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Prof. Chiang received his first-class honours B.Eng. and Ph.D. degrees in electrical engineering from the University of New South Wales, Australia, in 1982 and 1986, respectively. His Ph.D. study was on the development of mathematical methods for the analysis of optical fibres and waveguides. In 1986, he spent six months in the Department of Mathematics, Australian Defence Force Academy, Canberra, where he developed theoretical models for optical fibre fused tapered couplers. From 1986 to 1993, he worked for the Division of Applied Physics (also known as the National Measurement Laboratory), Commonwealth Scientific and Industrial Research Organization (CSIRO), Australia, as a Research Scientist/Senior Research Scientist, where he established a fibre-optics laboratory and initiated research in the areas of optical fibre sensors and nonlinear fibre optics. From 1987 to 1988, he received a Japanese Government Research Award for Foreign Specialist and visited the Electrotechnical Laboratory, Tsukuba, Japan, where he worked on an optical fibre interferometric sensor. From 1992 to 1993, he worked concurrently for the Optical Fibre Technology Centre of the University of Sydney, where he led a project on grating-based fibre sensors. In August 1993, he joined the City University of Hong Kong, where he is currently Chair Professor. He holds five patents and has published over 500 papers in international journals and conference proceedings (including over 40 invited papers) as well as several book chapters. His recent research interests include mode-multiplexing devices, fibre and waveguide gratings, surface-plasmon-based devices, polymer waveguide devices, microstructured fibres, fibre lasers, optical sensors, optical interconnect, and nonlinear guided-wave optics.

Prof. Chiang is a Fellow of the Optical Society of America. He was awarded the Croucher Senior Research Fellowship (“The Croucher Prize”) by the Croucher Foundation in 2000. He was a recipient of 2005 K. C. Wong Education Foundation Sponsorship and a Chang Jiang Chair Professor（長江講座教授）of the University of Electronic Science and Technology of China (UESTC) (2007 - 2010). He is also a Thousand Talents Program (國家千人計劃) Professor of UESTC (since 2012).

Prof. Chiang is an Editor of *Light: Science & Applications* and a member of the Advisory Board of *Optics Communications*. He was an Associate Editor of *IEEE/OSA Journal of Lightwave Technology* from 2009 to 2014. He has participated in the organizing of more than 40 international conferences in different capacities. He is a regular reviewer for about 20 international professional journals.

Prof. Chiang is Director of CityUHK-UESTC Joint Research Center on Optical Fiber Sensing and Communications. He served as Programme Leader (1996 - 1999) and Associate Head (2002 - 2004) for the Department of Electronic Engineering. He has served/is serving on numerous committees at CityU, which cover a broad spectrum of teaching & learning, research, and administration activities.

RESEARCH AREAS

Optical Fibre Communications, Optical Fibre and Waveguide Theory, Fibre and Integrated-optic Devices, Optical Sensors, Nonlinear Guided-wave Optics, Numerical Methods for Waveguide Analysis

SELECTED PUBLICATIONS

Book/Book Chapters

1. Y. L. Guo, C. K. Kao（高錕）, E. H. Li, and K. S. Chiang, *Nonlinear Photonics – Nonlinearities in Optics, Optoelectronics and Fiber Communications*, The Chinese University Press (Hong Kong) and Springer-Verlag (Berlin), 2002.
2. H. L. W. Chan and K. S. Chiang, “Optical fiber ultrasonic sensors”, in *Ultrasonic Exposimetry*, M. C. Ziskin and P. A. Lewin, Eds., CRC Press, Boca Raton, pp.283-314, 1993.
3. K. S. Chiang, “Integrated optic waveguides”,in *Encyclopedia of Electrical and Electronics Engineering*, J. Webster, Ed., John Wiley, New York, Vol.10, pp.400-418, 1999; updated on-line version, August 2007.
4. K. S. Chiang and V. Rastogi, “Radial effective-index method for the analysis of microstructured fibers”, in *Guided Wave Optical Components and Devices*, B. P. Pal, Ed., Elsevier, New York, 2006, Chapter 5, pp.83-90.

Journal Papers

1. K. S. Chiang, “Finite element method for cutoff frequencies of weakly guiding fibres of arbitrary cross-section”, Opt. Quantum Electron., vol. 16, pp. 487-493, 1984.
2. K. S. Chiang, “Construction of refractive-index profiles of planar dielectric waveguides from the distribution of effective indexes”, IEEE/OSA J. Lightwave Technol., vol. LT-3, pp. 385-391, 1985.
3. K. S. Chiang, “Conditions for obtaining zero polarisation mode dispersion in elliptical-core fibres”, Electron. Lett., vol.21, pp.592-593, 1985.
4. K. S. Chiang, “Linearly birefringent fibres with zero polarisation mode dispersion”, Electron. Lett., vol.21, pp.916-917, 1985.
5. K. S. Chiang, “Finite element analysis of weakly guiding fibers with arbitrary refractive-index distribution”, IEEE/OSA J. Lightwave Technol., vol. LT-4, pp. 980-990, 1986.

6. K. S. Chiang, “Analysis of optical fibers by the effective-index method”, Appl. Opt., vol. 25, pp. 348-354, 1986.
7. K. S. Chiang, “Dual effective-index method for the analysis of rectangular dielectric waveguides”, Appl. Opt., vol. 25, pp. 2169-2174, 1986.
8. K. S. Chiang, “Radial effective-index method for the analysis of optical fibers”, Appl. Opt., vol. 26, pp.2969-2973, 1987.
9. K. S. Chiang, “Perturbation analysis of fused tapered single-mode fibre couplers”, Electron. Lett., vol. 23, pp. 717-718, 1987.
10. K. S. Chiang, “Effect of cores in fused tapered single-mode fiber couplers,” Opt. Lett., vol. 12, no. 6, pp. 431-433, 1987.
11. K. S. Chiang, “Birefringent-fibre polarisation splitters”, Electron. Lett., vol. 23, pp. 908-909, 1987.
12. K. S. Chiang and H. Tsuchida, “Dual-sensor technique for extending the dynamic range of a fiber-optic interferometric sensor”, Opt. Lett., vol. 13, pp. 850-852, 1988.
13. K. S. Chiang, “Acousto-optical modulation method for measuring the beat length of a linearly birefringent optical fiber”, Opt. Lett., vol. 14, pp. 1029-1031, 1989.
14. K. S. Chiang, “Stress-induced birefringence fibers designed for single-polarization single-mode operation”, IEEE/OSA J. Lightwave Technol., vol. 6, pp. 436-441, 1989.
15. H. L. W. Chan, K. S. Chiang, D. C. Price, J. L. Gardner, and J. Brinch, “Use of a fibre-optic hydrophone in measuring the acoustic parameters of high power hyperthermia transducers”, Phys. in Med.& Bio., vol. 34, pp. 1609-1622, 1989.
16. K. S. Chiang, H. L. W. Chan, and J. L. Gardner, “Detection of high-frequency ultrasound with a polarization-maintaining fiber”, IEEE/OSA J. Lightwave Technol., vol. 8, pp. 1221-1227, 1990.
17. K. S. Chiang, D. Wong, and P. L. Chu, “Strain-induced birefringence in a highly birefringent optical fibre”, Electron. Lett., vol. 26, pp. 1344-1346, 1990.
18. K. S. Chiang, “Dispersion characteristics of strip dielectric waveguides”, IEEE Trans. Microwave Theory Tech., vol. 39, pp. 349-352, 1991.
19. K. S. Chiang, “Effective-index method for the analysis of optical waveguide couplers and arrays: An asymptotic theory”, IEEE/OSA J. Lightwave Technol., vol. 9, pp. 62-72, 1991.
20. K. S. Chiang, “Coupled-zigzag-wave theory for guided waves in slab waveguide arrays”, IEEE/OSA J. Lightwave Technol., vol. 10, pp. 1380-1397, 1992.
21. K. S. Chiang, “Stimulated Raman scattering in a multimode optical fiber: Evolution of modes in Stokes waves”, Opt. Lett., vol. 17, pp. 352-354, 1992.
22. K. S. Chiang, “Stimulated Raman scattering in a multimode optical fiber: Self-focusing or mode competition?”, Opt. Commun., vol.95, pp.235-238, 1993.
23. K. S. Chiang and R. A. Sammut, “Effective-index method for spatial solitons in planar waveguides with Kerr-type nonlinearity”, J. Opt. Soc. Amer. B, vol. 10, pp. 704-708, 1993.
24. K. S. Chiang, M. G. Sceats, and D. Wong, “Ultraviolet photolytic-induced changes in optical fibers: The thermal expansion coefficient”, Opt. Lett., vol. 18, pp. 965-967, 1993.
25. K. S. Chiang, “Measurement of equalization wavelength for two-mode optical fibers by four-wave mixing”, Appl. Opt., vol. 32, pp.7449-7452, 1993.
26. K. S. Chiang, “Review of numerical and approximate methods for the modal analysis of general optical dielectric waveguides”, Opt. Quantum Electron., vol. 26, pp. S113-134, 1994 (review paper).
27. K. S. Chiang and R. A. Sammut, “Iterative methods and stability of TE modes of nonlinear planar waveguides”, Opt. Commun., vol. 109, pp. 59-64, 1994.
28. K. S. Chiang, “Simplified universal dispersion curves for graded-index planar waveguides based on the WKB method”, IEEE/OSA J. Lightwave Technol., vol. 13, pp. 158-162, 1995.
29. K. S. Chiang, “Intermodal dispersion in two-core optical fibers”, Opt. Lett., vol. 20, pp. 997-999, 1995.
30. K. S. Chiang, “Analysis of the effective-index method for the vector modes of rectangular-core dielectric waveguides”, IEEE Trans. Microwave Theory Tech., vol. 44, pp. 692-700, 1996.
31. K. S. Chiang, C. L. Wong, H. P. Chan, and Y. T. Chow, “Refractive-index profiling of graded-index planar waveguides with effective indexes measured for both mode types and at different wavelengths”, IEEE/OSA J. Lightwave Technol., vol. 14, pp. 827-832, 1996.
32. K. S. Chiang, “Propagation of short optical pulses in directional couplers with Kerr nonlinearity”, J. Opt. Soc. Amer. B, vol. 14, pp. 1437-1443, 1997.
33. K. S. Chiang, Y. T. Chow, D. J. Richardson, D. Traverner, L. Dong, L. Reekie, and K. M. Lo, “Experimental demonstration of intermodal dispersion in a two-core optical fiber”, Opt. Commun., vol. 143, pp. 189-192, 1997.
34. K. S. Chiang, K. P. Lor, and Y. T. Chow, “Non-degenerate four-wave mixing in a birefringent optical fiber pumped by a dye laser”, Opt. Lett., vol. 22, pp. 510-512, 1997.
35. K. S. Chiang, “Temperature sensitivity of coated stress-induced birefringent optical fibers”, Optical Engineering, vol. 36, pp. 999-1007, 1997.
36. K.-W. Hui, K. S. Chiang, B.-Y. Wu, and Z. H. Zhang, “Electrode optimization for high-speed traveling-wave integrated optic modulators”, IEEE/OSA J. Lightwave Technol., vol. 16, pp. 232-238, 1998.
37. H. Ke, K. S. Chiang, and J. H. Peng, “Analysis of phased-shifted long-period fiber gratings”, IEEE Photonics Technol. Lett., vol. 10, pp. 1596-1598, 1998.
38. K. S. Chiang, C. H. Kwan, and K. M. Lo, “Effective-index method with built-in perturbation correction for the vector modes of rectangular-core optical waveguides”, IEEE/OSA J. Lightwave Technol., vol. 17, pp. 716-722, 1999.
39. K. S. Chiang and W. P. Wong, "Theory of zero-birefringence multiple-quantum-well optical waveguides," IEEE J. Quantum Electron., vol. 35, pp. 1554-1564, 1999.
40. Y. Liu, Z. Guo, Y. Zhang, K. S. Chiang, and X. Dong, “Simultaneous pressure and temperature measurement with a polymer-coated fibre Bragg grating”, Electron. Lett., vol.36, pp.564-566, 2000.
41. X. P. Dong, S. Li, K. S. Chiang, M. N. Ng, and B. C. B. Chu, “Multiwavelength erbium-doped fiber laser based on a high-birefringence fiber loop mirror”, Electron. Lett., vol.36, pp.1609-1610, 2000.
42. S. Li, K. S. Chiang, and W. A. Gambling, "Generation of wavelength-tunable single-mode picosecond pulses from a self-seeded gain-switched Fabry-Perot laser diode with a high-birefringence fiber loop mirror," Appl. Phys. Lett., vol. 76, pp.3676-3678, 2000.
43. S. Li, K. S. Chiang, and W. A. Gambling, "Fast accurate wavelength switching of an erbium-doped fiber laser with a Fabry-Perot semiconductor filter and fiber Bragg gratings," Appl. Phys. Lett., vol. 77, pp. 4268-4270, 2000.
44. W. P. Wong and K. S. Chiang, “Design of waveguide structures for polarization-insensitive optical amplification”, IEEE J. Quantum Electron., vol. 36, pp. 1243-1250, 2000.
45. K. S. Chiang, C. L. Wong, S. Y. Cheng, and H. P. Chan, "Refractive-index profiling of graded-index planar waveguides from effective indexes measured with different external refractive indexes," IEEE/OSA J. Lightwave Technol., vol. 18, pp. 1412-1417, 2000.
46. V. Rastogi and K. S. Chiang, "Propagation characteristics of a segmented cladding fiber," Opt. Lett., vol. 26, pp. 491-493, 2001.
47. K. S. Chiang, K. P. Lor, and C. K. Chan, “Polarimetric four-wave mixing in a single-mode fiber”, IEEE Photon. Technol. Lett., vol. 13, pp. 803-805,2001.
48. V. Rastogi and K. S. Chiang, "Long-period gratings in planar optical waveguides," Appl. Opt., vol. 41, pp.6351-6355, 2002.
49. V. Rastogi, K. S. Chiang, and N. N. Akhmediev, “Soliton states in a nonlinear directional coupler with intermodal dispersion”, Physics Letters A, vol. 291, pp. 115-123, 2002.
50. M. N. Ng and K. S. Chiang, “Thermal effects on the transmission spectra of long-period fiber gratings”, Opt. Commun., vol.208, pp.321-327, 2002.
51. M. N. Ng, Z. Chen, and K. S. Chiang, “Temperature compensation of long-period grating for refractive-index sensing with bending effect”, IEEE Photon. Technol. Lett., vol. 14, no. 3, pp. 361-362, 2002.
52. K. S. Chiang, R. Kancheti, and V. Rastogi, Temperature-compensated fiber-Bragg-grating-based magnetostrictive sensor for dc and ac measurements, " Optical Engineering, vol. 42, pp. 1906-1909, 2003.
53. K. S. Chiang, K. P. Lor, C. W. Chow, H. P. Chan, V. Rastogi, and Y. M. Chu, "Widely tunable long-period gratings fabricated in polymer-clad ion-exchanged glass waveguides," IEEE Photon. Technol. Lett., vol. 15, pp. 1094-1096, 2003.
54. V. Rastogi and K. S. Chiang, “Leaky optical fibre for large mode area single-mode operation”, Electron. Lett., vol. 39, pp. 1110-1112, 2003.
55. Y. Liu, K. S. Chiang, and P. L. Chu, “Generation of dual-wavelength picosecond pulses with close wavelength separation from a self-seeded Fabry-Perot laser diode”, IEEE Photon. Technol. Lett., vol. 15, pp. 1452-1454, 2003.
56. V. Rastogi and K. S. Chiang, “Holey optical fiber with circularly distributed holes analyzed by the radial effective-index method”, Opt. Lett., vol. 28, pp. 249-251, 2003.
57. Q. Liu, K. S. Chiang, and V. Rastogi, “Analysis of corrugated long-period waveguide gratings and their polarization dependence”, IEEE/OSA J. Lightwave Technol., vol. 21, pp.3399-3405, 2003.
58. S. C. Tsang, K. S. Chiang, and K. W. Chow, “Soliton interaction in a two-core optical fiber”, Opt. Commun., vol. 229, pp. 431-439, 2004.
59. V. Rastogi and K. S. Chiang, “Analysis of the segmented cladding fiber by the radial effective-index method”, J. Opt. Soc. Am. B, vol. 21, pp. 258-265, 2004.
60. Y. Liu, K. S. Chiang, and P. L. Chu, “Multiplexing of temperature-compensated fiber-Bragg-grating magnetostrictive sensors with a dual-wavelength pulse laser”, IEEE Photon. Technol. Lett., vol. 16, pp. 572-574, 2004.
61. S. Y. Cheng, K. S. Chiang, and H. P. Chan, “Birefringence characteristics of benzocyclobutene rib optical waveguides”, Electron. Lett., vol. 40, pp. 372-373, 2004.

62. K. S. Chiang, C. K. Chow, H. P. Chan, Q. Liu, and K. P. Lor, "Widely tunable polymer long-period waveguide grating with polarization-insensitive resonance wavelength", Electron. Lett., vol. 40, pp. 422-423, 2004.
63. Y. Liu, K. S. Chiang, and P. L. Chu, "Generation of dual-wavelength picosecond pulses from a self-seeded Fabry-Perot laser diode and a polarization-maintaining fiber Bragg grating", IEEE Photon. Technol. Lett., vol. 16, pp. 1742-1744, 2004.
64. K. S. Chiang, F. Y. M. Chan, and M. N. Ng, "Analysis of two parallel long-period fiber gratings", IEEE/OSA J. Lightwave Technol., vol. 22, pp. 1358-1366, 2004.
65. K. S. Chiang, K. P. Lor, Q. Liu, C. K. Chow, Y. M. Chu, and H. P. Chan, "Long-period waveguide gratings", Japanese Journal of Applied Physics, vol. 43, pp. 5690-5696, 2004 (review paper).
66. M. Liu, K. S. Chiang, and P. Shum, "Propagation of short pulses in an active nonlinear two-core optical fiber", IEEE J. Quantum Electron., vol. 40, pp. 1597-1602, 2004.
67. F. Y. M. Chan and K. S. Chiang, "Analysis of apodized phase-shifted long-period fiber gratings", Opt. Commun., vol. 244, pp. 233-243, 2005.
68. Q. Liu, K. S. Chiang, and K. P. Lor, "Long-period gratings in polymer ridge waveguides", Opt. Express, vol. 13, pp. 1150-1159, 2005.
69. Y. Liu, K. S. Chiang, and P. L. Chu, "Fiber-Bragg-Grating force sensor based on a wavelength-switched self-seeded Fabry-Perot laser diode", IEEE Photon. Technol. Lett., vol. 17, pp. 450-452, 2005.
70. K. P. Lor, Q. Liu, and K. S. Chiang, "UV-written long-period gratings on polymer waveguides", IEEE Photon. Technol. Lett., vol. 17, pp. 594-596, 2005.
71. K. S. Chiang and C. L. Wong, "Refractive-index profiling of single-mode graded-index optical planar waveguides by the inverse Wentzel-Kramers-Brillouin method with improved accuracy", Optical Engineering, vol. 44, 054601, 2005.
72. Y. Liu, K. S. Chiang, and P. L. Chu, "Generation of picosecond pulses at five close wavelengths by use of a self-seeded Fabry-Perot laser diode and a spectrum-split fiber Bragg grating", Appl. Opt., vol. 44, pp.2895-2901, 2005.
73. K. S. Chiang, "Theory of pulse propagation in optical directional couplers", Nonlinear Optical Physics & Materials, vol. 14, pp. 133-147, 2005 (review paper).
74. Q. Liu, K. S. Chiang, K. P. Lor, and C. K. Chow, "Temperature sensitivity of a long-period waveguide grating in a channel waveguide", Appl. Phys. Lett., vol. 86, 241115, 2005.
75. S. Y. Cheng, K. S. Chiang, and H. P. Chan, "Polarization dependence in polymer waveguide directional couplers", IEEE Photon. Technol. Lett., vol. 17, pp. 1465-1467, 2005.
76. Q. Liu, K. S. Chiang, and K. P. Lor, "Tailoring the transmission characteristics of polymer long-period waveguide gratings by UV irradiation", IEEE Photon. Technol. Lett., vol. 17, pp. 2340-2342, 2005.
77. Y. Bai and K. S. Chiang, "Analysis and design of long-period waveguide-grating couplers", IEEE/OSA J. Lightwave Technol., vol. 23, pp. 4363-4373, 2005.
78. L. Su, K. S. Chiang, and C. Lu, "Fiber Bragg-grating incorporated microbend sensor for simultaneous mechanical parameter and temperature measurements", IEEE Photon. Technol. Lett., vol. 17, pp.2697-2699, 2005.
79. Y. Liu and K. S. Chiang, "Broad-band optical coupler based on evanescent-field coupling between three parallel long-period fibre gratings", IEEE Photon. Technol. Lett., vol. 18, pp. 229-231, 2006.
80. K. Chen, P. L. Chu, K. S. Chiang, and H. P. Chan, "Design and fabrication of a broadband polymer vertically coupled optical switch", IEEE/OSA J. Lightwave Technol., vol. 24, pp. 904-911, 2006.
81. F. Y. M. Chan and K. S. Chiang, "Transfer-matrix method for the analysis of two parallel dissimilar nonuniform long-period fiber gratings", IEEE/OSA J. Lightwave Technol., vol. 24, pp. 1008-1018, 2006.
82. Y. M. Chu, K. S. Chiang, and Q. Liu, "Widely tunable optical bandpass filter by use of polymer long-period waveguide gratings", Appl. Opt., vol. 45, no. 12, pp.2755-2760, 2006.
83. K. S. Chiang, C. K. Chow, Q. Liu, H. P. Chan, and K. P. Lor, "Band-rejection filter with widely tunable center wavelength and contrast using metal long-period grating on polymer waveguide", IEEE Photon. Technol. Lett., vol. 18, no. 9, pp.1109-1111, 2006.
84. Q. Liu and K. S. Chiang, "Design of long-period waveguide grating filter by control of waveguide cladding profile", IEEE/OSA J. Lightwave Technol., vol. 24, no. 9, pp.3540-3546, 2006.
85. Q. Liu, K. S. Chiang, and K. P. Lor, "Condition for the realization of a temperature-insensitive long-period waveguide grating", Opt. Lett., vol. 31, no. 18, pp.2716-2718, 2006.
86. Y. Liu and K. S. Chiang, "Fiber-Bragg-grating cavity sensor interrogated with a self-seeded Fabry-Perot laser diode", IEEE Photon. Technol. Lett., vol. 18, no. 20, pp. 2153-2155, 2006.
87. Y. Bai and K. S. Chiang, "Analysis of long-period waveguide grating arrays", IEEE/OSA J. Lightwave Technol., vol. 24, no. 10, pp.3856-3863, 2006.
88. Y. Bai, Q. Liu, K. P. Lor, and K. S. Chiang, "Widely tunable long-period waveguide grating couplers", Opt. Express, vol. 14, no. 26, pp.12644-12654, 2006.
89. K. S. Chiang, S. Y. Cheng, and Q. Liu, "Characterization of ultrathin dielectric films with the prism-coupler method", IEEE/OSA J. Lightwave Technol., vol. 25, no. 5, pp. 1206-1212, 2007.
90. Y. Liu, K. S. Chiang, and Q. Liu, "Symmetric 3 x 3 optical coupler using three parallel long-period fiber gratings", Opt. Express, vol. 15, no. 10, pp.6494-6499, 2007.
91. Q. Liu, K. S. Chiang, and Y. Liu, "Characterization of single-mode fiber with fiber Bragg gratings for the design of long-period gratings", IEEE/OSA J. Lightwave Technol., vol. 25, no. 8, pp. 2129-2134, 2007.
92. J. Li and K. S. Chiang, "Guided modes of one-dimensional photonic bandgap waveguides", J. Opt. Soc. Am. B, vol. 24, no. 8, pp. 1942-1950, 2007.
93. J. Li and K. S. Chiang, ""Disappearance of modes in planar Bragg waveguides", Opt. Lett., vol. 32, no. 16, pp. 2369-2371, 2007.
94. Y. Liu, K. S. Chiang, R. J. Rao, Z. L. Ran, and T. Zhu, "Light coupling between two parallel CO_2-laser written long-period fiber gratings", Opt. Express, vol. 15, no. 26, pp. 17645-17651, 2007.
95. H. W. Lee, Y. Liu, and K. S. Chiang, "Writing of long-period gratings in conventional and photonic-crystal polarization-maintaining fibers by CO_2-laser pulses", IEEE Photon. Technol. Lett., vol. 20, no. 2, pp. 132-134, 2008.
96. K. X. Chen, K. S. Chiang, and H. P. Chan, "Broadband multi-port dynamic optical power distributor based on thermo-optic polymer waveguide vertical couplers", IEEE Photon. Technol. Lett., vol. 20, no. 4, pp.273-275, 2008.
97. K. S. Chiang and S. Y. Cheng, "Technique of applying the prism-coupler method for accurate measurement of the effective indices of channel waveguides", Opt. Eng., vol. 47, no. 3, pp. 034601(1-4), 2008.
98. K. S. Chiang, Q. Liu, and K. P. Lor, "Refractive-Index profiling of buried planar waveguides by an inverse Wentzel–Kramer–Brillouin method", IEEE/OSA J. Lightwave Technol., vol. 26, no. 11, pp. 1367-1373, 2008.
99. W. Jin, K. S. Chiang, Q. Liu, C. K. Chow, H. P. Chan, and K. P. Lor, "Lithium-niobate channel waveguide for the realization of long-period gratings", IEEE Photon. Technol. Lett., vol. 20, pp. 1258-1260, 2008.
100. J. Li and K. S. Chiang, "Leaky modes in coupled photonic bandgap waveguides", J Opt. Soc. Am. B, vol. 25, no. 8, pp. 1277-1283, 2008.
101. Q. Liu, K. S. Chiang, and Y. Liu, "Six-port optical fiber couplers based on three parallel long-period fiber gratings", IEEE/OSA J. Lightwave Technol., vol. 26, no. 18, pp.3277-3286, 2008.
102. Y. Liu and K. S. Chiang, "CO_2-laser writing of long-period fiber gratings in optical fibers under tension", Opt. Lett., vol. 33, no. 17, pp. 1933-1935, 2008.
103. J. Yang, H. Ming, and K. S. Chiang, "Analysis of erbium-doped ultra-large-core segmented-cladding fibers for optical amplification", IEEE/OSA J. Lightwave Technol., vol. 26, no. 17, pp.3098-3103, 2008.
104. J. Li and K. S. Chiang, "Light guidance in a photonic bandgap slab waveguide consisting of two different Bragg reflectors", Opt. Commun., vol. 281, no. 23, pp.5797-5803, 2008.
105. W. Jin, K. S. Chiang, and Q. Liu, "Electro-optic long-period waveguide gratings in lithium niobate", Opt. Express, vol. 16, no. 25, pp. 20409-20417, 2008.
106. C. K. Chow, K. S. Chiang, Q. Liu, K. P. Lor, and H. P. Chan, "UV-written long-period waveguide grating coupler for broadband add/drop multiplexing", Opt. Commun., vol. 282, pp. 378-381, 2009.
107. A. Yeung, P. L. Chu, G. D. Peng, K. S. Chiang, and Q. Liu, "Design and fabrication of polymer cross fiber for large-core single-mode operation", IEEE/OSA J. Lightwave Technol., vol. 27, no. 2, pp. 101-107, 2009.
108. M. Liu and K. S. Chiang, "Propagation of ultrashort pulses in a nonlinear long-period fiber grating", Applied Physics B, vol. 94, pp. 599-607, 2009.
109. H. W. Lee and K. S. Chiang, "CO_2 laser writing of long-period fiber gratings in photonic crystal fibers under tension", Opt. Express, vol. 17, no. 6, pp. 4533-4539, 2009.
110. Y. Liu, H. W. Lee, K. S. Chiang, T. Zhu, and Y. J. Rao, "Glass structure changes in CO_2-laser writing of long-period fiber gratings in boron-doped single-mode fibers", IEEE/OSA J. Lightwave Technol., vol. 27, no. 7, pp. 857-863, 2009.
111. K. P. Lor, K. S. Chiang, Q. Liu, and H. P. Chan, "UV-writing of buried waveguide devices in epoxy-coated benzocyclobutene", Optical Engineering, vol. 48, no. 4, pp. 044601(1-6), 2009.

112. Y. Gu, K. S. Chiang, and Y. J. Rao, "Writing of apodized phase-shifted long-period fiber gratings with a computer-controlled CO_2 laser", IEEE Photon. Technol. Lett., vol. 21, no. 10, pp. 657-659, 2009.
113. Q. Liu and K. S. Chiang, "Refractive-index sensor based on long-range surface plasmon mode excitation with long-period waveguide grating", Opt. Express, vol. 17, no. 10, pp.7933-7942, 2009.
114. Y. Liu, Q. Liu, and K. S. Chiang, "Optical coupling between a long-period fiber grating and a parallel tilted fiber Bragg grating", Opt. Lett., vol. 34, no. 11, pp. 1726-1728, 2009.
115. K. S. Chiang, "Development of long-period fiber grating coupling devices", Appl. Opt., vol. 48, no. 25, pp. F61-F67, 2009 (review paper).
116. J. Li and K. S. Chiang, "Analysis of one-dimensional high-index guiding photonic bandgap waveguides", J. Opt. Soc. Amer. B, vol. 26, no. 11, pp. 2007-2015, 2009.
117. T. Zhu, K. S. Chiang, Y. J. Rao, Y. Song, C. H. Shi, and M. Liu, "Characterization of long-period fiber gratings written by CO_2 laser in twisted single-mode fibers," OSA/IEEE J. Lightwave Technol., vol. 27, no. 21, pp. 4863-4869, 2009.
118. M. Liu and K. S. Chiang, "Propagation of ultrashort pulses in a nonlinear two-core photonic crystal fiber," Applied Physics B, vol. 98, pp. 815-820, 2010.
119. W. Jin, K. S. Chiang, and Q. Liu, "Thermally tunable lithium-niobate long-period waveguide grating filter fabricated by reactive ion etching," Opt. Lett., vol. 35, no. 4, pp. 484-486, 2010.
120. Z. Wang, K. S. Chiang, and Q. Liu, "Microwave photonic filter based on circulating a cladding mode in a fiber ring resonator," Opt. Lett., vol. 35, no. 5, pp. 769-771, 2010.
121. Q. Liu and K. S. Chiang, "Planar long-period grating filter based on long-range surface plasmon mode of buried metal stripe waveguide," Opt. Express, vol. 18, no. 9, pp. 8963-8968, 2010 (also selected for the July 06, 2010 issue of the Virtual Journal of Biomedical Optics (VJBO), http://vjbo.osa.org/virtual_issue.cfm)
122. W. Jin, K. S. Chiang, and Q. Liu, "Analysis of lithium niobate electrooptic long-period waveguide gratings," IEEE/OSA J. Lightwave Technol., vol. 28, no. 10, pp. 1477-1484, 2010.
123. Z. Wang, K. S. Chiang, and Q. Liu, "All-fiber tunable microwave photonic filter based on a cladding-mode coupler," IEEE Photon. Technol. Lett., vol. 22, no. 16, pp. 1241-1243, 2010.
124. M. Liu and K. S. Chiang, "Pulse propagation in a decoupled two-core fiber," Opt. Express, vol. 18, no. 20, pp. 21261-21268, 2010.
125. K. P. Lor, K. S. Chiang, Q. Liu, and H. P. Chan, "Bottom-heating approach for the realization of thermooptic polymer waveguide devices," IEEE Photon. Technol. Lett., vol. 23, no. 3, pp. 155-157, 2011.
126. Y. Liu and K. S. Chiang, "Wavelength switching of picosecond pulses generated from a self-seeded Fabry-Perot laser diode with a tilted fiber Bragg grating formed in a graded-index multimode fiber," Appl. Opt., vol. 50, no. 6, pp. 829-834, 2011.
127. S. C. Chan, Q. Liu, Z. Wang, and K. S. Chiang, "Tunable negative-tap photonic microwave filter based on a cladding-mode coupler and an optically injected laser of large detuning," Opt. Express, vol. 19, no. 13, pp. 12045-12052, 2011.
128. J. H. Li, K. S. Chiang, and K. W. Chow, "Modulation instabilities in two-core optical fibers," J. Opt. Soc. Amer. B, vol. 28, no. 7, pp. 1693-1701, 2011.
129. K. S. Chiang and Q. Liu, "Formulae for the design of polarization-insensitive multimode interference couplers," IEEE Photon. Technol. Lett., vol. 123, no. 18, pp. 1277-1279, 2011.
130. Q. Liu, K. S. Chiang, L. Reekie, and Y. T. Chow, "CO_2 laser induced refractive-index changes in optical polymers," Opt. Express, vol. 20, no. 1, pp. 576-582, 2012.
131. C. Zhang and K. S. Chiang, "Broadband optical fiber tap based on cladding-mode coupling," Optical Engineering, vol. 57, no. 075001-(1-4), 2012.
132. T. Zhu, F. Xiao, L. Xu, M. Liu, M. Deng, and K. S. Chiang, "Pressure-assisted low-loss fusion splicing between photonic crystal fiber and single-mode fiber," Opt. Express, Vol. 20, no. 22, pp. 24465-24471, 2012.
133. Q. Liu and K. S. Chiang, "Ultra-uniform field distribution in a finite-width metal-dielectric-metal waveguide," Plasmonics, vol. 8, no. 2, pp. 277-282, 2013.
134. M. Liu and K. S. Chiang, "Two-core photonic crystal fiber with zero intermodal dispersion," Opt. Commun., vol. 293, pp. 49-53, 2013.
135. F. Tian, J. Kanka, B. Zou, K. S. Chiang, and H. Du, "Long-period gratings inscribed in photonic crystal fiber by symmetric CO2 laser irradiation," Opt. Express, vol. 21, no. 11, pp. 13208-13218, 2013.
136. J. H. Li, K. S. Chiang, and K. W. Chow, "Suppression of pulse splitting in two-core fibers," J. Opt. Soc. Amer. B, vol. 30, no. 2, pp. 460-467, 2013.
137. B. Zou and K. S. Chiang, "Phase retrieval from transmission spectrum for long-period fiber gratings," IEEE/OSA J. Lightwave Technol., vol. 31, no. 13, pp. 2223-2229, 2013.
138. W. Jin, K. S. Chiang, K. P. Lor, H. P. Chan, Jack T. L. To, and R. H. M. Leung, "Industry compatible embossing process for the fabrication of waveguide-embedded optical printed circuit boards," IEEE/OSA J. Lightwave Technol., vol. 31, no. 24, pp. 4045-4050, 2013.
139. Y. Wu, B. Yao, Y. Cheng, Y. Rao, X. Zhou, B. Wu, and K. S. Chiang, "Four-wave mixing in a microfiber attached onto a graphene film," IEEE Photon. Technol. Lett., vol. 26, no. 3, pp. 249-252, 2014.
140. J. H. Li, K. S. Chiang, and K. W. Chow, "Switching of ultrashort pulses in nonlinear high-birefringence two-core optical fibers," Opt. Commun., vol. 318, pp. 11-16, 2014.
141. J. Dong and K. S. Chiang, "Mode-locked fiber laser with transverse-mode selection based on a two-mode FBG," IEEE Photon. Technol. Lett., vol. 26, no. 17, pp. 1766-1769, 2014.
142. B. Zou and K. S. Chiang, "Application of the Hilbert Transform method for the retrieval of the phase characteristics of plasmonic metal Bragg gratings," Plasmonics, Sept. 2014, DOI: 10.1007/s11468-014-9783-3.
143. W. Jin and K. S. Chiang, "Mode switch based on electro-optic long-period waveguide grating in lithium niobate," Opt. Lett., vol. 40, no. 2, pp. 237-240, 2015.
144. J. Dong and K. S. Chiang, "Temperature-insensitive mode converters with CO_2-laser written long-period fiber gratings," IEEE Photon. Technol. Lett., vol. 27, no. 9, pp.1006-1009, 2015.
145. K. X. Chen, X. P. Li, Y. L. Zheng, and K. S. Chiang, "Lithium-niobate Mach-Zehnder interferometer with enhanced index contrast by SiO_2 Film," IEEE Photon. Technol. Lett., vol. 27, no. 11, pp.1224-1227, 2015.
146. J. Dong, K. S. Chiang, and W. Jin, "Mode multiplexer based on integrated horizontal and vertical polymer waveguide couplers," Opt. Lett., vol. 40, no. 13, pp.3125-3128, 2015.
147. Y. Wu and K. S. Chiang, "Compact three-core fibers with ultra-low differential group delays for broadband mode-division multiplexing," Opt. Express, vol. 23, no. 16, pp.20867-20875, 2015.
148. Y. Yang, K. Chen, W. Jin, and K. S. Chiang, "Widely wavelength-tunable mode converter based on polymer waveguide grating, "IEEE Photon. Technol. Lett., vol. 27, no. 18, pp.1985-1988, 2015.
149. J. Dong, K. S. Chiang, and W. Jin, "Compact three-dimensional polymer waveguide mode multiplexer," IEEE/OSA J. Lightwave Technol., vol. 33, no. 22, pp.4580-4588, 2015.
150. M.-Y. Chen and K. S. Chiang, "Mode-selective characteristics of an optical fiber with a high-index core and a photonic bandgap cladding," IEEE J. Sel. Top. Quantum Electron., vol. 22, no. 2, paper 4900307, 2016.
151. Z. Chang and K. S. Chiang, "Experimental verification of optical models of grahpene with multimode slab waveguides," Opt. Lett., vol. 41, no. 9, pp.2129-2132, 2016.
152. M. Zhang, K. Chen, W. Jin, and K. S. Chiang, "Electro-optic mode switch based on lithium-niobate Mach-Zehnder interferometer," Appl. Opt., vol. 55, no. 16, pp. 4418-4422, 2016.
153. W. Jin and K. S. Chiang, "Mode converters based on cascaded long-period waveguide gratings," Opt. Lett., vol. 41, no. 13, pp.3130-3133, 2016.
154. S. K. Mishra, B. Zou, and K. S. Chiang, "Surface-plasmon-resonance refractive-index sensor with Cu-coated polymer waveguide," IEEE Photon. Technol. Lett., vol. 28, no. 17 pp. 1835-1838, 2016.
155. J. H. Li, H. Zhou, K. S. Chiang, and S. R. Xiao, "Modulation instabilities in equilateral three-core optical fibers," J. Opt. Soc. Amer. B, vol. 33, no. 11, pp. 2357-1267, 2016.
156. J. Wu, J. Luo, N. Cernetic, K. Chen, K. S. Chiang, and A. K-Y Jen, "PCBM-doped electro-optic materials: dielectric, optical and electro-optic properties investigation for high efficient poling," Journal of Materials Chemistry C, vol. 4, no. 43, pp. 10286-10292, 2016.
157. Y. Wu and K. S. Chiang, "Mode-selective coupling between few-mode fibers and buried channel waveguides," Opt. Express, vol. 24, no. 26, pp. 30108-30123, 2016.
158. Y. Wu and K. S. Chiang, "Ultra-broadband mode multiplexers based on three-dimensional asymmetric waveguide branches," Opt. Lett., vol. 42, no. 3, pp. 407-410, 2017.
159. S. K. Mishra, B. Zou, and K. S. Chiang, "Wide-range pH sensor based on a smart-hydrogel-coated long-period fiber grating," IEEE J. Sel. Top. Quantum Electron., vol. 23, no. 2, Paper 5601405, 2017.

160. W. Wang, J. Wu, K. Chen, W. Jin, and K. S. Chiang, "Ultra-broadband mode converters based on length-apodized long-period waveguide gratings," Opt. Express, vol. 25, no. 13, pp. 14341-14350, 2017.

Selected Invited Conference Articles:

1. K. S. Chiang, "Widely tunable long-period waveguide grating filters", Asia-Pacific Optical and Wireless Communications Conference and Exhibition (APOC-2006) (Gwangju, South Korea, Sept., 2006), Paper 6351-167, 2006. [Link to full paper]
2. K. S. Chiang and Q. Liu, "Long-period gratings for application in optical communications", Proc. 5th International Conference on Optical Communications and Networks and 2nd International Symposium on Advances and Trends in Fiber Optics and Applications (ICOCN/ATFO 2006) (Chengdu, China, Sept. 2006), pp.128-133, 2006. [Link to full paper]
3. Y. Liu and K. S. Chiang, "Recent development on CO_2-laser written long-period fiber gratings", Asia-Pacific Optical Communications (APOC 2008) (Hangzhou, China, Oct., 2008), Proc. SPIE, Vol.7134, Paper no. 713437, 2008. [Link to full paper]
4. K. S. Chiang, "Development of optical polymer waveguide devices," SPIE Photonics West 2010 (San Francisco, USA, Jan. 2010), Proc. SPIE, Vol. 7605, 760507, 2010.
5. K. S. Chiang and W. Jin, "Electro-optic long-period waveguide grating devices," Proc. 17th Optoelectronics and Communications Conference (OECC 2012) (Busan, South Korea, July, 2012), pp. 545-546, 2012.
6. K. S. Chiang, "Multicore fibers: from nonlinear optical switching to mode-division multiplexing," Asia Communications and Photonics Conference – International Conference on Information Photonics and Optical Communications (ACP-IPOC 2013) (Beijing, China, Nov., 2013), 2013.
7. K. S. Chiang, "Polymer optical waveguide devices for mode-division-multiplexing applications," SPIE Proc. Integrated Optics: Physics and Simulations III (Prague, Czech Republic, April 2017), SPIE Vol. 10242, Paper 102420R, 2017. http://dx.doi.org/10.1117/12.2265275.

Science in 2 Minutes - Short video program on fiber optics produced in 2009 for general audience

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