

ARTICLES IN REFEREED JOURNALS

1. J. Guan, J. Lin, **Y. Ma**, J. Tan, and P. Jine, "A subwavelength spot and a three-dimensional optical trap formed by a single planar element with azimuthal light", *Scientific Reports*, 7: 7380 (2017)
2. N. Nguyen-Huu, M. Cada, **Y. Ma**, F. Che etc., "Mid-infrared Fano resonance in heavily doped silicon and metallic nanostructures due to coupling of Wood-Rayleigh anomaly and surface plasmons", *J. Phys. D: Appl. Phys.* 50, 205105 (2017)
3. Bin Liu, Jie Lin, Huan Liu, **Y. Ma**, Lei Yan and Peng Jin, "Diaphragm based long cavity Fabry-Perot fiber acoustic sensor using phase generated carrier", *Optics Communications*, 382, 514-518 (2017)
4. Yu Han, Jie Lin, Yuxuan Liu, Hao Fu, **Y. Ma**, Peng Jin and Jiubin Tan, "Crackle template based metallic mesh with highly homogeneous light transmission for high-performance transparent EMI shielding", *Scientific Reports* 6, 25601; DOI 10.1038/srep25601 (2016)
5. Jie Lin, Hongyang Zhao, **Y. Ma**, Jiubin Tan, Peng Jin, "New hybrid genetic particle swarm optimization algorithm to design multi-zone binary filter", *Optics Express* 24(10): 10748-10758 (2016)
6. Y. Li, L. Li, **Y. Ma**, L. Chen etc., "A 10-Transistor 65nm SRAM Cell Tolerant to Single-Event Upsets", *Journal of Electronic Testing: Theory and Applications*, 32: 137-145 (2016)
7. L. Ma, J. Lin, **Y. Ma**, B. Liu, J. Tan, and P. Jin, "Yagi-Uda Optical Antenna Array Collimated Laser Based on Surface Plasmons", *Optics Communications*, (2016)
8. L. Li, Y. Li, H. Wang, R. Liu, Q. Wu, M. Newton, **Y. Ma**, and L. Chen, "Simulation and Experimental Evaluation of a Soft Error Tolerant Layout for SRAM 6T Bitcell in 65nm Technology", *J. Electron. Test*, vol. 31, no.5: 561-568 (2015)
9. J. Lin, R. Chen, P. Jin, M. Cada, **Y. Ma**, "Generation of longitudinally polarized optical chain by 4π focusing system", *Optics Communications*, 340: 69-73 (2015)
10. J. Lin, R. Chen, H. Yu, P. Jin, **Y. Ma**, Michael Cada, "Generation of hollow beam with radially polarized vortex beam and complex amplitude filter", *J. Opt. Soc. Am. A*, 31(7): 1395-1400 (2014)
11. J. Lin, R. Chen, H. Yu, P. Jin, M. Cada, **Y. Ma**, "Analysis of sub-wavelength focusing generated by radially polarized doughnut Gaussian beam", *Optics & Laser Technology*, 64: 242-246 (2014)
12. J.-M. Daignan, R. Chen, K. A. Mahmoud, **Y. Ma**, I. G. Hill and L. Kreplak, "Patterning of nanocrystalline cellulose gel phase by electrodisolution of a metallic electrode", *PLOS One*, 9(6):e99202 (2014)
13. R. Chen, C. L. Chen, Y. J. Liu, H. Q. Wang, **Y. Ma**, M. Cada, J. Brugger, D. Y. Kong, "Simulation of electrical discharge initiated by a nanometer-sized probe in atmospheric conditions", *Plasma Science and Technology*, Vol.15, No.9 (2013)
14. J. Lin, **Y. Ma**, P. Jin, G. Davies, J. Tan, "Longitudinal polarized focusing of radially polarized sinh-Gaussian beam", *Optics Express*, 21(11): 13193-13198 (2013)
15. L. Ma, J. Lin, **Y. Ma**, P. Jin, J. Tan, "Subwavelength focusing of micro grating-Fresnel lens", *Optics Communications*, 298-299: 242-245 (2013)
16. **Y. Ma**, S. Islam, Y. Pan, "Electrostatic Torsional Micromirror with Enhanced Tilting Angle Using Active Control Methods", *IEEE Transactions on Mechatronics*, Vol. 16, No. 6: 994-1001 (2011)
17. S. Shehadeh, M. Cada, M. Qasymeh, and **Y. Ma**, "Multi-Stable Cascaded Optical Resonators for Deflection Sensor", *IEEE Sensors J.*, Vol. 11, No. 9: 1899-1904 (2011)
18. S. Shehadeh, M. Cada, M. Qasymeh, and **Y. Ma**, "Deflection Sensors Utilizing Optical Multistability", *IAENG Transactions on Engineering Technologies*, Vol. 4, 2010, pp. 158-166.
19. **Y. Ma**, R. P. W. Lawson, and A. M. Robinson, "High Sensitivity and High Dynamic Range Optical Micro-Radiator Vacuum Sensor Fabricated with CMOS Technology", *International Journal of Information Acquisition*, Vol. 5, No. 3: 189-196 (2008)

20. K. Brown, **Y. Ma**, R. P. W. Lawson, W. Allegretto, F. E. Vermeulen, and A. M. Robinson, "Gas mixture analysis and vacuum measurement using a CMOS micromachined optical Pirani gauge", *Can. J. Elect. Comput. Eng.*, Vol. 27, No. 1: 27-31 (2002)
21. K. Brown, **Y. Ma**, W. Allegretto, R. P. W. Lawson, F. E. Vermeulen, and A. M. Robinson, "Microstructural pressure sensor based on an enhanced resonant mode hysteresis effect", *Journal of Vacuum Science & Technology B*, vol. 19, No. 5: 1828-1832 (2001)
22. **Y. Ma**, A. M. Robinson, R. P. W. Lawson, K. Brown, D. Strembicke, W. Allegretto, and T. Zhou, "Measuring the Deflection of CMOS Micromachined Cantilever Devices using a Piezoresistive Sensor", *Can. J. Elect. & Comp. Eng.*, Vol. 25, No. 1: 3-7 (2000)
23. K. B. Brown, **Y. Ma**, A. Garcia, W. Allegretto, R. P. W. Lawson, F. E. Vermeulen, and A. M. Robinson, "Pressure measurement using hysteresis effects in cantilever microstructures", *Can. J. Elect. & Comp. Eng.*, Vol. 25, No. 1: 43-47 (2000)
24. **Y. Ma**, A. M. Robinson, R. P. W. Lawson, W. Allegretto, and T. Zhou, "Static and dynamic characterization of magnetically actuated CMOS-micromachined cantilever-in-cantilever devices", *Can. J. Phys.*, Vol. 76: 747-758 (1998)
25. B. Shen, W. Allegretto, **Y. Ma**, B. Yu, M. Hu and A. M. Robinson, "Cantilever Micromachined Structures in CMOS Technology with Magnetic Actuation", *Sensors and Materials*, Vol. 9, No. 6: 347-362 (1997)
26. W. Zhang, **Y. Ma**, Z. Wu, "Study of Influence of Water on Piezoelectric Coefficient d33 in Pig Bones", *ACTA BIOPHYSICA SINICA (Chinese)*, Vol. 11, No. 1 (1995)
27. **Y. Ma**, R. Pan, "Some Physics Experiments Making Use of a Small Refrigerator", *Physics Experimentation (Chinese)*, Vol. 14, No. 1 (1994)
28. **Y. Ma**, R. Pan, H. Xue, "A Student Experiment Simulating a Refrigerator", *College Physics (Chinese)*, vol. 12, No. 9 (1993)
29. **Y. Ma**, "Detection Scheme in a Fibre-Optical Magnetic-Field Sensor Free From Ambiguity due to Material Magnetic Hysteresis", *Journal of Transduction Technology (Chinese)*, Vol. 6, No. 1 (1993)

PATENTS

30. J. M. Miller, **Y. Ma**, B. Keyworth, W. Jin, and D. Hess, "Electrode Configuration for Pivotal MEMS Micromirror", European Patent 1,479,646 B1 (2010)
31. **Y. Ma**, G. McKinnon, and J. M. Miller, "Sunken Electrode Configuration for MEMS Micromirror", US Patent 7,302,131 (2007)
32. J. M. Miller, **Y. Ma**, B. Keyworth, M. Mala, and G. McKinnon, "Electrical X-talk Shield for MEMS Micromirrors", US Patent 7,302,132 (2007)
33. **Y. Ma**, G. McKinnon, and J. M. Miller, "Sunken Electrode Configuration for MEMS Micromirror", US Patent 7,203,413 (2007)
34. **Y. Ma**, M. Mala, and J. M. Miller, "Two-Step Electrode for MEMS Micromirrors", US Patent 7,110,637 (2006)
35. J. M. Miller, **Y. Ma**, B. Keyworth, M. Mala, and G. McKinnon, "Electrical X-talk Shield for MEMS Micromirrors", US Patent 7,110,635 (2006)
36. J. M. Miller, **Y. Ma**, B. Keyworth, W. Jin, and D. R. Hess, "Electrode Configuration for Piano MEMS Micromirror", US Patent 7,010,188 (2006)
37. J. M. Miller, **Y. Ma**, B. Keyworth, W. Jin, and D. R. Hess, "Electrode Configuration for Piano MEMS Micromirror", US Patent 6,968,101 (2005)
38. M. Mala, J. M. Miller, G. McKinnon, and **Y. Ma**, "Piano MEMS Micromirror", US Patent 6,934,439 (2005)
39. **Y. Ma**, G. McKinnon, and J. M. Miller, "Sunken Electrode Configuration for MEMS Micromirror", CA Patent 2 482 165 (2005)

40. **Y. Ma**, M. Mala, and J. M. Miller, “Two-Step Electrode for MEMS Micromirrors”, CA Patent 2 482 163, Mar. 22 (2005)
41. J. M. Miller, **Y. Ma**, B. Keyworth, M. Mala, and G. McKinnon, “Electrical X-talk Shield for MEMS Micromirrors”, EP 1,479,647 A2/A3(2005)
42. J. M. Miller, **Y. Ma**, B. Keyworth, M. Mala, and G. McKinnon, “Electrical Cross-talk Shields for MEMS Micromirrors”, CA Patent 2 468 139 (2004)
43. J. M. Miller, **Y. Ma**, B. Keyworth, W. Jin, and D. R. Hess, “Electrode Configuration for Piano MEMS Micromirrors”, CA Patent 2 468 132 (2004)
44. M. Mala, J. M. Miller, G. McKinnon, and **Y. Ma**, “Piano MEMS Micromirror”, CA Patent 2 429 508 (2003)

CONFERENCE PAPERS PUBLISHED

45. R. Chen, M. Cada, and Y. Ma, “Numerical and Experimental Study of Photonic Nanojets Generated by Microspheres”, IEEE International Conference on Computational Electromagnetics, Kumamoto, Japan (2017)
46. (Invited) Y. Ma, “Optical MEMS”, TecConnect, Washington DC, May 22-25 (2016)
47. J. Lin, R. Chen, P. Jin, M. Cada, **Y. Ma**, “Super-resolution Focusing with Polarized Optical Beam”, *IEEE Can. Conf. Electrical and Computer Engineering*, Halifax (2015)
48. L. Li, Y. Li, **Y. Ma**, Li Chen, “A Novel Asymmetrical SRAM Cell Tolerant to Soft Errors”, *IEEE Can. Conf. Electrical and Computer Engineering*, Halifax (2015)
49. R. Chen, J. Lin, P. Jin, M. Cada and **Y. Ma**, “Photonic nanojets generated by microcylinders with rough surface”, *IEEE Can. Conf. Electrical and Computer Engineering*, Halifax (2015)
50. H. Imam, R. Adamson, J. Brown, and **Y. Ma**, “Two-Dimensional Micromirror with Enhanced Tilting Angle Using Active Control Methods”, *IEEE Optical MEMS & Nanophotonics Conference*, Banff (2012)
51. T. Zhang, **Y. Ma**, and Z. Chen, “High Quality Factor Free-Free Beam Micro-Resonators Fabricated with Standard Surface Micromachining Process”, *The 6th Asia-Pacific Conference of Transducers and Micro/Nano Technologies (APCOT)*, Nanjing (2012)
52. **Y. Ma**, “MEMS for Telecommunication Networks”, *The 19th World Micromachine Summit*, Shanghai (2012)
53. (Invited) **Y. Ma**, “MEMS for Telecommunication Networks”, *International Photonics Conference (IPC 2011)*, Tainan (2011)
54. (Invited) H. Imam, and **Y. Ma**, “Electrostatically Actuated 2-Dimensional MEMS Micromirror” *23rd Canadian Congress of Applied Mechanics*, Vancouver (2011)
55. R. A. Currie, Y.-J. Pan, **Y. Ma**, “Monocular Obstacle Detection on a Moving Robotic Vehicle”, Proceedings of 2011 International Conference on Instrumentation, Measurement, Circuits and Systems , ICIMCS, Hong Kong (2011)
56. H. Imam, and **Y. Ma**, “Static and Dynamic Analysis of a 2D MEMS Micromirror”, *IEEE Can. Conf. Electrical and Computer Engineering*, Calgary (2010)
57. S. Shehadeh, M. Cada, M. Qasymeh, and **Y. Ma**, “Cascaded Linear and Nonlinear Optical Resonators: Towards a Smart Deflection Sensor”, *2nd Microsystems and Nanoelectronics Research Conference*, Ottawa (2009)
58. H. Imam, and **Y. Ma**, “A Study of a 2-Dimensional Electrostatic Torsional Micromirror”, *2nd Microsystems and Nanoelectronics Research Conference*, Ottawa (2009)
59. S. Shehadeh, M. Cada, M. Qasymeh, and **Y. Ma**, “Application of Optical Multi-Stability to Deflection Sensors”, *World Congress on Engineering & Computer Science*, San Francisco, USA (2009)
60. (Invited) **Y. Ma**, “Optical Electrostatic MEMS for Wavelength Switching”, Asia Optical Fiber Communication & Optoelectronic Exposition & Conference, Shanghai, China (2008)

61. **(Invited)** Y. Pan, **Y. Ma** and S. Islam, “Electrostatic Torsional Micromirror: Its Active Control and Applications in Optical Network”, *IEEE 4th Annual Conference on Automation Science and Engineering*, Washington DC, USA (2008)
62. S. Islam, Y. Pan, and **Y. Ma**, “Electrostatic Torsional Micromirror – Design, Control and Applications”, Canadian Design Engineering Network 2008 Conference, Halifax (2008)
63. **Y. Ma**, “MicroElectroMechanical Systems (MEMS) Based Wavelength-Selective Building Block in a Transparent Network Architecture”, Proc. 4th IEEE Communication Networks & Services Research Conference, Halifax (2008)
64. **Y. Ma**, “Analytical Analysis of a High Sensitivity Optical Micro-Radiator Vacuum Sensor Fabricated by CMOS Technology”, *Thirteen Canadian Semiconductor Technology Conference*, Montréal (2007)
65. **(Invited)** **Y. Ma**, “MicroElectroMechanical Systems (MEMS) Applications – Multiple Wavelength Switch and Vacuum Sensor”, Institute for Research in Materials Annual General Meeting and Research Day, Dalhousie University, Halifax (2007)
66. **(Invited)** **Y. Ma**, “MEMS Introduction and Applications”, JDS Uniphase, ShenZhen, China (2004)
67. T. Ducellier, J. Bismuth, S. F. Roux, A. Gillet, C. Merchant, M. Miller, M. Mala, **Y. Ma**, L. Tay, J. Sibille, M. Alavanja, A. Deren, M. Cugalj, D. Ivancevic, V. Dhuler, E. Hill, A. Cowen, B. Shen, R. Wood, “The MWS 1x4: a high performance wavelength switching building block”, *Proc. ECOC 2002*, Copenhagen, Denmark (2002)
68. T. Ducellier, J. Bismuth, S. F. Roux, A. Gillet, C. Merchant, M. Miller, M. Mala, **Y. Ma**, L. Tay, J. Sibille, M. Alavanja, A. Deren, M. Cugalj, D. Ivancevic, V. Dhuler, E. Hill, A. Cowen, B. Shen, R. Wood, “The Multi-port Wavelength Switch (MWS 1x4) A novel high performance building block for wavelength cross-connected networks”, Optical Fiber Communication Conference (OFC) 2002 Postdeadline session, Anaheim (2002)
69. K. Brown, **Y. Ma**, R. P. W. Lawson, F. E. Vermeulen, A. M. Robinson, and W. Allegretto, "CMOS-Compatible Micro-Radiator for Vacuum Measurement and Gas Mixture Analysis", *Tenth Canadian Semiconductor Technology Conference*, Ottawa (2001)
70. K. Brown, R. P. W. Lawson, **Y. Ma**, W. Allegretto, F. E. Vermeulen, and A. M. Robinson, " Gas Mixture Analysis and Vacuum Measurement using an Optical Pirani Gauge", *Canadian Workshop on MEMS/Micromachining: Applying MEMS Research in Canada*, Ottawa (2001)
71. **Y. Ma**, R. P. W. Lawson, W. Allegretto, A. M. Robinson, “CMOS Micromachined Optical Radiator Vacuum Sensor”, *Canadian Institute for Photonic Innovations 1st Annual Meeting*, Quebec (2000)
72. **Y. Ma**, A. M. Robinson, R. P. W. Lawson and W. Allegretto, “CMOS Micromachined Low Power Microlamp Vacuum Sensor”, *IEEE Can. Conf. Electrical and Computer Engineering*, Halifax (2000)
73. **Y. Ma**, A. M. Robinson, D. Milan, “MUMPs Surface Micromachining: Design and Characterization of Lateral Comb Drive Systems”, *Canadian Workshop on MEMS*, Ottawa (1999)
74. **Y. Ma**, A. M. Robinson, R. P. W. Lawson, B. Shen, D. Strembicke, “Measuring the Deflection of a Micromachined Cantilever-in-Cantilever Device using a Piezoresistive Sensor”, *IEEE Can. Conf. Electrical and Computer Engineering*, Edmonton (1999)
75. I. W. T. Chan, K. Brown, R. P. W. Lawson, A. M. Robinson, **Y. Ma**, D. Strembicke, “Gas Phase Pulse Etching of Silicon for MEMS with Xenon Difluoride”, *IEEE Can. Conf. Electrical and Computer Engineering*, Edmonton (1999)
76. M. Spacek, K. Brown, **Y. Ma**, A. M. Robinson, R. P. W. Lawson, and W. Allegretto, “CMOS cantilever microstructures as thin film deposition monitors”, *IEEE Can. Conf. Electrical and Computer Engineering*, Edmonton (1999)
77. **Y. Ma** and A. M. Robinson, “CMP/Mentor MEMS Design-kit Trial and Evaluation Report”, *Seminar on CMC’s CAD support for MST* (1998)

78. **Y. Ma**, D. Strembicke, A. M. Robinson, R. P. W. Lawson, F. E. Vermeulen, and W. Allegretto, “Magnetically Actuated CMOS Micromachined Cantilever-in-Cantilevers: Analysis and Application”, *CAP Congress 97*, Calgary (1997)
79. **Y. Ma** and B. Yu, “A Magnetically Actuated Cantilever-in-Cantilever Micromachined Device”, *Symposium on Microelectronics Research and Development in Canada (MR&DCAN)*, Ottawa (1996)
80. B. Shen, A. M. Robinson, W. Allegretto, **Y. Ma**, B. Yu and M. Hu, “Magnetically Actuated CMOS Micromachined Cantilever-in-Cantilever Devices”, *IEEE Can. Conf. Electrical and Computer Engineering*, Calgary (1996)
81. B. Shen, A. M. Robinson, **Y. Ma** and B. Yu, “Movable micromachined structures in CMOS technology with magnetic actuation”, *Canadian Workshop on MEMS*, Waterloo (1996)

TECHNICAL REPORTS

82. **Y. Ma**, “System Design Document (SDD) – Multiple Wavelength Switch MWS100C MicroElectroMechanical System (MEMS)”, JDS Uniphase System Design Document Number 21089071 (2006)
83. **Y. Ma**, “System Design Document (SDD) – Multiple Wavelength Switch MWS 50C MicroElectroMechanical System (MEMS)”, JDS Uniphase System Design Document Number 21089073 (2006)

APPLICATION NOTES

84. H. Imam, **Y. Ma**, “Magnetically Actuated MultiMEMS Micromirror with Piezoresistive Angle Sensing”, CMC Microsystems Application Notes, CMC-00200-01389 (2010)