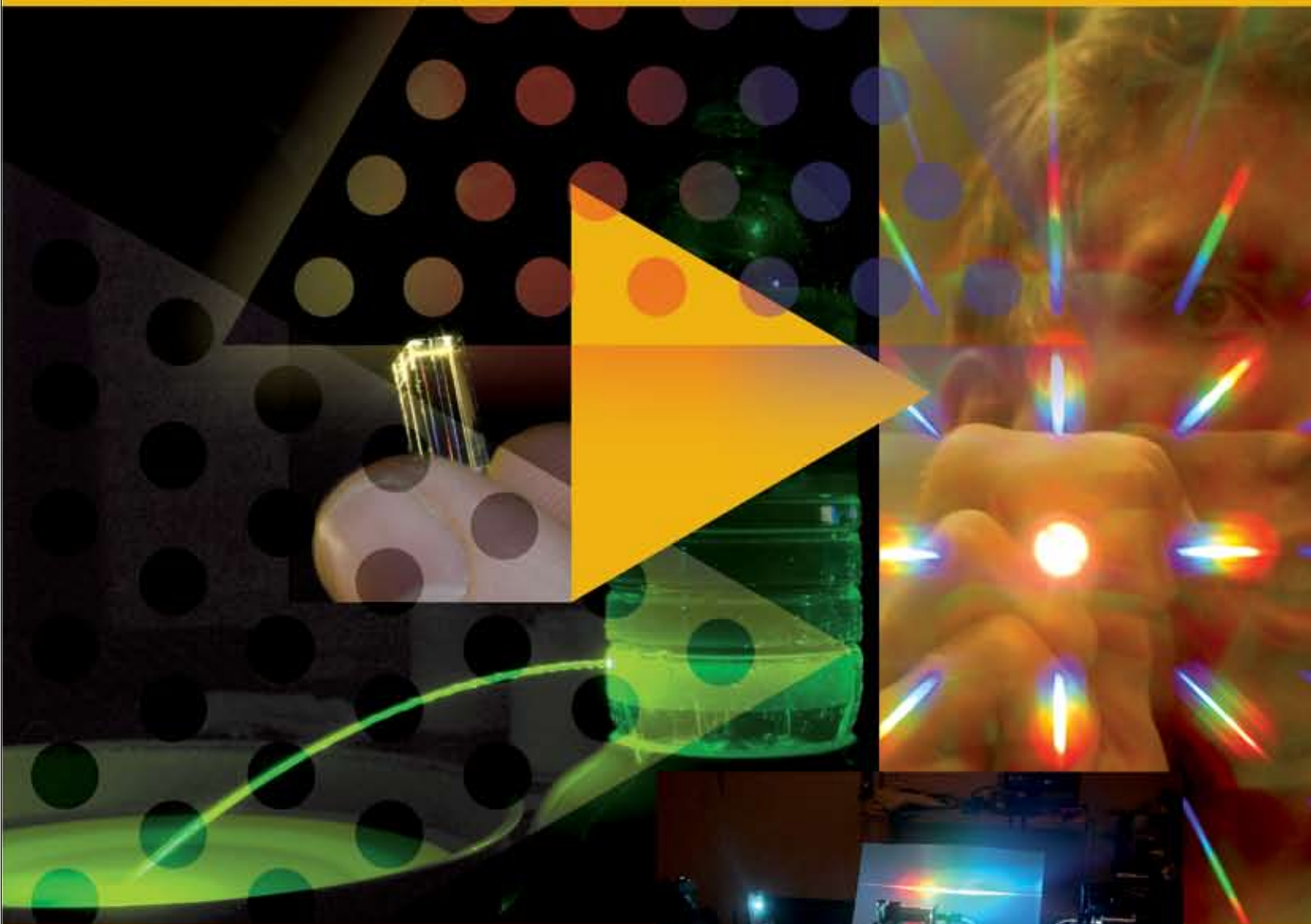




# CUDOS

The Centre for Ultrahigh bandwidth Devices for Optical Systems (CUDOS)



A N N U A L R E P O R T

2006

## Journal Publications

1. Adams R, Rochette M, Ng TT, Eggleton BJ, All-Optical In-Band OSNR Monitoring at 40 Gb/s Using a Nonlinear Optical Loop Mirror, *IEEE PHOTONICS TECHNOLOGY LETTERS* 18, 469- 471 (2006)
2. Ams M, Marshall GD, Withford MJ, Study of the influence of femtosecond laser polarisation on direct writing of waveguides, *OPTICS EXPRESS* 14, 13158-13163 (2006)
3. Asatryan AA, Botten LC, Nicorovici NA, McPhedran RC, de Sterke CM, Frequency shift of sources embedded in finite two-dimensional photonic clusters, *WAVES IN RANDOM AND COMPLEX MEDIA* 16, 151-165, (2006)
4. Baker NJ, Lee HW, Littler IC, de Sterke CM, Eggleton BJ, Choi DY, Madden S, Luther-Davies B, Sampled Bragg gratings in chalcogenide (As<sub>2</sub>S<sub>3</sub>) rib-waveguides, *OPTICS EXPRESS* 14, 9451-9459 (2006)
5. Bezryadina A, Neshev DN, Desyatnikov AS, Young J, Chen Z, Kivshar YS, Observation of topological transformations of optical vortices in two-dimensional photonic lattices, *OPTICS EXPRESS* 14, 8317-8327(2006)
6. Blows JL, Hu P, Eggleton BJ, Differential group delay monitoring using an all-optical signal spectrum analyser, *OPTICS COMMUNICATIONS* 260, 288-291, (2006)
7. Botten LC, Dossou KB, Wilcox S, McPhedran RC, de Sterke CM, Nicorovici NA, Asatryan AA, Highly accurate modeling of generalised defect modes in photonic crystals using the fictitious source superposition method (invited paper), *INTERNATIONAL JOURNAL OF MICROWAVE AND OPTICAL TECHNOLOGY* 1, 133-145 (2006)
8. Botten LC, Hansen RA, de Sterke CM, Supermodes in multiple coupled photonic crystal waveguides, *OPTICS EXPRESS* 14, 387-396 (2006)
9. Botten LC, McPhedran RC, de Sterke CM, Nicorovici NA, Asatryan AA, Smith GH, Langtry TN, White TP, Fussell DP, Kuhlmeiy BT, From Multipole Methods to Photonic Crystal Device Modelling, Chapter 2 of "Electromagnetic Theory and Applications for Photonic Crystals," Ed. K. Yasumoto, 47-122 (2006)
10. Botten LC, White TP, de Sterke CM, McPhedran RC, Very low reflection, wide-angle coupling into rod-type photonic crystals, *PHYSICAL REVIEW E* 74, 026603 (2006)
11. Desyatnikov AS, Sagemerten N, Fischer R, Terhalle B, Träger D, Neshev DN, Dreischuh A, Denz C, Krolikowski W, Kivshar YS, Two-dimensional self-trapped nonlinear photonic lattices, *OPTICS EXPRESS* 14, 2851-2863 (2006)
12. Dignam MM, Fussell DP, Steel MJ, de Sterke CM, McPhedran RC, Spontaneous Emission Suppression via Quantum Path Interference in Coupled Microcavities, *PHYSICAL REVIEW LETTERS* 96, 103902 (2006)
13. Dossou KB, Botten LC, de Sterke CM, McPhedran RC, Asatryan AA, Chen S, Brnovic J, Efficient couplers for photonic crystal waveguides, *OPTICS COMMUNICATIONS* 265, 207-219 (2006)
14. Dossou KB, Byrne MA, Botten LC, Finite element computation of grating scattering matrices and their application to photonic crystal band calculations, *JOURNAL OF COMPUTATIONAL PHYSICS* 219, 120-143 (2006)
15. Finsterbusch K, Baker N, Ta'eed VG, Eggleton BJ, Choi D, Madden S, Luther-Davies B, Long-period gratings in chalcogenide (As<sub>2</sub>S<sub>3</sub>) rib waveguides, *ELECTRONICS LETTERS* 42, 1094-1095 (2006)
16. Fischer R, Neshev DN, Lopez-Aguayo S, Desyatnikov AS, Sukhorukov AA, Krolikowski W, Kivshar YS, Observation of light localization in modulated Bessel optical lattices, *OPTICS EXPRESS* 14, 2825-2830 (2006)
17. Fischer R, Saltiel SM, Neshev DN, Krolikowski W, Kivshar YS, Broadband femtosecond frequency doubling in random media, *APPLIED PHYSICS LETTERS* 89, 191105 (2006)
18. Fischer R, Trager D, Neshev DN, Sukhorukov AA, Krolikowski W, Denz C, Kivshar YS, Reduced-symmetry two-dimensional solitons in photonic lattices, *PHYSICAL REVIEW LETTERS* 96, 023905 (2006)
19. Fu L, Fuerbach A, Littler ICM, Eggleton BJ, Efficient optical pulse compression using chalcogenide single-mode fibers, *APPLIED PHYSICS LETTERS* 88, 081116 (2006)
20. Fussell DP, Dignam MM, Steel MJ, de Sterke CM, McPhedran RC, Spontaneous emission and photon dynamics in dielectric microcavities, *PHYSICAL REVIEW A* 74, 043806:1-12 (2006)
21. Gamaly E, Rode AV, Luther-Davies B, Ultra fast Laser Ablation and Film Deposition, in *Pulsed Laser Deposition of Thin Films*, R. Eason Ed., John Wiley & Sons, Hoboken, New Jersey, 99-130 (2006)
22. Gamaly EG, Juodkazis S, Nishimura K, Misawa H, Luther-Davies B, Hallo L, Nicolai P, Tikhonchuk VT, Laser-matter interaction in the bulk of a transparent solid: Confined microexplosion and void formation, *PHYSICAL REVIEW B: CONDENSED MATTER AND MATERIALS PHYSICS* 73, 214101 (2006)
23. Gamaly EG, Luther-Davies B, Rode AV, Laser-matter interaction confined inside the bulk of a transparent solid, in "3D Laser Microfabrication: Principles and Applications", Eds. H. Misawa and S. Juodkazis, WILEI-VCH, Weinheim, 5-36 (2006)
24. Garanovich I, Sukhorukov AA, Kivshar YS, Molina M, Surface multi-gap vector solitons, *OPTICS EXPRESS* 14, 4780-4785 (2006)
25. Grillet C, Freeman D, Luther-Davies B, Madden S, McPhedran RC, Moss DJ, Steel MJ, Eggleton BJ, Characterization and modeling of Fano resonances in chalcogenide photonic crystal membranes, *OPTICS EXPRESS* 14, 369-376 (2006)
26. Grillet C, Smith C, Freeman D, Madden S, Luther-Davies B, Magi E, Moss D, Eggleton B, Efficient coupling to chalcogenide glass photonic crystal waveguides via silica optical fiber nanowires, *OPTICS EXPRESS* 14, 1070-1078 (2006)
27. Iredale TB, Steinvurzel P, Eggleton BJ, Electric-arc-induced long-period gratings in fluid-filled photonic bandgap fibre, *ELECTRONICS LETTERS* 42, 739-740 (2006)
28. Johnston BF, Dekker P, Withford MJ, Saltiel SM, Kivshar YS, Simultaneous phase matching and internal interference of two second order parametric processes, *OPTICS EXPRESS* 14, 11756-11765 (2006)
29. Juodkazis S, Kondo T, Misawa H, Rode A, Samoc M, Luther-Davies B, Photo-structuring of As<sub>2</sub>S<sub>3</sub> glass by femtosecond irradiation, *OPTICS EXPRESS* 14, 7751-7756 (2006)
30. Juodkazis S, Misawa H, Hashimoto T, Gamaly EG, Luther-Davies B, Laser-induced microexplosion confined in a bulk of silica: Formation of nanovoids, *APPLIED PHYSICS LETTERS* 88, 201909, (2006)
31. Juodkazis S, Nishimura K, Tanaka S, Misawa H, Gamaly EG, Luther-Davies B, Hallo L, Nicolai P, Tikhon, Laser-Induced Microexplosion Confined in the Bulk of a Sapphire Crystal: evidence of Multimegabar Pressures, *PHYSICAL REVIEW LETTERS* 96, 166101 (2006)
32. Kuhlmeiy BT, Nguyen HC, Steel MJ, Eggleton BJ, Confinement loss in adiabatic photonic crystal fiber tapers, *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B* 23, 1965-1974 (2006)
33. Kuhlmeiy BT, Pathmanandavel K, McPhedran RC, Multipole analysis of photonic crystal fibers with coated inclusions, *OPTICS EXPRESS* 14, 10851-10864 (2006)
34. Lamont MRE, Fu L, Rochette M, Moss DJ, Eggleton BJ, 2R optical regenerator in As<sub>2</sub>Se<sub>3</sub> chalcogenide fiber characterized by a frequency-resolved optical gating analysis, *APPLIED OPTICS* 45, 7904-7907 (2006)
35. Lamont MRE, Rochette M, Moss DJ, Eggleton BJ, Two-Photon Absorption Effects on Self-Phase-Modulation-Based 2R Optical Regeneration, *IEEE PHOTONICS TECHNOLOGY LETTERS* 18, 1185-1187 (2006)
36. Lee AJ, Withford MJ, Dawes JM, Investigation into the power-law dependence of fibre Bragg grating growth, *OPTICS COMMUNICATIONS* 257, 261-269 (2006)
37. Li J, Jia B, Zhou G, Gu M, Fabrication of three-dimensional woodpile photonic crystals in a PbSe quantum dot composite material, *OPTICS EXPRESS* 14, 10740-10745 (2006)



38. Littler CM, Rochette M, Eggleton BJ, Impact of chromatic dispersion and group delay ripple on self-phase modulation based optical regenerators, *OPTICS COMMUNICATIONS* 265, 95-99, (2006)
39. Littler ICM, Fu L, Lee M, Eggleton BJ, Investigation of single harmonic group delay ripple on picosecond pulses using FROG: Tailoring pulse bursts, *OPTICS COMMUNICATIONS* 265, 147-152 (2006)
40. Littler ICM, Fu LB, Mägi EC, Pudo D, Eggleton BJ, Widely tunable, acousto-optic resonances in Chalcogenide As<sub>2</sub>Se<sub>3</sub> fiber, *OPTICS EXPRESS* 14, 8088-8095 (2006)
41. Littler ICM, Grujic T, Eggleton BJ, Photothermal effects in fiber Bragg gratings, *APPLIED OPTICS* 45, 4679-4685 (2006)
42. Magne J, Bolger J, Rochette M, LaRochelle S, Chen LR, Eggleton BJ, Azana J, Generation of a 4 x 100 GHz Pulse-Train From a Single-Wavelength 10-GHz Mode-Locked Laser Using Superimposed Fiber Bragg Gratings and Nonlinear Conversion, *JOURNAL OF LIGHTWAVE TECHNOLOGY* 24, 2091-2099 (2006)
43. Marshall G, Ams M, Withford M, Direct laser written waveguide-Bragg gratings in bulk fused silica, *OPTICS LETTERS* 31, 2690-2691 (2006)
44. Matuszewski M, Rosberg CR, Neshev DN, Sukhorukov AA, Mitchell A, Trippenbach M, Austin MW, Krolikows, Crossover from self-defocusing to discrete trapping in nonlinear waveguide arrays, *OPTICS EXPRESS* 14, 254-259 (2006)
45. McPhedran RC, Optics: Anomalous physics pulled apart, *NATURE PHYSICS* 2, News and Views, 225-226 (2006)
46. Miroshnichenko A, Pinkevych I, Kivshar Y, Tunable All-optical Switching in Periodic Structures with Liquid-crystal Defects, *OPTICS EXPRESS* 14, 2839-2844 (2006)
47. Mok JT, de Sterke CM, Eggleton BJ, Delay-tunable gap-soliton-based slow-light system, *OPTICS EXPRESS* 14, 11987-11996 (2006)
48. Mok JT, de Sterke CM, Littler ICM, Eggleton BJ, Dispersionless slow light using gap solitons, *NATURE PHYSICS*, (2006)
49. Molina MI, Garanovich IL, Sukhorukov AA, Kivshar YS, Discrete surface solitons in semi-infinite binary waveguide arrays, *OPTICS LETTERS* 31, 2332-2334 (2006)
50. Molina MI, Vicencio RA, Kivshar YS, Discrete solitons and nonlinear surface modes in semi-infinite waveguide arrays, *OPTICS LETTERS* 31, 1693-1695 (2006)
51. Monat C, Grillet C, Domachuk P, Smith C, Magi E, Moss DJ, Nguyen HC, Tomljenovic-Hanic S, Cronin-Golomb M, Eggleton BJ, Freeman D, Madden S, Luther-Davies B, Frontiers in microphotonic: tunability and all-optical control, *LASER PHYSICS LETTERS* 4, 177-186 (2006)
52. Morrison S, Kivshar YS, Tamm States and nonlinear surface modes in photonic crystals, *OPTICS COMMUNICATIONS* 266, 323-326 (2006)
53. Motzek K, Sukhorukov AA, Kivshar YS, Polychromatic interface solitons in nonlinear photonic lattices, *OPTICS LETTERS* 31, 3125-3127 (2006)
54. Myers SJ, Fussell D, Dawes JM, Mägi E, Eggleton BJ, McPhedran RC, de Sterke CM, Manipulation of spontaneous emission in a tapered photonic crystal fibre, *OPTICS EXPRESS* 14, 12439-12444 (2006)
55. Nguyen HC, Finsterbusch K, Moss DJ, Eggleton BJ, Dispersion in nonlinear figure of merit of As<sub>2</sub>Se<sub>3</sub> chalcogenide fibre, *ELECTRONICS LETTERS* 42, 571-572 (2006)
56. Orbons SM, Freeman D, Luther-Davies B, Gibson BC, Huntington ST, Jamieson DN, Roberts A, Optical properties of silver composite metamaterials, *PHYSICA B: Condensed Matter - special edition covering ETOPIIM* (2006)
57. Pudo D, Mägi EC, Eggleton BJ, Long-period gratings in chalcogenide fibers, *OPTICS EXPRESS* 14, 3763-3766 (2006)
58. Rochette M, Blows JL, Eggleton BJ, 3R optical regeneration: an all-optical solution with BER improvement, *OPTICS EXPRESS* 14, 6414-6427 (2006)
59. Rochette M, Fu L, Ta'eed V, Moss DJ, Eggleton BJ, 2R optical regeneration: an all-optical solution for BER improvement, *IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS* 12, 736-744 (2006)
60. Rosberg CR, Garanovich IL, Sukhorukov AA, Neshev DN, Krolikowski W, Kivshar YS, Demonstration of all-optical beam steering in modulated photonic lattices, *OPTICS LETTERS* 31, 1498-1500 (2006)
61. Rosberg CR, Neshev DN, Krolikowski W, Mitchell A, Vicencio RA, Molina MI, Kivshar YS, Observation of Surface Gap Solitons in Semi-Infinite Waveguide Arrays, *PHYSICAL REVIEW LETTERS* 97, 083901 (2006)
62. Rosberg CR, Neshev DN, Kartashov YV, Vicencio RA, Krolikowski W, Molina MI, Mitchell A, Vysloukh VA, Torner L, Kivshar YS, Nonlinear Tamm States in Periodic Photonic Structures, *OPTICS AND PHOTONICS NEWS* (2006)
63. Serbin J, Gu M, Superprism phenomena in waveguide-coupled woodpile structures fabricated by two-photon polymerization, *OPTICS EXPRESS* 14, 3563-3568 (2006)
64. Serbin J, Gu M, Experimental Evidence for Superprism Effects in Three-Dimensional Polymer Photonic Crystals, *ADVANCED MATERIALS* 18, 221-224 (2006)
65. Shokooh-Saremi M, Ta'eed VG, Baker NJ, Littler ICM, Moss DJ, Eggleton BJ, Ruan Y, Luther-Davies B, High-performance Bragg gratings in chalcogenide rib waveguides written with a modified Sagnac interferometer, *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B* 23, 1323-1331 (2006)
66. Steinvurzel P, de Sterke CM, Eggleton BJ, Kuhlmei BT, Steel MJ, Mode field distributions in solid core photonic bandgap fibers, *OPTICS COMMUNICATIONS* 263, 207-213 (2006)
67. Steinvurzel P, de Sterke CM, Steel MJ, Kuhlmei BT, Eggleton BJ, Single scatterer Fano resonances in solid core photonic band gap fibers, *OPTICS EXPRESS* 14, 8797-8811 (2006)
68. Steinvurzel P, Moore ED, Mägi EC, Eggleton BJ, Tuning properties of long period gratings in photonic bandgap fibers, *OPTICS LETTERS* 31, 2103-2105 (2006)
69. Steinvurzel P, Moore ED, Mägi EC, Kuhlmei BT, Eggleton BJ, Long period grating resonances in photonic bandgap fiber, *OPTICS EXPRESS* 14, 3007-3014 (2006)
70. Sukhorukov A, Enhanced Soliton Transport in Quasiperiodic Lattices with Introduced Aperiodicity, *PHYSICAL REVIEW LETTERS* 96 113902 (2006)
71. Sukhorukov AA, Soliton dynamics in deformable nonlinear lattices, *PHYSICAL REVIEW E* 74, 026606 (2006)
72. Sukhorukov AA, Neshev DN, Dreischuh A, Fischer R, Ha S, Krolikowski W, Bolger J, Mitchell A, Eggleton BJ, Polychromatic nonlinear surface modes generated by supercontinuum light, *OPTICS EXPRESS* 14, 11265-11270 (2006)
73. Ta'eed VG, Fu L, Pelusi M, Rochette M, Littler IC, Moss DJ, Eggleton BJ, Error free all optical wavelength conversion in highly nonlinear As-Se chalcogenide glass fiber, *OPTICS EXPRESS* 14, 10371-10376 (2006)
74. Ta'eed VG, Lamont MRE, Moss DJ, Eggleton BJ, Choi DY, Madden S, Luther-Davies B, All optical wavelength conversion via cross phase modulation in chalcogenide glass rib waveguides, *OPTICS EXPRESS* 14, 11242-11247 (2006)
75. Ta'eed VG, Shokooh-Saremi M, Fu L, Littler ICM, Moss DJ, Rochette M, Eggleton BJ, Ruan Y, Luther-Davies B, Self-phase modulation-based integrated optical regeneration in chalcogenide waveguides, *IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS* 12, 360-370 (2006)
76. Tomljenovic-Hanic S, de Sterke CM, Steel MJ, Design of high-Q cavities in photonic crystal slab heterostructures by air-holes infiltration, *OPTICS EXPRESS* 14, 12451-12456 (2006)
77. Tomljenovic-Hanic S, de Sterke CM, Steel MJ, Packing density of conventional waveguides and photonic crystal waveguides, *OPTICS COMMUNICATIONS* 259, 142-148 (2006)
78. Tomljenovic-Hanic S, Steel MJ, de Sterke CM, Salzman J, Diamond based photonic crystal microcavities, *OPTICS EXPRESS* 14, 3556-3562 (2006)



79. Trompeter H, Krollkowski W, Neshev DN, Desyatnikov AS, Sukhorukov AA, Kivshar YS, Pertsch T, Peschel, Bloch Oscillations and Zener Tunneling in Two-Dimensional Photonic Lattices, PHYSICAL REVIEW LETTERS 96, 053903 (2006)
80. Träger D, Fischer R, Neshev DN, Sukhorukov AA, Denz C, Królikowski W, Kivshar YS, Nonlinear Bloch modes in two-dimensional photonic lattices, OPTICS EXPRESS 14, 1913-1923 (2006)
81. Tsoy EN, de Sterke CM, Dynamics of ultrashort pulses near zero dispersion wavelength, JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B 23, 2425-2433 (2006)
82. Wang RP, Madden S, Zha C, Rode A, Luther-Davies B, Annealing induced phase transformations in amorphous As<sub>2</sub>S<sub>3</sub> films, JOURNAL OF APPLIED PHYSICS 100, 063524 (2006)
83. Wu S, Serbin J, Gu M, Two-photon polymerisation for three-dimensional micro-fabrication, JOURNAL OF PHOTOCHEMISTRY AND PHOTOBIOLOGY A: CHEMISTRY 181, 1-11 (2006)
84. Wu S, Zhou G, Gu M, Synthesis of high refractive index composites next term for photonic applications, OPTICAL MATERIALS, in press (2006)
85. Wu X, Fang W, Yamilov A, Chabanov AA, Asatryan AA, Botten LC, Cao H, Random lasing in weakly scattering systems, PHYSICAL REVIEW A 74, 053812 (2006)
86. Zhou G, Gu M, Direct optical fabrication of three-dimensional photonic crystals in high refractive index LiNbO<sub>3</sub> crystal, OPTICS LETTERS 31, 2783-2785 (2006)
- Baker NJ, Lee HW, Littler ICM, Choi DY, Madden S, Luther-Davies B, de Sterke CM, Eggleton BJ, Fabrication of sampled Bragg gratings in As<sub>2</sub>S<sub>3</sub> rib-waveguides, ACOFT, Melbourne, Australia, July 2006
- Bezryadina A, Neshev DN, Desyatnikov AS, Young J, Chen Z, Kivshar YS, Observation of topological transformations of vortices in two-dimensional lattices, CLEO/QELS 2006, Long Beach, CA, May 2006
- Bolger JA, Magné J, Rochette M, LaRochelle S, Chen LR, Azaña J, Eggleton BJ, Ultrahigh speed pulse trains via superimposed fibre Bragg gratings and nonlinear wavelength conversion, ACOFT/AOS, Melbourne, Australia, July 2006
- Botten LC, Semi-analytic approaches to the modelling of photonic crystal devices, ETOPIIM 7, Sydney, Australia, July 2006 (Invited)
- Botten LC, Strengths and applications of semianalytic techniques for photonic crystal device modelling, IEEE NUSOD, Singapore, September 2006 (Invited)
- Botten LC, Asatryan AA, Nicorovici NA, McPhedran RC, de Sterke CM, Extension of Pichard's formula for conductance to systems with different numbers of input and output channels, ETOPIIM 7, Sydney, Australia, July 2006
- Botten LC, Byrne MA, Asatryan AA, Nicorovici NA, Bloch mode modelling of the scattering of plane waves and Fano resonances for a photonic crystal slab, PIERS 2006, Boston, USA, March 2006
- Botten LC, Byrne MA, Asatryan AA, Nicorovici NA, Norton AH, McPhedran RC, Fano resonances of photonic crystal slabs, ACOFT, Melbourne, Australia, July 2006
- Botten LC, de Sterke CM, Hansen RA, Supermodes of coupled photonic crystal waveguides: a tight binding analysis, PIERS 2006, Tokyo, Japan, August 2006 (Invited)
- Botten LC, Hansen RA, de Sterke CM, Tight binding analysis of coupled photonic crystal waveguides, CLEO/QELS, Long Beach, CA, May 2006
- Botten LC, Hansen RA, de Sterke CM, Tight binding analysis of coupled photonic crystal waveguides, ACOFT, Melbourne, Australia, July 2006
- Botten LC, McPhedran RC, Byrne MA, Asatryan AA, Nicorovici NA, Norton AH, de Sterke CM, The modelling of Fano resonances in Photonic Crystal Slabs, OSA META, Grand Island, The Bahamas, June 2006
- Botten LC, White TP, de Sterke CM, McPhedran RC, Efficient, low reflection coupling into rod-type photonic crystals binding analysis, PIERS 2006, Tokyo, Japan, August 2006
- Choi DY, Madden S, Rode A, Wang R, Luther-Davies B, Advanced processing methods for As<sub>2</sub>S<sub>3</sub> waveguide fabrication, Optoelectronic and Microelectronic Materials and Devices, Perth, Australia 2006
- Choi DY, Madden S, Rode A, Wang R, Luther-Davies B, Fabrication and optical Characterisation of Ge<sub>34</sub>As<sub>12</sub>Se<sub>55</sub> (AMTIR-1) Thin Film Waveguides, IEEE LEOS 2006
- Cronin-Golomb M, Domachuk P, Eggleton BJ, Optical Tweezers and Optofluidics, IEEE LEOS Summer Topicals, Québec City, Canada, July 2006
- Dawes JM, Marshall GD, Withford MJ, Tilted fibre gratings for sideways light delivery, Pacific International Conference on Appl. Of Lasers and Optics, Melbourne, Australia, April 2006
- de Sterke CM, Mok JT, Littler ICM, Eggleton BJ, Slow gap solitons in optical fibre Bragg gratings, IEEE Lasers and Electrooptics (LEOS), Montreal, Quebec, November 2006 (Invited)
- de Sterke CM, Mok JT, Littler ICM, Eggleton BJ, Slow, high-intensity light in fibre Bragg gratings, OSA Topical Meeting on Slow and Fast Light, Washington D.C., July 2006
- de Sterke CM, White TP, Botten LC, McPhedran RC, Low interface reflection of rod-type photonic crystals: a bottom up approach, Photonic Crystal Materials and Devices IV, San Jose, CA, January 2006 (Invited)
- Domachuk P, Magi E, Cronin-Golomb M, Eggleton BJ, Optically Trapped Silica Micro-fibers (poster), ACOFT, Melbourne, Australia, July 2006
- Domachuk P, Magi EC, Cronin-Golomb M, Eggleton BJ, Optically Trapped Silica Nanowires, ICONN, July 2006
- Domachuk P, Monat C, Grillet C, Nguyen HC, Magi EC, Littler ICM, Cronin-Golomb M, Eggleton BJ, Optofluidic Tuning and Sensing in Fiber based Devices, IEEE LEOS Summer Topicals, Québec City, Canada, July 2006 (Invited)
- Dossou KB, Botten LC, Wilcox S, McPhedran RC, de Sterke CM, Nicorovici NA, Asatryan AA, Exact modeling of photonic crystal defect modes using the generalised fictitious source superposition method, ETOPIIM 7, Sydney, Australia, July 2006
- Eggleton BJ, Moss DJ, Lamont MRE, Ta'eed VG, Madden S, Luther-Davies B, Chalcogenide Glass devices for all optical signal processing, IEEE Lasers and Electro-Optics Society (LEOS) Annual Meeting, Montreal, Quebec, November 2006 (Invited)
- Eggleton BJ, Focus Meeting on New Directions in Photonics and Optical Communications, CLEO/Euro-Optics, France, September 2006 (Invited)
- Eggleton BJ, Plenary Presentation, Smart Materials, Nano and Micro-Smart Systems 2006, Adelaide, Australia, December 2006 (Invited)
- Eggleton BJ, Plenary Presentation, SIAM Conference on Nonlinear Waves and Coherent Structures, University of Washington, Seattle, Washington, September 2006 (Invited)
- Eggleton BJ, Plenary Presentation, 15th International laser physics workshop, Lausanne, Switzerland, July 2006 (Invited)
- Eggleton BJ, Indian Nanoscience Workshop, Bangalore, April 2006 (Invited)
- Finsterbusch K, Baker N, Ta'eed V, Eggleton BJ, Long-period gratings in chalcogenide glass rib waveguides, ACOFT, Melbourne, Australia, July 2006
- Finsterbusch K, Nguyen H, Moss DJ, Eggleton BJ, Dispersion in the Nonlinear Figure of Merit of As<sub>2</sub>Se<sub>3</sub> Chalcogenide Fibre, IEEE / OSA Conference for Lasers and Electro-Optics (CLEO), Long Beach, CA, May 2006

## Conference Presentations

Alleyne CJ, Kirk AG, McPhedran RC, Nicorovici NA, Maysre D, Enhanced SPR Sensitivity using Sinusoidal Gratings, IEEE Lasers and Electrooptics (LEOS), Montreal, Quebec, November 2006

Ams M, Marshall GD, Piper JA, Withford MJ, Active devices fabricated in bulk glass via femtosecond laser pulses, Pacific International Conference on Appl. Of Lasers and Optics, Melbourne, Australia, April 2006

Ams M, Marshall GD, Withford MJ, Realising photonic circuitry for future optical networks, Australian Institute of Physics 17th National Congress, Brisbane, Australia, December 2006

Asatryan AA, Botten LC, Byrne MA, Nicorovici NA, McPhedran RC, de Sterke CM, The possibility of a mobility edge for photons in two dimensions, ETOPIIM 7, Sydney, Australia, July 2006

Asatryan AA, Botten LC, Nicorovici NA, McPhedran RC, de Sterke CM, Lamb shift of sources embedded in two-dimensional photonic clusters, ETOPIIM 7, Sydney, Australia, July 2006

Austin DR, de Sterke CM, Brown TG, Eggleton BJ, Grating induced spectral enhancement via four-wave mixing, ACOFT, Melbourne, Australia, July 2006

Austin DR, de Sterke CM, Brown TG, Eggleton BJ, The nonlinear wavenumber in supercontinuum generation, ACOFT, Melbourne, Australia, July 2006



- Fischer R, Neshev DN, Krolikowski W, Kivshar YS, Iturbe-Castillo D, Chavez-Cerda S, Meneghetti MR, Caetano DP, Hickmann JM, Observation of spatial shift in interaction of dark nonlocal solitons, AOS, Melbourne, Australia, July 2006
- Fischer R, Neshev DN, Lopez-Aguayo S, Desyatnikov AS, Sukhorukov AA, Krolikowski W, Kivshar YS, Light localization in Bessel photonic lattices, ICOOPMA 2006, Darwin, Australia, July 2006 (Invited)
- Fischer R, Neshev DN, Lopez-Aguayo S, Desyatnikov AS, Sukhorukov AA, Krolikowski WZ, Kivshar YS, Localization of light in optically-induced modulated Bessel lattices, CLEO/QELS 2006, Long Beach, CA, May 2006
- Fischer R, Neshev DN, Lopez-Aguayo S, Desyatnikov AS, Sukhorukov AA, Localization of light in Bessel photonic lattices, ACOFT, Melbourne, Australia, July 2006
- Fischer R, Neshev DN, Lopez-Aguayo S, Desyatnikov AS, Sukhorukov AA, Light localization in Bessel photonic lattices, ICONN 2006, Brisbane, Australia, July 2006
- Fischer R, Salioti SM, Neshev DN, Krolikowski W, Dreischuh A, Kivshar YS, Frequency doubling in SBN crystals with random ferroelectric domains in the thermal focusing regime, Fourteenth International School on Quantum Electronics, Sunny Beach, Bulgaria, September 2006 (poster)
- Fischer R, Traeger D, Neshev DN, Sukhorukov AA, Denz C, Krolikowski WZ, Kivshar YS, Directional nonlinear wave transport in photonic lattices, CLEO/QELS 2006, Long Beach, CA, May 2006
- Freeman D, Luther-Davies B, Grillet C, Madden S, Rode A, Krolikowska M, Chalcogenide glass photonic crystal membranes fabricated by focused ion beam milling, International Conference on Nanoscience and Nanotechnology, Brisbane, Australia 2006
- Freeman D, Luther-Davies B, Madden S, Real time drift correction of a focused ion beam milling system, NSTI Nanotechnology Conference, Boston, May 2006
- Freeman D, Luther-Davies B, Madden S, Real time drift correction of a focused ion beam milling system, International Conference on Nanoscience and Nanotechnology, Brisbane, Australia 2006
- Freeman D, Luther-Davies B, Madden S, Stowe S, Drift correction of a focused ion beam for nano-fabrication of photonic crystals, 16th International Microscopy Congress, Sapporo, Japan, September 2006
- Freeman D, Luther-Davies B, Madden S, Stowe S, Real-time drift correction of a focused ion beam milling system, 19th Aust. Conf. Microscopy and Microanalysis, Sydney, Australia, February 2006
- Fuerbach A, Marshall G, Ams M, Jovanovic N, Withford M, Fernandez A, Graf R, Isemann A, Mueller T, High precision material processing using ultrashort laser pulses, ARNAM Annual Workshop, Brisbane, Australia, June 2006
- Gamaly EG, Joudkakis S, Misawa H, Luther-Davies B, Rode A, Hallo L, Nicolai P, Tikhonchuk VT, Laser-induced micro-explosion inside of sapphire crystal: Evidence of Multi-Megabar pressure, XXIX European Conference on Laser Interaction with Matter, Madrid, Spain, June 2006
- Gamaly EG, Madsen NR, Rode AV, Kolev VZ, Luther-Davies B, Effects of non-equilibrium energy distribution of surface atoms on the onset and rate of laser ablation: experiments and theory, International Conference on Laser Ablation, Taos, New Mexico USA, May 2006
- Garanovich I, Surface Multi-Gap Solitons in Nonlinear Waveguide Arrays, ACOFT/AOS: meeting of the Australian Optical Society, Melbourne, July 2006
- Garanovich IL, Sukhorukov AA, Kivshar YS, Broadband Diffraction Management and self-collimation of white-light beams in photonic lattices, Australian Institute of Physics 17th National Congress, Brisbane, Australia, December 2006 (poster)
- Garanovich IL, Sukhorukov AA, Kivshar YS, Broadband diffraction management and self-collimation of white-light beams in photonic lattices, EOS Annual Meeting 2006, Paris, France, October 2006
- Garanovich IL, Sukhorukov AA, Kivshar YS, Light control in nonlinear periodic structures, XIII International School-Conference Foundations & Advances in Nonlinear Science, Minsk, September 2006 (Invited)
- Garanovich IL, Sukhorukov AA, Kivshar YS, Light localization at nonlinear lattice interfaces, EOS Annual Meeting 2006, Paris, France, October 2006
- Garanovich IL, Sukhorukov AA, Kivshar YS, Self-Collimation of Light in Photonic Lattices, Australian Institute of Physics 17th National Congress, Brisbane, Australia, December 2006 (poster)
- Garanovich IL, Sukhorukov AA, Kivshar YS, Self-collimation of white light in photonic lattices, Fourteenth International School on Quantum Electronics, Bulgaria, September 2006
- Garanovich IL, Sukhorukov AA, Kivshar YS, Surface Multi-Gap Solitons in Nonlinear Waveguide Arrays, ACOFT, Melbourne, Australia, July 2006
- Garanovich IL, Sukhorukov AA, Kivshar YS, Molina M, Multi-Gap Discrete Surface Solitons, SIAM Conference on Nonlinear Waves and Coherent Structures, Chile, September 2006
- Grillet C, Freeman D, Luther-Davies B, Madden S, McPhedran R, Moss DJ, Steel MJ, Eggleton BJ, Characterization and modeling of Fano resonances in chalcogenide photonic crystal membranes, CLEO 2006 IEEE / OSA Conference for Lasers and Electro-Optics, Long Beach, CA, May 2006
- Grillet C, Freeman D, Luther-Davies B, Madden S, Smith C, Magi E, McPhedran R, Moss DJ, Steel MJ, Eggleton BJ, Nonlinear photonic crystals in chalcogenide films, SPIE – Photonics: Design, Technology, and Packaging II, 2006
- Grillet C, Smith C, Freeman D, Lee M, Tomljenovic-Hanic S, Magi EC, Moss D, Madden S, Luther-Davies B, Eggleton BJ, Evanescent probing of Chalcogenide photonic crystal cavities and waveguides, ETOPIIM 2006 7th International Conference on the Electrical, Transport, and Optical Properties of Inhomogeneous Media, Sydney, Australia, July 2006
- Grillet C, Smith C, Freeman D, Magi E, Luther-Davies B, Madden S, Moss DJ, Eggleton BJ, Efficient Coupling to Chalcogenide Glass Photonic Crystal Waveguides via Tapered Optical Fiber Nanowires, CLEO 2006 IEEE / OSA Conference for Lasers and Electro-Optics, Long Beach, CA, May 2006
- Grillet C, Smith C, Lee M, Magi EC, Moss D, Eggleton BJ, Freeman D, Madden S, Luther-Davies B, Byrne M, Asatryan AA, Botten LC, Nonlinear photonic crystals in chalcogenide for all optical processing, ACOFT, Melbourne, Australia, July 2006 (Invited)
- Grillet C, Smith C, Monat C, Moss D, Eggleton BJ, Frederick S, Dalacu D, Poole PJ, Lapointe J, Aers G, Williams RL, Coupling via Tapered Nanowire Micro-Loops to Photonic Crystal Nanocavities for Single-Photon Source Applications, ECOC 2006 European Conference on Optical Fibre Communications, Cannes, France, September 2006
- Gu M, Tuning three-dimensional polymer-based photonic crystals, Photonics 2006, Hyderabad, India, December 2006 (Invited)
- Gu M, Serbin J, Superprism effects, negative refraction and radiation dynamics in three-dimensional polymer photonic crystals, ICO Topical Meeting on Optoinformatics/ Information Photonics, St Petersburg, Russia, September 2006
- Gu M, Zhou G, Femtosecond-laser writing of three-dimensional photonic crystals in polymer, Proc SPIE, 6400, Stockholm, Sweden, September 2006 (Invited)
- Ha S, Sukhorukov AA, Kivshar YS, Slow-light modes in Bragg grating couplers, Australian Institute of Physics 17th National Congress, Brisbane, Australia, December 2006
- Hoa XD, Nicrovici NA, McPhedran RC, Botten LC, Kirk AG, Rigorous Modal Method for the Analysis of Lamellar Metallic Gratings for Surface Plasmon Resonance Sensing, IEEE Lasers and Electrooptics (LEOS), Montreal, Quebec, November 2006
- Jarvis RA, Zoubir A, Gamaly E, Zha C, Rode AV, Luther-Davies B, Madden SJ, Wavelength dispersion of verdet constant in  $\text{Ge}_{33}\text{As}_{27}\text{Se}_{40}$ ,  $\text{Ge}_{33}\text{As}_{12}\text{Se}_{55}$  and  $\text{As}_2\text{S}_3$  chalcogenide thin films, ACOFT, Melbourne, Australia, July 2006
- Jia B, Gu M, Multiphoton-induced three-dimensional polymer photonic crystals, 1st International Workshop on Multiphoton Processes in Glass and Glassy Materials, Sydney, Australia, December 2006 (Invited)
- Jia B, Li J, Gu M, Direct mapping of dynamics of three-dimensional woodpile photonic crystals fabricated with two-photon polymerisation, Australian Institute of Physics 17th National Congress, Brisbane, Australia, December 2006
- Jia B, Li J, Gu M, Near-field characterization of three-dimensional woodpile photonic crystals fabricated with two-photon polymerization, 90th Annual Meeting of Optical Society of America, Rochester, USA, October 2006
- Johnston BF, Withford MJ, Topographical electrodes for poling lithium niobate, Pacific International Conference on Appl. Of Lasers and Optics, Melbourne, Australia, April 2006
- Kivshar Y, All-optical switching in photonic structures infiltrated with liquid crystals, Northern Optics 2006, Bergen, Norway, June 2006
- Kivshar Y, Localization of matter matter waves and light in optical lattices, International Seminar on Progress and Excitement in AMO Physics, Tokyo, Japan, January 2006 (Invited)
- Kivshar Y, Nonlinear optics and gap solitons in periodic photonic structures, Nonlinear Physics and Mathematics, Kiev, May 2006 (Invited)

- Kuhlmeij BT, Pathmanandavel K, McPhedran RC. Multipole Analysis of Photonic Crystal Fibers with Coated Inclusions, European Conference on Optical Communication 2006, Cannes, France, September 2006
- Lamont MRE, Rochette M, Moss DJ, Eggleton BJ. Influence of C-Band resonant structures on Self-Phase Modulation Based 2R Regeneration, ACOFT, Melbourne, Australia, July 2006
- Lee AL, Withford MJ, Dawes JM, Marshall GD. Fabrication of C-Band resonant structures in rib waveguides, Pacific International Conference on Appl. Of Lasers and Optics, Melbourne, Australia, April 2006
- Li J, Serbin J, Bullen C, Gu M. Incorporation of Quantum Dots into 3D Photonic Crystals for Emission Control International Conference on Nanoscience and Nanotechnology, Brisbane, Australia, July 2006
- Li J, Serbin J, Bullen C, Gu M. Infiltration of Quantum Dots into 3D Photonic Crystals Fabricated by the Two-photon Polymerisation, Australian Optical Society 2006 Conference, Melbourne, Australia, July 2006
- Little DJ, Marshall GD, Withford MJ. Fabrication of periodic, resonant features in optical fibres using a CO<sub>2</sub> laser micro-tapering system, Pacific International Conference on Appl. Of Lasers and Optics, Melbourne, Australia, April 2006
- Luther-Davies B. All-optical Processing for Advanced Communications Systems, SPIE Smart Materials, Micro- and Nano- Smart Systems, Adelaide, Australia 2006 (Invited)
- Luther-Davies B. Nonlinear materials and devices for optical communications systems, Conference on Lasers and Electrooptics (CLEO), Long Beach, CA, May 2006 (Invited)
- Luther-Davies B, Madden S, Choi D, Wang R, Rode A, Prasad A, Jarvis R, Moss D, Eggleton B, Grillet C, Lamont M, Magi E, Ta'eed V, Shookoh-Saremi M, Baker N, Littler I, Fu L, Rochette M, Ruan Y. Chalcogenide glasses for all-optical processing, IEEE International Conference on Photonics and Switching, Herakleion, Crete, Greece, October 2006 (Invited)
- Luther-Davies B, Moss D, Lamont MRE, Ta'eed V, Madden S, Eggleton BJ. All optical wavelength conversion via cross phase modulation in chalcogenide glass rib waveguides, IEEE International Conference on Photonics and Switching, Herakleion, Crete, Greece, October 2006
- Madden S, Choi D, Rode A, Luther-Davies B. Low Loss Etched Ge<sub>33</sub>As<sub>12</sub>Se<sub>55</sub> Chalcogenide Waveguides, ACOFT, Melbourne, Australia, July 2006
- Marshall GD, Ams M, Withford JA. Point by point femtosecond laser inscription of fibre and waveguide Bragg gratings for photonic device fabrication, Pacific International Conference on Applications Of Lasers and Optics, Melbourne, Australia, April 2006
- Marshall GD, Ams M, Withford MJ. Femtosecond inscription of wavelength specific features in passive and active optical waveguide structures, Photonics Europe, Strasbourg, France, April 2006
- Matthews A, Kivshar YS. Analysis of three-dimensional photonic crystals fabricated by the microexplosion method, Photonics Europe 2006, Strasbourg, France, April 2006
- Matthews A, Morrison S, Kivshar YS. Self-collimation and beam splitting in chalcogenide glass and photopolymer two-dimensional photonic crystals, COMPAD 2006, Perth, Australia, December 2006
- Matthews A, Zhou G, Gu M, Kivshar Y. Analysis of three-dimensional photonic crystal fabricated by the microexplosion method, Photonics Europe, Strasbourg, France, April 2006
- Miroshnichenko AE, Pinkevych I, Kivshar YS. All optical switching in photonic structures with liquid-crystal defects, CLEO/QELS 2006, Long Beach, CA, May 2006
- Miroshnichenko AE, Pinkevych I, Kivshar YS. Optical tunability of liquid-crystal defects in photonic structures, International Workshop on Liquid Crystals for Photonics, Gent, Belgium, April 2006
- Miroshnichenko AE, Pinkevych I, Kivshar YS. Tunable all-optical switching in photonic structures with liquid-crystal defects, The 21st International Liquid Crystal Conference, Keystone, Colorado, July 2006
- Mok JT, de Sterke CM, Littler IC, Eggleton BJ. Slow light in nonlinear fibre Bragg gratings, ACOFT, Melbourne, Australia, July 2006
- Mok JT, Tsou E, Littler IC, de Sterke CM, Eggleton BJ. Slow light in nonlinear fibre Bragg gratings, CLEO/QELS, Long Beach, CA, May 2006
- Monat C, Domachuk P, Grillet C, Eggleton BJ, Mutzenich S, Rosengarten G, Mitchell A. Integrated Tunable Microfluidic Interferometer, Conference on Lasers and Electro-Optics (CLEO), Long Beach, CA, May 2006
- Monat C, Domachuk P, Grillet C, Eggleton BJ, Mutzenich S, Rosengarten G, Mitchell A. Integrated Tunable Microfluidic Interferometer, ACOFT, Melbourne, Australia, July 2006
- Monat C, Domachuk P, Jaouen V, Grillet C, Littler I, Cronin-Golomb M, Eggleton BJ, Mutzenich S, Mahmud T, Rosengarten G, Mitchell A. Micron-scale tunability in photonic devices using microfluidics, Conference SPIE Optics and Photonics – Optofluidics, San Diego, USA, August 2006 (Invited)
- Moore ED, Steinvurzel P, Mägi EC, Eggleton BJ. Microbend Long Period Gratings in Fluid-Filled Photonic Bandgap Fiber, CLEO, Long Beach, CA, May 2006
- Morrison S, Kivshar YS. Nonlinear Surface Modes and Tamm States in Binary Photonic Crystals, ICOOPMA 2006, Darwin, Australia, July 2006
- Morrison S, Kivshar YS. Optical Tamm States in Photonic Crystals, ICONN 2006, Brisbane, Australia, July 2006
- Morrison S, Kivshar YS. Surface Gap Modes on Diatomic Photonic Crystals, ETOPIIM 7, Sydney, July 2006
- Moss DJ, Grillet C, Smith C, Eggleton BJ, Frederick S, Dalacu D, Poole PJ, Lapointe J, Aers G, Williams RL. Coupling via Tapered Nanowire Micro-Loops to Photonic Crystal Nanocavities for Single-Photon Source Applications, IEEE Lasers and Electro-Optics Society (LEOS) Annual Meeting, Montreal, Quebec, November 2006
- Moss DJ, Lamont M, Fu L, Rochette M, Eggleton BJ. 2R All-Optical Regeneration in Highly Nonlinear Singlemode As<sub>2</sub>Se<sub>3</sub> Fiber, European Conference on Optical Fibre Communications (ECOC), Cannes, France, September 2006
- Moss DJ, Lamont M, Fu LB, Rochette M, Eggleton BJ. 2R Regeneration in Singlemode As<sub>2</sub>Se<sub>3</sub> Fiber Characterized by FROG Analysis, IEEE / OSA Conference for Lasers and Electro-Optics (CLEO), Long Beach, CA, May 2006
- Moss DJ, Lamont MRE, Ta'eed VG, Madden S, Luther-Davies B, Eggleton BJ. All optical wavelength conversion via cross-phase modulation in chalcogenide glass rib waveguides, IEEE Lasers and Electro-Optics Society (LEOS) Annual Meeting, Montreal, Quebec, November 2006
- Moss DJ, Smith C, Grillet C, Freeman D, Magi E, Luther-Davies B, Madden S, Eggleton BJ. Evanescent probing of chalcogenide photonic crystal waveguides and nanocavities, IEEE Lasers and Electro-Optics Society (LEOS) Annual Meeting, Montreal, Quebec, November 2006
- Moss DJ, Ta'eed VG, Fu L, Pelusi M, Rochette M, Littler ICM, Eggleton BJ. Error-free Wavelength Conversion in Highly Nonlinear Singlemode As<sub>2</sub>Se<sub>3</sub> Fiber, European Conference on Optical Fibre Communications (ECOC), Cannes, France, September 2006
- Moss DJ, Ta'eed VG, Grillet C, Shookoh-Saremi M, Fu LB, Rochette M, Magi EC, Littler ICM, Eggleton BJ, Ruan Y, Freeman D, Madden S, Luther-Davies B. Photonic integrated circuits in chalcogenide glass for all-optical signal processing, Proceedings of SPIE – Optoelectronic Integrated Circuits VIII 2006
- Moss DJ, Ta'eed VG, Grillet C, Shookoh-Saremi M, Fu LB, Rochette M, Magi E, Littler ICM, Eggleton BJ, Ruan Y, Freeman D, Madden S, Luther-Davies B. Photonic Integrated Circuits in chalcogenide glass for all-optical signal processing, Photonics West, San Jose, CA, January 2006 (Invited)
- Myers S, Fussell D, Dawes J, de Sterke M, McPhedran R, Magi E, Eggleton B. Enhancement of emission due to local density of states (LDOS) effects in 2-D photonic crystal tapered optical fibre, Conference for Lasers and Electro-Optics (CLEO), Long Beach, CA, May 2006
- Neshev D. Optical lattices as nonlinear photonic crystals, School on Quantum Electronics, Sunny Beach, Bulgaria, September 2006 (Invited)
- Neshev D. Optical lattices as tunable nonlinear photonic crystals, International Conference on Micro to Nanophotonics, Romania, August 2006 (Invited)
- Neshev DN, Sukhorukov AA, Dreischuh A, Fischer R, Ha S, Rosberg CR, Krolkowski W, Bolger J, Eggleton BJ, Mitchell A, Austin MW, Kivshar YS. Spatio-Spectral Control of Supercontinuum Light, Frontiers in Optics, OSA, Rochester, New York, October 2006
- Nguyen HC, Finsterbusch K, Moss DJ, Eggleton BJ. Dispersion in the Nonlinear Figure of Merit of As<sub>2</sub>Se<sub>3</sub> Chalcogenide Fiber, ACOFT, Melbourne, Australia, July 2006
- Orbons S, Freeman D, Luther-Davies B, Gibson B, Huntington S, Jamieson D, Roberts A. Nanophotonic metamaterials, Australian Institute of Physics 17th National Congress, Brisbane, Australia, December 2006
- Orbons SM, Freeman D, Gibson BC, Huntington ST, Luther-Davies B, Jamieson DN, Roberts A. Optical Properties of Nanoscale Annular Array Metamaterials, Optics and Photonics, San Diego, August 2006



- Orbons SM, Freeman D, Luther-Davies B, Gibson BC, Huntington ST, Jamieson DN, Roberts A, Optical Properties of silver composite metamaterials, ETOPIIM 7, Sydney, Australia, July 2006
- Orbons SM, Freeman D, Luther-Davies B, Gibson BC, Huntington ST, Jamieson DN, Roberts A, Nanoscale annular array metamaterials, International Conference on Nanoscience and Nanotechnology, Brisbane, Australia, 2006
- Pathmanandavel K, Kuhlmeiy BT, McPhedran RC, Plasmonic resonances in photonic crystal fibres with coated inclusions, META conference: Photonic Metamaterials: From Random to Periodic, Grand Island, The Bahamas, June 2006
- Pathmanandavel K, Kuhlmeiy BT, McPhedran RC, Plasmonic resonances in photonic crystal fibres with coated inclusions, ETOPIIM7, International Conference on the Electrical, Transport and Optical Properties of Inhomogeneous Media, Sydney, Australia, July 2006
- Rosberg C, Neshev D, Krolikowski W, Vicencio RA, Molina MI, Kivshar YS, Surface Gap Solitons in  $\text{LiNbO}_3$  Waveguide arrays, Frontiers in Optics, OSA, Rochester, New York, October 2006
- Rosberg C, Neshev D, Sukhorukov AA, Krolikowski W, Kivshar YS, Discrete and gap solitons in triangular photonic lattices, Frontiers in Optics, OSA, Rochester, New York, October 2006
- Rosberg CR, Fischer R, Neshev DN, Sukhorukov AA, Krolikowski W, Photonic band gap structures in photorefractive crystals, ICOOPMA 2006, Darwin, Australia, July 2006
- Rosberg CR, Garanovich IL, Sukhorukov AA, Neshev DN, Krolikowski W, Kivshar YS, Demonstration of optically controlled beam steering in dynamic photonic lattices, CLEO/QELS 2006, Long Beach, CA, May 2006
- Rosberg CR, Matuszewski M, Neshev DN, Sukhorukov AA, Mitchell A, Trippenbach M, Austin MW, Discrete self-trapping vs. defocusing in nonlinear waveguide arrays, CLEO/QELS 2006, Long Beach, CA, May 2006
- Rosberg CR, Neshev DN, Krolikowski W, Mitchell A, Vicencio RA, Molina MI, Kivshar YS, Surface gap solitons at fabricated photonic lattice interfaces, ACOFT, Melbourne, Australia, July 2006
- Rosberg CR, Neshev DN, Krolikowski WZ, Kivshar YS, Mitchell A, Vicencio RA, Molina MI, Observation of surface gap solitons, CLEO/QELS 2006, Long Beach, CA, May 2006
- Serbin J, Gu M, Superprism phenomena and spontaneous emission dynamics in 3D photonic crystals fabricated by two-photon polymerisation, Second Pacific International Congress on Applications of Lasers and Optics, Melbourne, Australia, April 2006
- Smith C, Characterisation of Chalcogenide 2D Photonic Crystal Waveguides Using Silica Fibre Nanowires, ACOFT, Melbourne, Australia, July 2006
- Steinvurzel P, Kuhlmeiy BT, de Sterke CM, Eggleton BJ, Steel MJ, Single Scatterer Effects in Solid-core Photonic Crystal Fibres, European Conference on Optical Communication 2006, Cannes, France, September 2006
- Steinvurzel P, Moore ED, Mägi EC, Eggleton BJ, Tunable long period gratings in fluid-filled photonic bandgap fiber, LEOS Summer Topical Meeting, Québec City, Canada, July 2006
- Steinvurzel P, Moore ED, Mägi EC, Eggleton BJ, Tunable Long Period Gratings in Photonic Bandgap Fiber, ACOFT, Melbourne, Australia, July 2006
- Stewart L, Marshall GD, Dawes JM, Withford MJ, Fabricating opals to control the flow of light, Australian Institute of Physics 17th National Congress, Brisbane, Australia, December 2006
- Sukhorukov AA, Johansson M, Kivshar YS, Reduced-symmetry Solitons in Square and Triangular Photonic Lattices, SIAM Conference on Nonlinear Waves, Seattle, USA, September 2006
- Sukhorukov AA, Kivshar YS, Slow light bullets in arrays of nonlinear Bragg-grating waveguides, CLEO/QELS 2006, Long Beach, CA, May 2006 (poster)
- Sukhorukov AA, Kivshar YS, Slow-light diffraction management and optical bullets in nonlinear Bragg-grating waveguide arrays, XII Conference on Laser Optics, St Petersburg, Russia, June 2006 (Invited)
- Sukhorukov AA, Kivshar YS, Spatiotemporal control of slow light in nonlinear Bragg-grating waveguide arrays, Australian Institute of Physics 17th National Congress, Brisbane, Australia, December 2006
- Sukhorukov AA, Motzek K, Garanovich IL, Kivshar YS, Polychromatic discrete solitons in nonlinear photonic lattices, Dynamic Days Europe, Crete, Greece, September 2006
- Sukhorukov AA, Motzek K, Garanovich IL, Kivshar YS, Shaping and controlling polychromatic beams in nonlinear photonic structures, XII Conference on Laser Optics, St Petersburg, Russia, June 2006
- Ta'eed VG, Fu L, Pelusi M, Rochette M, Littler ICM, Moss DJ, Eggleton BJ, Error Free Wavelength Conversion in  $\text{As}_2\text{Se}_3$  Singlemode Chalcogenide Fiber, ACOFT, Melbourne, Australia, July 2006
- Ta'eed VG, Fu L, Pelusi M, Rochette M, Littler ICM, Moss DJ, Eggleton BJ, Wavelength Conversion in Highly Nonlinear Single Mode  $\text{As}_2\text{Se}_3$  Chalcogenide Fiber, IEEE Laser and Electro-Optics Society (LEOS) Summer Topical on Fibers for Lasers, Amplifiers and Nonlinear Devices, Québec City, Canada, July 2006
- Ta'eed VG, Fu L, Rochette M, Littler ICM, Moss DJ, Eggleton BJ, XPM Wavelength Conversion in Highly Nonlinear Singlemode  $\text{As}_2\text{Se}_3$  Fiber, Conference on Lasers and Electro-Optics (CLEO), Long Beach, CA, May 2006
- Tomljenovic-Hanic S, de Sterke CM, Eggleton BJ, Freeman D, Grillet C, Luther-Davies B, Madden S, Mägi EC, McPhedran R, Moss DJ, Smith C, Steel MJ, Design, fabrication and characterisation of chalcogenide-based photonic crystal slabs, IEEE LEOS 8th International Conference on Transparent Optical Networks, Nottingham, UK, June 2006 (Invited)
- Tomljenovic-Hanic S, Steel MJ, de Sterke CM, Design of diamond-based photonic crystal microcavities, ETOPIIM 7, Sydney, Australia, July 2006
- Tomljenovic-Hanic S, Steel MJ, de Sterke CM, High-Q Photonic Crystal Microcavities in Diamond, Progress in Electromagnetics Research Symposium (PIERS), Cambridge, Massachusetts, USA, 2006 (Invited)
- Tomljenovic-Hanic S, Steel MJ, de Sterke CM, Moss DJ, Novel hetero-structures formed by refractive index variations in chalcogenide-based photonic crystal slabs, IEEE LEOS Annual, Montreal, Canada, November 2006
- Tomljenovic-Hanic S, Steel MJ, de Sterke CM, Moss DJ, Photonic crystal slab hetero-structures formed by refractive index variations in chalcogenide glasses, ACOFT, Melbourne, Australia, July 2006
- Tsoy EN, Analysis of the dissipative localized waves in optical media with nonlinear gain, 12th Conference on Laser Optics, St Petersburg, Russia, June 2006 (poster)
- Tsoy EN, de Sterke CM, Influence of higher order dispersion on soliton dynamics, Australian Institute of Physics 17th National Congress, Brisbane, Australia, December 2006 (poster)
- Tsoy EN, de Sterke CM, Suppression of Raman shift in fibres near zero-dispersion point, ACOFT, Melbourne, Australia, July 2006 (poster)
- Ventura MJ, Bullen C, Gu M, Modification of the radiation dynamics of PbSe quantum dots embedded in three-dimensional photonic crystals, Second Pacific International Congress on Applications of Lasers and Optics, Melbourne, Australia, April 2006
- Ventura MJ, Bullen C, Gu M, Radiation dynamics of PbSe quantum dots embedded in three-dimensional photonic crystals, Photonics Europe, Strasbourg, France, April 2006
- Wang RP, Zha C, Choi D, Luther-Davies B, Madden S, Rode A, Impact of Annealing Temperature on  $\text{As}_2\text{S}_3$  Films Produced by Ultra Fast Pulsed Laser Deposition, Glass and Optical Materials Annual Meeting, Greenville, SC, 2006
- Wang RP, Zha CJ, Rode AV, Madden SJ, Luther-Davies B, Thermal characterisation of Ge-As-Se glasses by the differential scanning calorimetry, International Conference on Optical, Optoelectronic and Electro-Optic Properties of Materials and Applications, Darwin, Australia, July 2006
- Zha CJ, Luther-Davies B, Wang RP, Smith A, Prasad A, Jarvis RA, Madden S, Rode A, Optical Characterization of Ge-As-Se Glasses Containing High Content of Germanium, ACOFT, Melbourne, Australia, July 2006
- Zhou G, Gu M, 3D photonic crystals fabrication in lithium niobate: towards nonlinearity and functionality, 90th Annual Meeting of Optical Society of America, Rochester, USA, October 2006
- Zhou G, Gu M, Adaptive compensation of spherical aberration and 3D photonic crystal fabrication in a high refractive index lithium niobate crystal, 2006 International Conference on Confocal Microscopy, Perth, Australia, April 2006
- Zhou G, Gu M, Void generation and three-dimensional photonic crystal fabrication in a lithium niobate crystal by use of micro-explosion, Second Pacific International Congress on Applications of Lasers and Optics, Melbourne, Australia, April 2006
- Sheik-Bahae M, Hutchins D, Hagan D, Van Stryland E, Dispersion of Bound Electronic Nonlinear Refraction in Solids, IEEE JOURNAL OF QUANTUM ELECTRONICS 27, 1296 (2001) Inorganic Polymer Glass is a trade mark of RPO Pty Ltd



---

**The Centre for Ultrahigh bandwidth Devices for Optical Systems (CUDOS)**  
**An Australian Research Council Centre of Excellence**

**Sydney Laboratory and Headquarters**

Professor Ben Eggleton, Research Director  
Phone: (02) 9351 3604 (+612 9351 3604)  
Dr Chris Walsh, Chief Operations Officer  
Phone (02) 9351 5897 (+612 9351 5897)  
School of Physics, A28  
University of Sydney NSW 2006 Australia  
Fax: (02) 9531 7726  
Email: [cudos@physics.usyd.edu.au](mailto:cudos@physics.usyd.edu.au)  
Web: [www.cudos.org.au](http://www.cudos.org.au)

**CUDOS@ANU**

Ms Wendy Quinn  
Director's Unit  
Research School of Physical Sciences and Engineering  
The Australian National University  
ACT 0200 Australia  
Phone: (02) 6125 3423

**CUDOS@Macquarie**

Dr Michael Withford  
Department of Physics  
Division of Information and Communication Sciences  
Macquarie University  
NSW 2109 Australia  
Phone: (02) 9850 7056

Ms Kali Madden  
Phone: 9850 8931

**CUDOS@Swinburne**

Professor Min Gu  
Centre for Micro-Photonics  
Swinburne University of Technology  
PO Box 218, Hawthorn  
VIC 3122 Australia  
Phone: (03) 9214 8776

**CUDOS@UTS**

Professor Lindsay Botten  
Department of Mathematical Sciences  
University of Technology Sydney  
PO Box 123  
Broadway NSW 2007 Australia  
Phone: (02) 9514 2247