-H. Lin, C.-J. Cheng, and K. Hsu, "Optical Restoration of Photorefractive Holograms via Self-Enhanced Diffraction," *Opt. Lett.* **20**, 330-332 (1995).
46. S. Campbell, P. Yeh, **C. Gu** and Q. B. He, "Fidelity of Image Restoration by Partial Phase Conjugation through Multimode Fibers," *Opt. Commun.* **114**, 50-56 (1995).
47. P. Yeh, **C. Gu**, C. J. Cheng, and K. Y. Hsu, "Optical Restoration of Photorefractive Holograms," *Appl. Phys. B.* **61**, 511-514, (1995).
48. W. Wu, Q. B. He, P. Yeh, and **C. Gu**, " $\chi^{(3)}$  Scattering Noises in Nonlinear Optical Phase Conjugation," *Appl. Phys. B—Lasers and Optics* **61**, 611-618 (1995).
49. **C. Gu** and P. Yeh, "Dynamical Equation for the Polarization State in Inhomogeneous Anisotropic Media," *Appl. Opt.* **33**, 60-63 (1994).
50. X. Yi, P. Yeh, and **C. Gu**, "Statistical Analysis of Cross-Talk Noise and Storage Capacity in Volume Holographic Memory," *Opt. Lett.* **19**, 1580-1582, (1994).
51. **C. Gu**, P. Yeh, and D. Botez, "Confined Modes in Dual-State 2-dimensional Waveguides," *Opt. Lett.* **19**, 28-30, 1994.
52. **C. Gu** and P. Yeh, "Applications of Photorefractive Volume Holography in Optical Computing," *International J. Nonlinear Optical Physics*, **3**, 317-37, (1994).
53. **C. Gu** and P. Yeh, "Partial Phase Conjugation, Fidelity, and Reciprocity," *Opt. Commun.* **107**, 353-357, (1994).
54. **C. Gu**, S. Campbell, and P. Yeh, "Optical Matrix Multiplier: Grating Degeneracy Recycled," *Optics & Photonics News*, **4**, 47, (1993).
55. **C. Gu** and P. Yeh, "Photorefractive Devices for Optical Neural Networks," *Optical Memory and Neural Networks* **2**, 185-198, (1993).

56. K. Curtis, **C. Gu**, and D. Psaltis, "Cross Talk in Wavelength-Multiplexed Holographic Memories," *Opt. Lett.* **18**, 1001-1003 (1993).
57. Y. Zhu, D. P. Zhang, P. Yeh, and C. Gu, "High Efficiency Photorefractive BaTiO<sub>3</sub> Plate for Optical Image Processing," *Chinese Science Bulletin* **38**, 1424-1427 (1993).
58. **C. Gu**, S. Campbell, and P. Yeh, "Matrix-Matrix Multiplication Using Grating Degeneracy in Photorefractive Media," *Opt. Lett.* **18**, 146-148 (1993).
59. P. Yeh, **C. Gu**, and D. Botez, "Matrix Analysis of Wave Propagation in Real-Index Anti-Guided Arrays," *J. Opt. Soc. Am. B* **10**, 709-715 (1993).
60. **C. Gu**, A. Chiou, and J. Hong, "Cross-Talk Noise in Photorefractive Interconnection," *Appl. Opt.* **32**, 1437-1440 (1993).
61. **C. Gu** and P. Yeh, "Extended Jones Matrix Method II," *J. Opt. Soc. Am. A.* **10**, 966-973 (1993).
62. P. Yeh, **C. Gu**, and D. Botez, "Optical Properties of Dual-State Fabry-Perot Etalons," *Opt. Lett.* **17**, 1818-1820 (1992).
63. P. Yeh and **C. Gu**, "Photorefractive Neural Networks," *Acta Photonica Sinica*, **21**, 289-299 (1992).
64. **C. Gu**, "Artificial Neural Networks and Photorefractive Holography," *Opto News & Lett. (in Chinese)*, **34**, 7-10 (1992).
65. **C. Gu**, J. Hong, I. McMichael, R. Saxena, and F. Mok, "Cross Talk Limited Storage Capacity of Volume Holographic Memory," *J. Opt. Soc. Am. A.* **9**, 1978-1983 (1992).
66. **C. Gu** and J. Hong, "Noise Gratings Formed during the Multiple Exposure Schedule in Photorefractive Media," *Opt. Commun.* **93**, 213-218 (1992).
67. Q. B. He, P. Yeh, and C. Gu, "Analysis of Photorefractive Fabry-Perot Etalon: A Novel Device," *Opt. Lett.* **17**, 664-666 (1992).
68. **C. Gu**, J. Hong, and P. Yeh, "Diffraction Properties of Momentum Mismatched Gratings in Photorefractive Media," *J. Opt. Soc. Am. B.* **9**, 1473-1479 (1992).
69. L.-K. Dai, C. Gu, and P. Yeh, "Effect of Position Dependent Time Constant on Photorefractive Two-Wave Mixing," *J. Opt. Soc. Am. B.* **9**, 1693-1697 (1992).
70. P. Yeh, D. Zhang and C. Gu, "Parallel Subtraction of Fourier Power Spectrum Using Holographic Interferometry," *Opt. Lett.* **17**, 70-72 (1992).
71. L.-K. Dai, Y.-S. Gou, C. Gu, and P. Yeh, "Instabilities in Coupled Photorefractive Ring Cavities and Self-Pumped Phase Conjugators, I: Mean-Field Model and Linear Stability Analysis," *Appl. Phys. B—Photophysics and Laser Chemistry*, **54**, 57-70 (1992).
72. L.-K. Dai, Y.-S. Gou, C. Gu, and P. Yeh, "Instabilities in Coupled Photorefractive Ring Cavities and Self-Pumped Phase Conjugators, II: Numerical Results," *Appl. Phys. B—Photophysics and Laser Chemistry*, **54**, 156-166 (1992).
73. **C. Gu**, J. Hong and S. Campbell, "2-D Shift-Invariant Volume Holographic Correlator," *Opt. Comm.* **88**, 309-314 (1992).
74. **C. Gu**, S. Campbell, J. Hong, Q. B. He, D. Zhang, and P. Yeh, "Optical Thresholding and Maximum Operations," *Appl. Opt.* **10**, 5661-5665 (1992).

75. Q. B. He, P. Yeh, C. Gu and R. R. Neurgaonkar, "Multigrating Competition Effects in Photorefractive Mutually Pumped Phase Conjugation," *J. Opt. Soc. Am. B* **9**, 114-120 (1992).
76. P. Yeh and C. Gu, "Photorefractive Media for Optical Interconnections," *International J. Nonlinear Optical Physics*, **1**, 167-201 (1992).
77. C. Gu and P. Yeh, "Scattering due to randomly distributed charge particles in photorefractive crystals," *Opt. Lett.* **16**, 1572-1574 (1991).
78. Y. Qiao, D. Psaltis, C. Gu, J. Hong, P. Yeh, and R. R. Neurgaonkar, "Phase-Locked Sustainment of Photorefractive Holograms Using Phase Conjugation," *J. Appl. Phys.*, **70**, 4646-4648 (1991).
79. C. Gu and P. Yeh, "Reciprocity in Photorefractive Wave Mixing," *Opt. Lett.* **16**(7), 455-457, (1991).
80. C. Gu and P. Yeh, "Theory of Photorefractive Phase Conjugate Ring Oscillators," *J. Opt. Soc. Am. B.* **8**, 1428-1432, (1991).
81. C. Gu and P. Yeh, "Contra-directional Nonlinear-Optical Bragg Scattering in Kerr Media," *Opt. Lett.* **16**(3), 129-131, (1991).
82. C. Gu, J. Hong, H.-Y. Li, D. Psaltis, and P. Yeh, "Dynamics of Grating Formation in Photovoltaic Media," *J. Appl. Phys.* **69**(3), 1167-1172, (1991).
83. R. Saxena, C. Gu, and P. Yeh, "Properties of Photorefractive Gratings with Complex Coupling Constants," *J. Opt. Soc. Am. B.* **8**, 1047-1052, (1991).
84. L.-K. Dai, Y.-S. Gou, P. Yeh, and C. Gu, "Photorefractive Mode Coupling between Two Unidirectional Ring Oscillators," *Appl. Phys. B.—Photophysics and Laser Chemistry* **53**, 153-159, (1991).
85. C. Gu and P. Yeh, "Diffraction Properties of Fixed Gratings in Photorefractive Media," *J. Opt. Soc. Am. B.* **7**(12), 2339-2346, (1990).
86. D. Psaltis, D. Brady, X.-G. Gu, and S. Lin, "Holography in Artificial Neural Networks", *Nature*, **343**, 325-330, (25 Jan. 1990).
87. D. Psaltis, A. Yamamura, K. Hsu, S. Lin, X.-G. Gu, and D. Brady, "Optoelectronic Implementations of Neural Networks", *IEEE Communications Magazine*, **27**(11), 37-40, (1989).
88. H. Lee, X.-G. Gu and D. Psaltis, "Volume Holographic Interconnections with Maximal Capacity and Minimal Cross Talk", *J. Appl. Phys.* **65**(6), 2191-2194, (1989).
89. R.-K. Su and X.-G. Gu, "The Soliton Solutions of the (1+1)-dimensional Real  $\phi^3+\phi^4$  Field at Finite Temperature", *J. Phys. A: Math. Gen.* **19**, 2891-2901, (1986).

### Conference Papers

1. H. Yan, C. Gu, C. Yang, J. Liu, G. Jin, J. Zhang, L. Hou, and Y. Yao, "Hollow Core Photonic Crystal Fiber Surface Enhanced Raman Probe," BiOS 2007 (SPIE Photonics West 2007), San Jose, California, 20–25 January 2007.
2. Y. Yao, C. Gu, C. Lu, J. Zhang, H. Yan, and S. Fan, "Single-fiber Surface Enhanced Raman Scattering Probe," to be presented at the International Conference on Nanoscience and Technology (ICN&T 2006), Basel, Switzerland, July 30 - August 4, 2006.

3. Y. Zhang, **C. Gu**, A. M. Schwartzberg and J. Z. Zhang, "Light Induced Further Aggregation of Metal Aggregates," SPIE Photonics West, San Jose, CA, Jan. 2006.
4. Y. Zhang, **C. Gu**, A. M. Schwartzberg and J. Z. Zhang, "Single-Fiber Raman Probe Based on Surface Enhanced Raman Scattering (SERS)," IEEE Sensors, Irvine, California, Oct. 2005.
5. Y. Zhang, **C. Gu**, A. M. Schwartzberg and J. Z. Zhang, "Raman Sensor Based on Surface Enhanced Raman Scattering and D-shaped Fibers," OSA Annual Meeting, Tucson, Arizona, Oct. 2005.
6. **C. Gu** (Invited), Y. Zhang, A. M. Schwartzberg and J. Z. Zhang, "Ultra-sensitive Compact Fiber Sensor Based on Nanoparticle Surface Enhanced Raman Scattering," SPIE Annual Meeting, San Diego, CA, July 31-Aug. 5, 2005.
7. Y. Zhang, K. Xu, **C. Gu**, A. Schwartzberg, J.Z. Zhang, "Thermal and electrical conductivity of metal nanoparticles in solutions and films", SPIE Annual Meeting, San Diego, CA, July 31-Aug. 5, 2005.
8. J. Z. Zhang (Invited), A.M. Schwartzberg, Y. Zhang, **C. Gu**, "Optical properties and emerging biomedical applications of nanomaterials", Photonics West, SPIE, San Jose, California, Jan. 2005.
9. **C. Gu** (Invited), Y. Xu, Y. Liu, J. J. Pan, F. Zhou, L. Dong, and H. He, "Fiber Based Devices for DWDM Optical Communication Systems," SPIE Photonics Asia, Beijing, China, Nov. 7-11, 2004.
10. **C. Gu** (Invited), Y. Xu, J. J. Pan, F. Zhou, and H. He, "In-Line DWDM Wavelength Switch Using H-PDLC and Side-Polished Fibers," SPIE'04, Denver, Colorado, August 2-6, 2004.
11. Y. Xu, **C. Gu**, J. J. Pan, F. Zhou, and H. He, "Inline Variable Optical Attenuator Based on Side-Polished Fiber and Nano-Sized Liquid Crystal," *the 2003 Annual Meeting of Optical Society of America*, Oct. 5-9, Tucson, AZ, (2003).
12. Y. Liu, **C. Gu** (Invited), J. J. Pan, L. Dong, and F. Q. Zhou, "Novel Fiber Bragg Grating Fabrication Method by High Precision Shutter Control," SPIE'03, San Diego, August 3-8, 2003.
13. J.J. Pan, Feng Qing Zhou, Yisi Liu, **Claire Gu**, Liang Dong, Albert Li, "A novel multi-channel dispersion slope compensator using sampled FBG," Paper P2-2 in The 8th OptoElectronics and Communications Conference, July 8~11, 2003, Shanghai, China.
14. J. J. Pan, Liang Dong, Yisi Liu, **Claire Gu**, Feng Qing Zhou, Albert Li, "Novel FBG writing system with arbitrary amplitude and phase control," Paper P2-3 in The 8th OptoElectronics and Communications Conference, July 8~11, 2003, Shanghai, China.
15. **C. Gu** (Invited), "Holographic Memory for High Density Data Storage and High Speed Pattern Recognition," Photonics Asia, Shanghai, Oct. 14-18, 2002.
16. J.J. Pan, F. Zhou, Y. Liu, and **C. Gu**, "Multi-Channel Dispersion Slope Compensation Using a Novel Sampled Fiber Grating," WOC2002, Banff, July 17-19, 2002, paper 356-134.
17. **C. Gu** (Invited), Y. Xu, Y. Liu, J.J. Pan, F. Zhou and H. He, "Applications of New Photorefractive Materials in Fiber Optic Devices," SPIE Annual Meeting, Seattle, July 7-11, 2002, paper 4803-17.
18. **C. Gu** (Invited), Y. Xu, Y. Liu, J.J. Pan, F. Zhou and H. He, "Applications of Photorefractive Materials in Information Storage, Processing and Communications," *the 8<sup>th</sup> International Conference on Electronic Materials*, Xi'an, China, June 10-14, (2002).
19. **C. Gu** (Invited), "Photorefractive Devices for Information Systems," paper WBB1, *the 14<sup>th</sup> Annual Meeting of the IEEE Lasers & Electro-Optics Society*, San Diego, CA, Nov. 11-15, (2001).

20. **C. Gu** (Invited) and P. Yeh, "Photorefractive Materials, Effects, and Applications," paper 4419-502, 4<sup>th</sup> Iberoamerican Meeting on Optics and 7<sup>th</sup> Latin American Meeting on Optics, Lasers, and Their Applications, Tandil, Argentina, Sept. 3-7, (2001); *SPIE Proceedings*, 4419, 9-13 (2001).
21. M. Yang, C. Gu, and J. Hong "Michelson-Gires-Tournois Modulator," paper TuV4, *the 1998 Annual Meeting of Optical Society of America*, Sept. 26 - Oct. 1, (1999).
22. P. Yeh and **C. Gu**, "Fundamental Viewing Symmetry in Liquid Crystal Displays," paper TuXX58, *the 1998 Annual Meeting of Optical Society of America*, Sept. 26 - Oct. 1, (1999).
23. **C. Gu** (Invited), "Cross-Talk Noise in Volume Holographic Storage," paper FQ2, *CLEO/Pacific Rim*, Seoul, Korea, Aug. 30-Sept 3, (1999).
24. **C. Gu** (Invited), "Modeling of Volume Holographic Storage," *International Workshop on Holographic Data Storage*, Nice, France, Mar. 8-11, (1999).
25. **C. Gu** (Invited), "Analysis of Volume Holographic Storage Systems," *1998 International Photonics Conference*, Taipei, Taiwan, Dec. 15-18, (1998).
26. M. Yang and C. Gu, "Improvement of Optical Storage Properties Utilizing a Phase-Conjugate Mirror," *the 1998 Annual Meeting of Optical Society of America*, Oct. 4-9, (1998).
27. F. Dai and C. Gu, "3-dimensional Multiplexing for High Density Holographic Data Storage," *the 1998 Annual Meeting of Optical Society of America*, Oct. 4-9, (1998).
28. **C. Gu** (Invited) and M. Yang, "Recording Volume Holographic Memories with a Phase Conjugate Mirror," paper 3554-35, *1998 SPIE Photonics China*, Sept. 16-19, (1998).
29. P. Yeh (Invited) and **C. Gu**, "Birefringent Optical Compensators for TN-LCDs," *1998 SPIE Asia Pacific Symposium on Optoelectronics - Display Technologies II*, July 9-11, (1998).
30. **C. Gu** (Invited), "Volume Holography for Optical Storage," *1997 North American Chinese Photonics Technology Conference*, Los Angeles, Oct. 17-19, (1997).
31. F. Dai and C. Gu, "Effect of Gaussian References on Crosstalk Noise Reduction in Volume Holographic Memory," *Optical Society of America Annual Meeting*, Long Beach, Oct. 12-17, (1997).
32. M. Yang and C. Gu, "Flat-Top Tunable Filter Using Fabry-Perot Etalon with Dielectric Mirrors," *Optical Society of America Annual Meeting*, Long Beach, Oct. 12-17, (1997).
33. **C. Gu** (Invited), J. Lien, F. F. Dai, and J. H. Hong, "Applications of Volume Holographic Diffusers in Projection Displays," *SPIE Proceedings*, **3013**, paper 3013-11, (1997).
34. **C. Gu** (Invited), "Reciprocity in Photorefractive Wave Mixing and Phase Conjugation," *SPIE Conference on Photorefractive Materials*, Nov. 4-5, 1996, Beijing, China, paper 2896-521, (1996).
35. **C. Gu** (Invited), "Photorefractive Crystals for Volume Holographic Data Storage," *SPIE Conference on Photorefractive Materials*, Nov. 4-5, 1996, Beijing, China, paper 2896-522, (1996).
36. **C. Gu**, F. Dai, G. Sornat and J. Hong, "Bit-Error-Rate Estimation in Holographic Memory," Paper MAAA6 in *Optical Society of America Annual Meeting*, Rochester, New York, (1996), pp. 97.
37. F. Dai and C. Gu, "Extended Reference Method for Volume Holographic Storage," Paper MI6 in *Optical Society of America Annual Meeting*, Rochester, New York, (1996), pp. 74.

38. F. Dai and C. Gu, (Invited) "Extended Reference Method for Cross-Talk Noise Reduction in Photorefractive Holographic Data Storage," *SPIE Conference on Photorefractive Fiber and Crystal Devices: Materials, Optical Properties, and Applications*, Aug. 4-9, 1996, Denver, CO. paper 2849-12, (1996).
39. C. Gu, and G. Sornat, and J. Hong, "Statistics of Cross-Talk Noise in Holographic Data Storage." *International Symposium on Optical Memory and Optical Data Storage*, pp. 61-63, Maui, Hawaii, July 8-12, (1996).
40. Yi, X., C. Yang, S.-H. Lin, P. Yeh, and C. Gu, "Spectral-Hole-and-Angle Multiplexed Volume Holographic Memory," *International Symposium on Optical Memory and Optical Data Storage*, pp. 112-114, Maui, Hawaii, July 8-12, (1996).
41. C. Gu, (Invited) "Crosstalk Noise in Holographic Data Storage," *International Symposium on Holographic Memories'96*, May 12-15, 1996, Athens, Greece.
42. C. Gu and F. Dai, "Cross-Talk Noise Reduction in Photorefractive Optical Memory," *1996 International Topical Meeting on Optical Computing*, Sendai, Japan, April 21-25, 1996. Technical Digest, **1**, pp. 234-235.
43. X. Yi, C. Yang, S.-H. Lin, P. Yeh, and C. Gu, "Cross-Talk Noise and Storage Density of Volume Holographic Memory with Spectral Hole Burning Materials," *1996 International Topical Meeting on Optical Computing*, Sendai, Japan, April 21-25, 1996. Technical Digest, **1**, pp. 134-135.
44. C. Gu, F. Dai, G. Sornat, and J. Hong, (Invited) "Noise Statistics in Holographic Data Storage," *Workshop on Data Encoding for Page—Oriented Optical Memories, Phoenix, (Sponsored by ARPA and Rome Lab.)* Mar. 27-28, 1996.
45. C. Gu, J.-R. Lien, F. Dai, and J. Hong, "Analysis of Volume Holographic Diffusers," Paper MGG5 in *Optical Society of America Annual Meeting*, Portland, Oregon, (1995), pp. 58-59.
46. C. Gu and P. Yeh, "Dispersion of Form Birefringence in Periodic Media," Paper ThHH2 in *Optical Society of America Annual Meeting*, Portland, Oregon, (1995), pp. 153-154.
47. C. Gu, "Reciprocity in Nonlinear Optical Wave Mixing and Phase Conjugation," *2<sup>nd</sup> Mediterranean Workshop and Topical Meeting—Novel Optical Materials and Applications*, Cetraro, Italy, May 28 - June 2, 1995.
48. A. Chiou, P. Yeh, C.-X. Yang, and C. Gu, "Multimode to Singlemode Fiber-Optic Coupling Using Mutually-Pumped Phase Conjugation," *Technical Digest of Photorefractive Materials, Effects, and Devices*, June 11-14, 1995, Colorado, 439-442 (1995).
49. Z. Ye, S.-Y. Chu, C. Gu, and K. Uchino, "Photochromic Effect in WO<sub>3</sub> Doped (Pb,Lu)(Zr,Ti)O<sub>3</sub> Ceramics and Its Erasing Process," Paper P5-18 in *The Ninth International Symposium on the Applications of Ferroelectrics (ISAF'94)*, Aug. 7-10, 1994, Penn State Scanticon Conference Center, PA, (1994).
50. P. Yeh, C. Yang, C. Gu, and A. E. Chiou, "Photorefractive Resonators for Fault-Tolerant Coupling," Paper ThC3 in *Optical Society of America Annual Meeting*, Dallas, Texas, (1994), pp. 147-148.
51. J.-R. Lien, H. Fu, and C. Gu, "Analysis of Grating Degeneracy and Nonlinear Optical Matrix Multipliers," Paper FL2 in *Optical Society of America Annual Meeting*, Dallas, Texas, (1994), pp. 186.
52. H. Fu, J.-R. Lien, and C. Gu, "Optical Correlation using Multiplexed Volume Holograms as Matched Filters," Paper WKK5 in *Optical Society of America Annual Meeting*, Dallas, Texas, (1994), pp. 131.
53. S. Campbell, P. Yeh, Q. B. He, and C. Gu, "Studies of Image Fidelity during Partial Phase Conjugation," paper CMC6 in *Conference on Lasers and Electro-Optics*, **8**, 1994 OSA Technical Digest Series (Optical Society of America, Washington, D.C., 1994), pp.12-13.

54. P. Yeh, **C. Gu**, C. J. Cheng, and K. Y. Hsu, "Hologram Restoration and Enhancement in Photorefractive Media," (Invited) NLO'94, July 25-29, Hawaii, *Nonlinear Optics: Materials, Fundamentals and Applications*, paper THB1, pp. 421-423, (IEEE.LEOS, 1994).
55. S. Campbell, P. Yeh, **C. Gu**, S.-H. Lin, C.-J. Cheng, and K.-Y. Hsu, "Optical Self-Enhancement of Photorefractive Holograms," NLO'94, July 25-29, Hawaii, *Nonlinear Optics: Materials, Fundamentals and Applications*, paper THB4, pp. 430-432, (IEEE.LEOS, 1994).
56. X. Yi, P. Yeh, and **C. Gu**, "Cross-talk Noise and Storage Density in Holographic Memory," NLO'94, July 25-29, Hawaii, *Nonlinear Optics: Materials, Fundamentals and Applications*, paper THB6, pp. 436-438, (IEEE.LEOS, 1994).
57. Z. Ye, S. Y. Chu, **C. Gu**, and K. Uchino, "Photostrictive Spatial Light Modulator," *International Symposium on Materials for Intelligent/Smart Systems & Adaptive Structures, American Ceramic Society, Pac. Rim*, Nov. 1993, Hawaii.
58. **C. Gu**, "Volume Holography and Its Applications," Lecture at *the Second International School & Topical Meeting on Applications of Nonlinear Optics*, Prague, Aug. 16-20, pp. 7-10, 1993.
59. P. Yeh, **C. Gu**, S. Zhou, and S. Campbell, "Photorefractive Nonlinear Optics for Optical Computing," *Conference Proceedings of IEEE/LEOS Annual Meeting*, (San Jose, California, 1993), 317-319 (1993).
60. A. Chiou, P. Yeh, **C. Gu**, and R. Neurgaonkar, "Beam Coupling and Spatial Mode Conversion in Photorefractive Planar Waveguide," *Conference Proceedings of IEEE/LEOS Annual Meeting*, (San Jose, California, 1993), 319-320 (1993).
61. **C. Gu** and P. Yeh, "Applications of Photorefractive Media in Optical Computing," (invited paper), *World Optical Conference'93*, Shanghai, Aug. 30 - Sept. 3, 1993, paper WeL1, pp. 69-70.
62. P. Yeh, **C. Gu**, and D. Botez, "Matrix Analysis of Dual-State Waveguide Arrays and Fabry-Perot Etalons," paper TuS6, OSA Annual Meeting, Toronto, *Annual Meeting Conference Proceedings, Optical Society of America, (Washington, D.C.)*, **16**, 86-87, (1993).
63. A. Chiou, P. Yeh, and **C. Gu**, "Spatial Mode Conversion in Photorefractive Fibers," paper MD8, OSA Annual Meeting, Toronto, *Annual Meeting Conference Proceedings, Optical Society of America, (Washington, D.C.)*, **16**, 7, (1993).
64. **C. Gu**, "Applications of Photorefractive Crystals to Optical Computing," *Gordon Research Conference on Optical Signal Processing and Holography*, June 28 - July 2, 1993, Plymouth State College, Plymouth, New Hampshire.
65. P. Yeh, **C. Gu**, S. Zhou, and S. Campbell, "Recent Advances in Photorefractive Optical Computing," (Invited Paper) (Paper T9) at *the 8<sup>th</sup> Conference of the Australian Optical Society*, Sydney, Feb. 3-5, 1993.
66. **C. Gu**, S. Campbell, and P. Yeh, "Optical Matrix Multiplication using Grating Degeneracy in Photorefractive Media," *Optical Computing Technical Digest, 1993 (Optical Society of America, Washington, D.C.)*, **7**, pp. 119-122, 1993.
67. Z. Ye, S.-Y. Chu, **C. Gu**, and K. Uchino, "Spatial light Modulator Using Photostrictive Ceamics," *Conference Proceedings of the 95<sup>th</sup> Annual meeting of American Ceramic Society*, paper EP-13, (1993).
68. **C. Gu**, S. Campbell, and P. Yeh, "Nonlinear Optical Matrix Multiplier," LAX, OE/Lase'93, *Proc. SPIE* **1853**, 239-246, (1993).
69. **C. Gu** and J. Hong, "Capacity of Wavelength Multiplexed Holographic Memory," paper WT2 in *OSA Annual Meeting, Albuquerque, New Mexico, Annual Meeting Conference Proceedings (Optical Society of America, Washington, D.C.)*, **23**, 111-112 (1992).

70. **C. Gu**, J. Hong, and P. Yeh, "Noise gratings in multiplexed photorefractive holograms," paper WE3 in OSA Annual Meeting, Albuquerque, New Mexico, *Annual Meeting Conference Proceedings (Optical Society of America, Washington, D.C.)*, **23**, 102 (1992).
71. **C. Gu** and P. Yeh, "Extended Jones Matrix Method for Gyrotropic Media," paper TuII3 in OSA Annual Meeting, Albuquerque, New Mexico, *Annual Meeting Conference Proceedings (Optical Society of America, Washington, D.C.)*, **23**, 86 (1992).
72. **C. Gu**, J. Hong, and P. Yeh, "Volume Holographic Storage in Photorefractive Media," *SPIE Proceedings* **1812**, 97-102 (1992).
73. W. Wu, Q. B. He, P. Yeh, and **C. Gu**, "Quantum Noise and Its Reduction in Phase Conjugators," paper TuB2 in NLO'92, Aug. 17-21, Maui, *Nonlinear Optics: Materials, Fundamentals and Applications* **18**, 163-165, (1992).
74. **C. Gu**, A. Chiou, and J. Hong, "Crosstalk Noise in Photorefractive Interconnection," paper CTuK26 in *Conference on Lasers and Electro-Optics, 1992* (Optical Society of America, Washington, D.C. 1992) pp.138-139.
75. P. Yeh, W. Wu, Q. B. He, and **C. Gu**, "Quantum Noise in Phase Conjugation via Four-Wave Mixing," paper CTuK25 in *Conference on Lasers and Electro-Optics, 1992* (Optical Society of America, Washington, D.C. 1992) pp.136-138.
76. Q. B. He, P. Yeh, and C. Gu, "Photorefractive Fabry-Perot Etalon: A Novel Device," paper CMJ2 in *Conference on Lasers and Electro-Optics, 1992* (Optical Society of America, Washington, D.C. 1992) pp.56-57.
77. **C. Gu**, R. Saxena, L.-C. Huang, Q. B. He, and P. Yeh, "Self-Pumped Ring Phase Conjugation Using Reflection Gratings in Kerr Media," LAX, OE/Lase'92, *Proc. SPIE* **1626**, 243-252 (1992).
78. P. Yeh, D. Zhang and **C. Gu**, "Parallel Subtraction of Fourier Power Spectrum Using Nonlinear Optical Technique," *Proc. SPIE* **1626**, 228-237 (1992).
79. P. Yeh, **C. Gu**, and J. Hong, "Photorefractive Devices for Optical Information Processing," *Proc. SPIE* **1562**, 32-43 (1991).
80. **C. Gu** and P. Yeh, "Scattering due to random space charge field in photorefractive crystals," paper MJ6 in OSA Annual Meeting, San Jose, CA, Annual Meeting Conference Proceedings, Optical Society of America, (Washington, D.C.), **17**, 10, 1991.
81. **C. Gu**, J. Hong and S. Campbell, "Volume holographic correlator," paper FA1 in OSA Annual Meeting, San Jose, CA, Annual Meeting Conference Proceedings, Optical Society of America, (Washington, D.C.), **17**, 191, 1991.
82. Q. B. He, **C. Gu** and P. Yeh, "Investigation of a photorefractive phase conjugate resonator," paper MU5 in OSA Annual Meeting, San Jose, CA, Annual Meeting Conference Proceedings, Optical Society of America, (Washington, D.C.), **17**, 21-22, 1991.
83. J. H. Hong, I. McMichael, **C. Gu**, R. Saxena, and F. Mok, "Crosstalk limited storage capacity of volume holographic memory," paper TuH3 in OSA Annual Meeting, San Jose, CA, Annual Meeting Conference Proceedings, Optical Society of America, (Washington, D.C.), **17**, 60, 1991.
84. F. Vachss, **C. Gu**, J. Hong, and T. Chang, "Fundamental Noise Limits in Photorefractive Systems," paper MC7 in *Technical Digest on Photorefractive Materials, Effects, and Devices, 1991* (Optical Society of America, Washington, D.C. 1991), **14**, pp. 92-96.
85. L.-K. Dai, Y.-S. Gou, **C. Gu**, and P. Yeh, "Instabilities in Coupled Photorefractive Ring Cavities and Self-Pumped Phase Conjugators," paper WC21 in *Technical Digest on Photorefractive Materials, Effects, and Devices, 1991* (Optical Society of America, Washington, D.C. 1991), **14**, pp. 432-435.

86. Q. B. He, S. Campbell, C. Gu, and P. Yeh, "Instabilities in Photorefractive Bidirectional Ring Oscillators," paper MB4 in *Technical Digest on Photorefractive Materials, Effects, and Devices, 1991* (Optical Society of America, Washington, D.C. 1991), **14**, pp. 47-50.
87. **C. Gu** and P. Yeh, "Reciprocity and Constants of Integration in Photorefractive Wave Mixing," paper CTuW24 in *Conference on Lasers and Electro-Optics, 1991* (Optical Society of America, Washington, D.C. 1991) p.186.
88. Q. B. He, **C. Gu**, and P. Yeh, "A Multiwave Mixing Model of Photorefractive Mutually-Pumped Phase Conjugation," paper CMC6 in *Conference on Lasers and Electro-Optics, 1991* (Optical Society of America, Washington, D.C. 1991) pp.26-27.
89. Y. Qiao, D. Psaltis, **C. Gu**, J. Hong, and P. Yeh, "Phase-Locked Sustainment of Photorefractive Holograms Using Phase Conjugation," paper CWO6 in *Conference on Lasers and Electro-Optics, 1991* (Optical Society of America, Washington, D.C. 1991) pp.328-329.
90. **C. Gu** and P. Yeh, "Optical Thresholding and Max Operation," Topical Meeting on Optical Computing, *Technical Digest Series*, Optical Society of America, (Washington, D.C.), **6**, 68, (1991).
91. **C. Gu**, J. Hong, H.-Y. Li, D. Psaltis, and P. Yeh, "Dynamics of Grating Formation in Photovoltaic Media," OSA Annual Meeting, 1990, *Technical Digest Series*, Optical Society of America, (Washington, D.C.), **15**, 216, (1990).
92. L.-K. Dai, Y.-S. Gou, P. Yeh, and C. Gu, "Photorefractive Mode Coupling between Two Unidirectional Ring Oscillators," OSA Annual Meeting, 1990, *Technical Digest Series*, Optical Society of America, (Washington, D.C.), **15**, 192, (1990).
93. **C. Gu** and P. Yeh, "Diffraction Properties of Fixed Gratings in Photorefractive Media," OSA Annual Meeting, 1990, *Technical Digest Series*, Optical Society of America, (Washington, D.C.), **15**, 279, (1990).
94. P. Yeh and **C. Gu**, "Stimulated Brillouin Scattering Revisited," NLO'90, July 16-20, Kauai, *Nonlinear Optics: Materials, Phenomena and devices*, paper TP28, pp. 141-142, (IEEE.LEOS, 1990).
95. **X.-G. Gu** and D. Psaltis, "Local and Asymmetric Interconnections Using Volume Holograms", OSA Annual Meeting, 1988, *Technical Digest Series*, Optical Society of America, (Washington, D.C.), **11**, 148, (1988).
96. D. Psaltis, **X.-G. Gu** and D. Brady, "Fractal Sampling Grids for Holographic Interconnections", *SPIE Proceedings*, **963-70**, 468-474, (1988).
97. D. Brady, **X.-G. Gu**, and D. Psaltis, "Photorefractive Crystals in Optical Neural Computers", *SPIE Proceedings*, **882-20**, 132-136, (1988).
98. D. Psaltis, J. Yu, **X.-G. Gu** and H. Lee, "Optical Neural Nets Implemented with Volume Holograms", Topical Meeting on Optical Computing, *Technical Digest Series*, Optical Society of America, (Washington, D.C.), **11**, 129, (1987).

### **Books and Book Chapters**

1. **Claire Gu**, Pochi Yeh, Xingpeng Yang, and Guofan Jin, "Wide Viewing Angle and High Brightness Liquid Crystal Displays Incorporating Birefringent Compensators and Energy-Efficient Backlight," in "Advances in Display Technologies," Achintya K Bhowmik Ed., Research Signpost, to be published, 2006.
2. **Claire Gu**, Yisi Liu, Yuan Xu, J. J. Pan, Fengqing Zhou, Liang Dong, and Henry He, "Photorefractive Materials and Devices for Passive Components in WDM Systems," in *Micro- and Opto-Electronic Materials and Structures: Physics, Mechanics, Design, Reliability, Packaging*, Ephraim Suhir, C. P. Wong and Y. C. Lee, eds., Springer Verlag, to be published, 2006.

3. **C. Gu**, "High Density Data Storage—New Prospects," in Encyclopedia of Optical Engineering, Ronald G. Driggers, Ed. Marcel Dekker, September, 2003.
4. **C. Gu**, P. Yeh, X. Yi, and J. Hong, "Fundamental Noise Sources in Volume Holographic Storage," Chapter 1.3 in Holographic Data Storage, H. Coufal, D. Psaltis and G. Sincerbox, eds., Springer Verlag, 2000.
5. X. Yi, P. Yeh, and C. Gu, "Cross Talk in Volume Holographic Memory," Chapter 7 in Photorefractive Optics, F. T. S. Yu and S. Yin, eds., Academic Press, 2000.
6. P. Yeh and **C. Gu**, *Optics of Liquid Crystal Displays*, Wiley, 1999.
7. P. Yeh and **C. Gu**, eds. *Landmark Papers on Photorefractive Nonlinear Optics*, World Scientific Publishing Co., (New Jersey, 1995).
8. P. Yeh and **C. Gu**, eds. *Photorefractive Materials, Effects, and Applications*, SPIE Critical Reviews, (1994).
9. P. Yeh and **C. Gu**, "Photorefractive Nonlinear Optics and Applications," *Nonlinear Optics and Optical Physics*, I. C. Khoo, J. F. Lam and F. Simoni eds., (World Scientific Publishing Co., New Jersey, 1994), Chap. 12, pp. 341-388.
10. P. Yeh and **C. Gu**, "Photorefractive materials and their applications," *Materials for Optoelectronic Applications*, R. R. Neurgaonkar, ed. Trans Tech Publishing Co. (Switzerland), 1994.
11. D. Psaltis, **X.-G. Gu** and D. Brady, "Holographic Implementations of Neural Networks", *An Introduction to Neural and Electronic Networks*, S. F. Zornetzer, J. L. Davis and Clifford Lau eds., Academic Press, Inc., (New York) 1990.
12. D. Psaltis, D. Brady, **X.-G. Gu** and K. Hsu, "Optical Implementation of Neural Computers", *Optical Processing and Computing*, H. Arsenault, ed., Academic Press, Inc., (New York) 1989.