

PUBLICATIONS

Refereed Journal Papers

1. E. Suhir, C. Gu, and L. Cao, "Predicted thermal stresses in a circular assembly with identical adherends," accepted by *Journal of Applied Mechanics*.
2. X. Yang, C. Gu, F. Qian, Y. Li, and J. Z. Zhang, "Highly Sensitive Detection of Proteins and Bacteria in Aqueous Solution Using Surface-Enhanced Raman Scattering and Optical Fibers," *Anal. Chem.*, 83 (15), 5888–5894 (2011).
3. T. J. Longson, R. Bhowmick, C. Gu, and B. A. Cruden, "Core_Shell Interactions in Coaxial Electrospinning and Impact on Electrospun Multiwall Carbon Nanotube Core, Poly(methyl methacrylate) Shell Fibers," *J. Phys. Chem. C* 115, 12742–12750 (2011).
4. S. Wang, L. Cao, H. Gu, Q. He, C. Gu, and G. Jin, "Channel analysis of the volume holographic correlator for scene matching," *Opt. Exp.*, 19, 3870-3880 (2011).
5. C. Gu (Invited), "Detecting molecules with nanoparticles and optical fibers," *Silicon Valley Engineering Council Journal*, 3, 48-61 (2011).
6. X. Yang, C. Shi, R. Newhouse, J. Z. Zhang, and C. Gu, "Hollow-core photonic crystal fibers for surface-enhanced Raman scattering Probes," *Int. J. Opt.* 2011, 754610, (2011). (11 pp)
7. X. Yang, Z. Tanaka, R. Newhouse, Q. Xu, B. Chen, S. Chen, J. Z. Zhang, and C. Gu, "Portable fiber sensors based on surface-enhanced Raman scattering," *Rev. Sci. Instrum.* 81, 123103 (2010). (5 pp)
8. X. Yang, C. Shi, D. Wheeler, R. Newhouse, B. Chen, J. Z. Zhang, and C. Gu, "High-sensitivity molecular sensing using hollow-core photonic crystal fiber and surface-enhanced Raman scattering," *J. Opt. Soc. Am. A* 27, 977 (2010).
9. Xuan Yang, Danchen Wang, Claire Gu, and Jin Z. Zhang, "In-situ Reversible Temperature Dependent Surface Enhanced Raman Scattering (SERS) Study by Optical Fibers", *Chem. Phys. Lett.* 495, 109-112, (2010).
10. Z. Zhao, W. Zhao, S. Huang, C. Shi, L. Cao, X. Yang, and C. Gu, "A background noise reduction and peak detection method for surface enhanced Raman scattering signals," *J. Opt. Commun.* 31, 88-91 (2010).
11. L. Cao and C. Gu, "Matched spectral filter based on reflection holograms for analyte identification," *Appl. Opt.* 48(36), 6973-6979 (2009).
12. C. Gu (Invited) and C. Shi, "FIBER-BASED SENSORS: Surface-enhanced Raman sensors improve detection of dangerous agents," *Laser Focus World*, 45, 97-101 (2009).
13. C. Shi, Y. Zhang, C. Gu, B. Chen, L. Seballos, T. Olson and J. Z. Zhang, "Molecular Fiber Sensors Based on Surface Enhanced Raman Scattering (SERS)," *Journal of Nanoscience and Nanotechnology* 9, 2234-2246 (2009).
14. C. Shi, C. Lu, C. Gu, L. Tian, R. Newhouse, S. Chen, and J. Z. Zhang, "Inner wall coated hollow core waveguide sensor based on double substrate surface enhanced Raman scattering," *Appl. Phys. Letts.* 93, 153101, (2008).
15. Y. Zhang, Y. Xu, E. Suhir, C. Gu and X. Liu, "Compliance properties study of carbon nanofibres (CNFs) array as thermal interface material," *J. Phys. D: Appl. Phys.* 41 (2008) 155105 (5pp).
16. H. Yan, J. Liu, and C. Yang, G. Jin, C. Gu, and L. Hou, "Novel index-guided photonic crystal fiber surface-enhanced Raman scattering probe," *Opt. Exp.* 16, 8300-8305 (2008)
17. C. Shi, Y. Zhang, C. Gu, L. Seballos and J. Z. Zhang, "Manipulation and Light-Induced Agglomeration of Carbon Nanotubes through Optical Trapping of Attached Silver Nanoparticles," *Nanotechnology* 19, 215304 (2008) (6pp).

18. C. Shi, H. Yan, C. Gu, D. Ghosh, L. Seballos, S. Chen and J. Z. Zhang, "A Double Substrate "Sandwich" Structure for Fiber Surface Enhanced Raman Scattering (SERS) Detection," *Appl. Phys. Lett.* 92, 103107 (2008).
19. C. Lu, C. Gu, L. Cao, Q. He, and G. Jin, "Collectible optical power of various specially shaped multimode optical fiber probes for contact sensing," *Opt. Eng.* 47(1), 010502 (3 pages), (2008).
20. Y. Zhang, C. Shi, C. Gu, L. Seballos and J. Z. Zhang, "Liquid Core Photonic Crystal Fiber Sensor Based on Surface Enhanced Raman Scattering," *Appl. Phys. Lett.* 90, 193504 (2007).
21. H. Wei, L. Cao, C. Gu, Z. Xu, M. He, Qingsheng He, Shurong He, and, Guofan Jin "Holographic Grating Formation in Cationic Photopolymers with Dark Reaction," *Chinese Physics Letters* 23 2960-2963 (2006).
22. Y. Zhang, E. Suhir, Y. Xu, C. Gu, "Bonding strength of a carbon nanofibers array to its substrate" *J. Mate. Res.* 21, 2922, 2006.
23. Z. Xu, L. Cao, P. Su, Q. He, G. Jin, and C. Gu "Micro displacement sensor with large dynamic range based on photonic crystal co-directional coupler," *IEEE J. Quantum Electronics* 43, 182-187 (2007).
24. 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.
25. H. Wei, L. Cao, Z. Xu, Q. He, G. Jin, C. Gu "Orthogonal polarization dual-channel holographic memory in cationic ring-opening photopolymer," *Opt. Exp.* 14, 5135-5142 (2006).
26. J. Liu, C. Yang, C. Gu, and G. Jin, "A Novel Photonic Crystal Fiber with High Nonlinearity and Flattened Dispersion," (in Chinese) *ACTA OPTICA SINICA* 26, 1569-1574 (2006).
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28. 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.
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32. 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).
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100. C. Gu and P. Yeh, "Diffraction Properties of Fixed Gratings in Photorefractive Media," *J. Opt. Soc. Am. B.* 7(12), 2339-2346, (1990).
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103. 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).
104. 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. X. Yang, C. Gu, F. Qian, Y. Li, J. Z. Zhang, "Label-Free SERS Detection of Proteins and Bacteria Using Optical Fibers for Sensitivity Improvement," to be presented at Frontiers in Optics (FiO), San Jose, California, October 16-20, 2011.
2. X. Yang, B. Chen, S. Chen, J. Z. Zhang, C. Gu, "Portable Fiber Sensors Based on Surface-enhanced Raman Scattering (SERS)," Frontiers in Optics (FiO), Rochester, New York October 24, 2010.
3. C. Gu (Invited), X. Yang, J. Zhang, R. Newhouse, and L. Cao, "Fiber sensors for molecular detection," SPIE Photonics Asia, Beijing, China, Oct. 2010.
4. P. Yeh and C. Gu (Invited), "LCDs for Portable Applications: State-of-the-Art and Trends," (Keynote) International Conference on Portable Information Devices (IEEE Portable 2009), Anchorage, Alaska, September 20 – 22, (2009).
5. C. Shi, C. Gu, R. Newhouse, J. Z. Zhang, K. Tanaka, and Bin Chen "Portable Photonic Crystal Fiber Sensor Based on Surface Enhanced Raman Scattering (SERS)," Frontiers in Optics (FiO), San Jose, California, October 11, 2009.

6. C. Shi, C. Lu, C. Gu, L. Tian, R. Newhouse, S. Chen, and J. Z. Zhang, "Inner wall coated hollow core waveguide SERS probe," Proc. SPIE 7173, 71730D (2009).
7. Z. Tanaka, T. Beer, C. P. McKay, R. Bonaccorsi, C. Gu, and B. Chen, "Raman imaging for high throughput biomarker field detections," Proc. SPIE 7441, 74410I (2009).
8. C. Shi, Y. Zhang, C. Gu, L. Seballos and J. Z. Zhang, "Optical trapping and manipulation of carbon nanotubes decorated with silver nanoparticles," OSA Annual Meeting, 2008, Rochester, NY.
9. C. Gu and A. Bhowmik, "Liquid Crystal Displays in Portable Information Devices," (Keynote) International Conference on Portable Information Devices (IEEE Portable 2008), 17-20, August, Garmisch-Partenkirchen, Germany.
10. C. Gu (Invited), C. Shi, H. Yan, D. Ghosh, L. Seballos, S. Chen and J. Z. Zhang, "Recent Advance in Fiber SERS Sensors," SPIE Annual Meeting, 10-14 August, 2008, San Diego, CA.
11. C. Shi, C. Gu, D. Ghosh, L. Seballos, S. Chen and J. Z. Zhang, "Fiber Surface Enhanced Raman Scattering (SERS) Sensors based on a Double Substrate "Sandwich" Structure," CLEO (Conference on Lasers and Electro-Optics), May 2008, San Jose, CA.
12. C. Shi, Y. Zhang, C. Gu, L. Seballos and J. Z. Zhang, "Low Concentration Biomolecular Detection Using Liquid Core Photonic Crystal Fiber (LCPCF) SERS Sensor," BiOS 2008 (SPIE Photonics West 2008), San Jose, California, 19-24 January 2008.
13. Y. Zhang, C. Shi, C. Gu, L. Seballos and J. Z. Zhang, "Molecular Probe Based on Photonic Crystal Fiber (PCF) and Surface Enhanced Raman Scattering (SERS)," IEEE Sensors, October 28-31, 2007, Atlanta, Georgia.
14. C. Gu (Invited), "Combined Application of Nano-Technology and Fiber Optics in Molecular Detection," 2nd International Conference on Optics and Laser Applications, ICOLA'07, September 5-7, 2007, Yogyakarta, Indonesia. (Cancelled due to family medical needs).
15. Y. Zhang, C. Shi, C. Gu (Invited), L. Seballos, J. Z. Zhang, and B. Chen "Molecular probes based on microstructured fibers and surface enhanced Raman scattering," SPIE Annual Meeting, Optics & Photonics, 26 - 30 August, 2007, San Diego, California.
16. B. Chen, N. Cabrol, C. P. McKay, C. Shi, C. Gu, R. Newhouse, J. Zhang, T. Lam, and Q. Pei, "Mix and match: enhanced Raman spectroscopy instrumentation in field applications," Proc. SPIE 7097, 709715 (2008) .
17. C. Gu (Invited), Y. Zhang, C. Shi, A. M. Schwartzberg, L. Seballos, and J. Z. Zhang, "Highly Sensitive and Compact Molecular Sensor Using Surface Enhanced Raman Scattering and Optical Fibers," Conference on Lasers and Electro-Optics (CLEO®/Pacific Rim 2007, August 26-31, 2007, Seoul, Korea.
18. C. Gu (Invited), Y. Zhang, C. Shi, A. M. Schwartzberg, L. Seballos, and J. Z. Zhang, "Surface Enhanced Raman Sensors Incorporating Various Fiber Configurations," 3rd Asian and Pacific Rim Symposium on Biophotonics, 9-11 July 2007, Cairns, Australia. (Cancelled due to family medical needs).
19. C. Gu (Invited), Y. Zhang, C. Shi, A. M. Schwartzberg, L. Seballos, and J. Z. Zhang, "Molecular Probes Based on Microstructured Fibers and Surface Enhanced Raman Scattering," 4th International Conference on Materials for Advanced Technology, 1 -6 July, 2007, Singapore. (Cancelled due to family medical needs).
20. C. Gu, "Nanotechnology and Portable Information Devices," (Keynote) International Conference on Portable Information Devices (IEEE Portable 2007), 25-27 March 2007, Orlando, Florida. (presentation only)
21. C. Gu, "Optical Biomedical Sensors," (Tutorial) International Conference on Portable Information Devices (IEEE Portable 2007), 25-27 March 2007, Orlando, Florida.

22. 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.
23. 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.
24. 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.
25. 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.
26. 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.
27. 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.
28. 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.
29. 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.
30. 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.
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