

Publications

1. J. Barrio, J. Lamela, A. Rodenas, G. Zhou, G. Lifante, F. Jaque, D. Jaque, and M. Gu, "Near-field local enhancement by ordered arrays of sub-wavelength scattering centers fabricated by femtosecond ablation," *Appl Phys B-Lasers* 103, 51-55 (2011).
2. A. C. Bedoya, C. Monat, P. Domachuk, C. Grillet, and B. J. Eggleton, "Measuring the dispersive properties of liquids using a microinterferometer," *Appl Optics* 50, 2408-2412 (2011).
3. D. Buso, A. J. Hill, T. Colson, H. J. Whitfield, A. Patelli, P. Scopece, C. M. Doherty, and P. Falcaro, "Complete Characterization of alpha-Hopeite Microparticles: An Ideal Nucleation Seed for Metal Organic Frameworks," *Cryst Growth Des* 11, 5268-5274 (2011).
4. Y. Y. Cao, Z. S. Gan, B. H. Jia, R. A. Evans, and M. Gu, "High-photosensitive resin for super-resolution direct-laser-writing based on photoinhibited polymerization," *Opt Express* 19, 19486-19494 (2011).
5. A. V. Chebykin, A. A. Orlov, A. V. Vozianova, S. I. Maslovski, Y. S. Kivshar, and P. A. Belov, "Nonlocal effective medium model for multilayered metal-dielectric metamaterials," *Phys Rev B* 84(2011).
6. J. B. Chen, Y. Wang, B. H. Jia, T. Geng, X. P. Li, L. Feng, W. Qian, B. M. Liang, X. X. Zhang, M. Gu, and S. L. Zhuang, "Observation of the inverse Doppler effect in negative-index materials at optical frequencies," *Nat Photonics* 5, 239-242 (2011).
7. P. Y. Chen, C. G. Poulton, A. A. Asatryan, M. J. Steel, L. C. Botten, C. M. de Sterke, and R. C. McPhedran, "Folded bands in metamaterial photonic crystals," *New J Phys* 13(2011).
8. B. Corcoran, M. D. Pelusi, C. Monat, J. T. Li, L. O'Faolain, T. F. Krauss, and B. J. Eggleton, "Ultracompact 160 Gbaud all-optical demultiplexing exploiting slow light in an engineered silicon photonic crystal waveguide," *Opt Lett* 36, 1728-1730 (2011).
9. B. P. Cumming, A. Jesacher, M. J. Booth, T. Wilson, and M. Gu, "Adaptive aberration compensation for three-dimensional micro-fabrication of photonic crystals in lithium niobate," *Opt Express* 19, 9419-9425 (2011).
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11. S. A. Dekker, A. C. Judge, R. Pant, I. Gris-Sanchez, J. C. Knight, C. M. de Sterke, and B. J. Eggleton, "Highly-efficient, octave spanning soliton self-frequency shift using a specialized photonic crystal fiber with low OH loss," *Opt Express* 19, 17766-17773 (2011).
12. B. J. Eggleton, B. Luther-Davies, and K. Richardson, "Chalcogenide photonics," *Nat Photonics* 5, 141-148 (2011).
13. X. Gai, D. Y. Choi, S. Madden, and B. Luther-Davies, "Interplay between Raman scattering and four-wave mixing in As₂S₃ chalcogenide glass waveguides," *J Opt Soc Am B* 28, 2777-2784 (2011).
14. R. Goto, R. J. Williams, N. Jovanovic, G. D. Marshall, M. J. Withford, and S. D. Jackson, "Linearly polarized fiber laser using a point-by-point Bragg grating in a single-polarization photonic bandgap fiber," *Opt Lett* 36, 1872-1874 (2011).
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17. S. Ha, M. Spasenovic, A. A. Sukhorukov, T. P. White, C. M. de Sterke, L. K. Kuipers, T. F. Krauss, and Y. S. Kivshar, "Slow-light and evanescent modes at interfaces in photonic crystal waveguides: optimal extraction from experimental near-field measurements," *J Opt Soc Am B* 28, 955-963 (2011).
18. T. Han, S. Madden, S. Debarma, and B. Luther-Davies, "Improved method for hot embossing As₂S₃ waveguides employing a thermally stable chalcogenide coating," *Opt Express* 19, 25447-25453 (2011).
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24. D. D. Hudson, S. A. Dekker, E. C. Magi, A. C. Judge, S. D. Jackson, E. B. Li, J. S. Sanghera, L. B. Shaw, I. D. Aggarwal, and B. J. Eggleton, "Octave spanning supercontinuum in an As₂S₃ taper using ultralow pump pulse energy," *Opt Lett* 36, 1122-1124 (2011).
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26. I. Iorsh, A. Orlov, P. Belov, and Y. Kivshar, "Interface modes in nanostructured metal-dielectric metamaterials," *Appl Phys Lett* 99(2011).
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75. E. D. Gaspera, D. Buso, and A. Martucci, "Gold nanoparticles to boost the gas sensing performance of porous sol-gel thin films," *Journal of Sol-Gel Science and Technology* **60**, 366-377 (2011).
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77. D. Buso, K. M. Nairn, M. Gimona, A. J. Hill, and P. Falcaro, "Fast synthesis of MOF-5 microcrystals using sol-gel SiO2 nanoparticles," *Chemistry of Materials* **23**, 929-934 (2011).

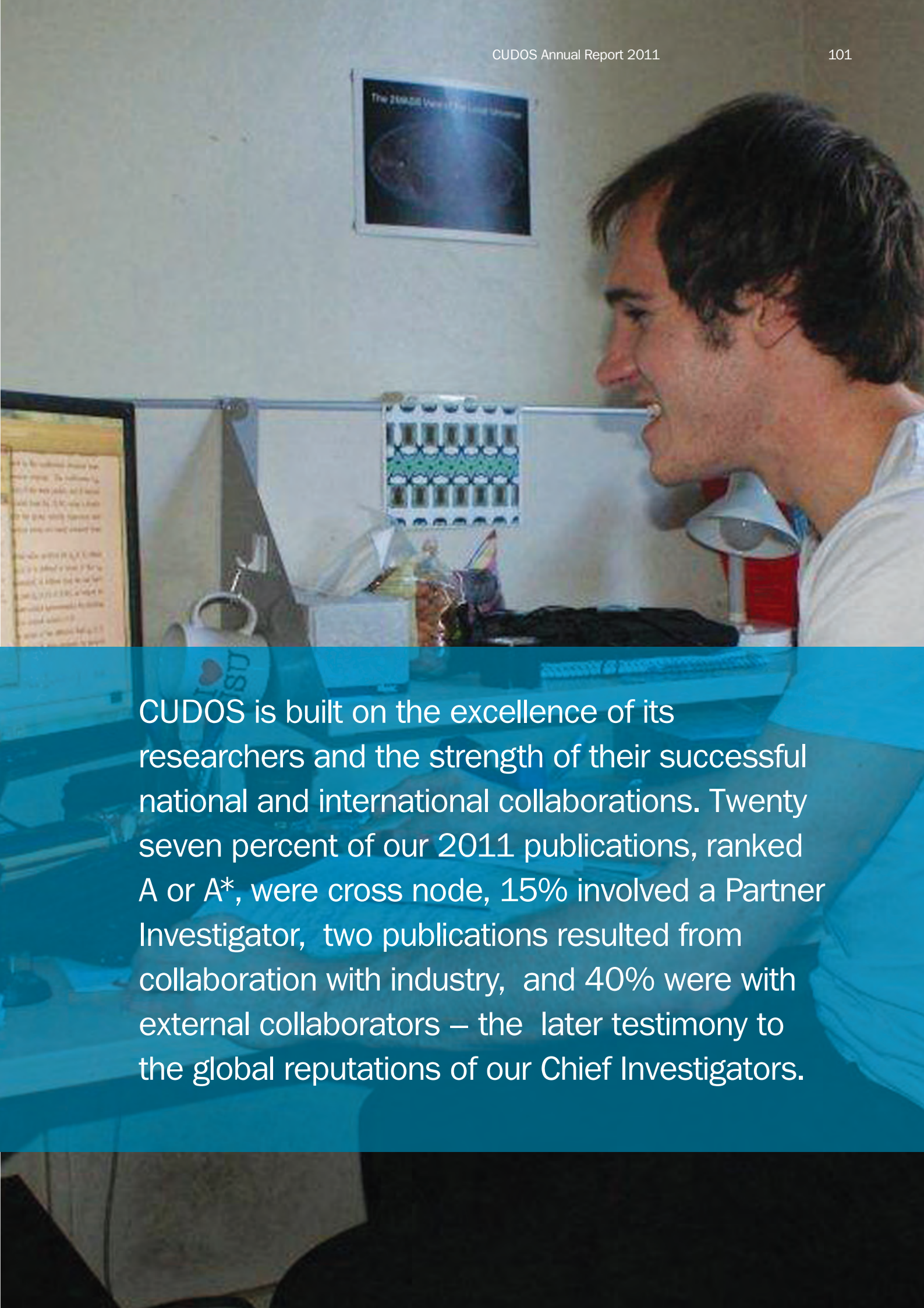
Invited Talks & Presentations

Duk-Yong Choi	Invited Speaker: D.-Y. Choi, <i>Chalcogenide thin film waveguides for all-optical signal processors</i> , International Conference on Advanced in Condensed and Nanomaterials (ICACNM-2011), Chandigarh, India, 23-26 February 2011.
Carel Martijn de Sterke	Invited Speaker: C. M. de Sterke, <i>Why Evanescent Modes Matter</i> , 8th International Symposium on Modern Optics and Its Applications (ISMOA 2011), Bandung, Indonesia, 4-7 July 2011.
Kokou Dossou	Invited Speaker: K. Dossou, <i>Novel modeling techniques for photonic devices</i> , NUSOD 2011, Rome, Italy, 5-8 September 2011.
Benjamin J. Eggleton	Tutorial Presentation: B. J. Eggleton, <i>Nonlinear optics for signal processing in high-speed optical communications systems</i> , 16th Opto-Electronics and Communications Conference (OECC Taiwan 2011), Kaohsiung, Taiwan, 4-8 July 2011.
	Plenary Presentation: B. J. Eggleton, <i>Ultrafast nonlinear optics on a chip</i> , International Photonics Conference, Chengdu, China, July 2011.
	Invited Speaker: B. J. Eggleton, <i>Photonic circuits for the new information age: Fast, smaller and smarter</i> , International Applied Photonics Technology Conference, Miaoli City, Taiwan Workshop in Maoli, July 2011.
	Plenary Speaker: B. J. Eggleton, <i>Slow light enhanced nonlinear optics in periodic structures</i> , 2011 Advanced Photonics: OSA Optics & Photonics Congress (Slow and Fast Light), Toronto, Canada, 12-15 June 2011.
	Invited Speaker: B. J. Eggleton, <i>Chalcogenide nanophotonics</i> , The Fifth International Conference on Nanophotonics, Shanghai, China, 22-26 May 2011.
	Invited Lecturer: B. J. Eggleton, <i>Nonlinear optics in emerging structures</i> , short course, 6th International Summer School – New Frontiers in Optical Technologies, Tampere, Finland, 8-12 August 2011.
A. Fuerbach (presented by Nem Jevanovic)	Invited Paper (paper 5660-CT-4, pp. 1159-1161): A. Fuerbach, S. Gross, C. Miese, G. Palmer, N. Jovanovic, W. Koehler, T. Ganz, D. Lancaster, T. Monro, M. Withford, <i>Femtosecond Chirped Pulse Oscillators for High-Speed Photonic Device Fabrication</i> , Proceedings of Conference on Lasers and Electro-Optics Pacific Rim, Sydney, Australia, September 2011.
	Invited Paper (8095-51): M. Gu and M. Turner, <i>Fabrication of three-dimensional gyroid photonic microstructures</i> , Optical and Photonics Conference: Active Photonic Crystals VI, San Diego, USA, 21-25 August 2011.
Min Gu	Plenary Speaker: M. Gu, <i>Nanophotonics under an optical microscope</i> , 5th International Conference on Nanophotonics (ICNP), Shanghai, China, 22-26 May 2011.
	Plenary Speaker: M. Gu, 18th Conference on Optoelectronics and Optical Communications, KyengJu, Korea, 25-27 May, 2011
	Keynote Speaker: M. Gu, <i>Superresolution fibre-optical nonlinear optical endoscopy: toward in vivo cancer-cell treatment</i> , 7th International Symposium on Precision Engineering Measurement and Instrumentation (ISPEMI2011), Lijiang, Yunnan, China, 7-11 August 2011.
	Invited Paper (8095-51): M. Gu and M. Turner, <i>Fabrication of three-dimensional gyroid photonic microstructures</i> , Optical and Photonics Conference: Active Photonic Crystals VI, San Diego, USA, 21-25 August 2011.
	Invited Speaker: M. Gu, <i>Super-resolution nanolithography in photoreduction polymers</i> , International Conference on Quantum Electronics / The 9th Pacific Rim Conference on Lasers and Electro-Optics (IQEC/CLEO-PR2011), Sydney, Australia, 28 August – 1 September 2011.
	Keynote Speaker: M. Gu, <i>Nanophotonics - enabled multi-dimensional optical data storage</i> , 1st Forum on Trends in Nano-manufacturing, Hefei, China. (Keynote)
	Invited Speaker: M. Gu, <i>Technology Development for Multiphoton Endoscopy: Superresolution</i> , Frontiers in Optics (FiO) 2011 / Laser Science (LS) XXVII, San Jose, USA, 16-20 October 2011.
Plenary Speaker: M. Gu. The 4th International Photonics and OptoElectronics Meetings (POEM 2011), Wuhan, China, 2-5 November 2011.	

Kirsty Hannam	Invited Speaker: K. Hannam, <i>Turning Linear and Nonlinear Properties of Split Ring Resonators</i> , IQEC/CLEO Pacific Rim, Sydney, Australia, 28 August – 1 September 2011.
Chad Husko	Invited Speaker: C. Husko, <i>Energy consumption for all-optical processing in slow-light optical devices: Challenges and Opportunities</i> , Institute of Photonics and Optical Science (IPOS) Symposium, Sydney, Australia, 7 December 2011.
Stuart D. Jackson	Invited Paper (Paper 7914-21): S. D. Jackson, <i>Tm-doped silicate glass fibre lasers: the foundation technology for high-power mid-infrared light generation</i> , SPIE Proceedings Vol. 7914 Fiber Lasers VIII: Technology, Systems, and Applications, Jay W. Dawson, Editors, 79140M, San Jose, USA, 25 January 2011.
Yuri Kivshar	Plenary Talk: Y. S. Kivshar, <i>Shaping of light in metamaterial and plasmonic structures</i> , Annual International Conference Days on Diffraction 2011, Saint Petersburg, Russia, 30 May – 3 June 2011.
	Invited Speaker: Y. S. Kivshar, <i>Nanofocusing and shaping of plasmon beams</i> , The 5th International Conference on Surface Plasmon Photonics (SPP5), Busan, Korea, 15-20 May 2011.
	Keynote Speaker: Y. S. Kivshar, <i>Effect of Nonlinearity on Wave Scattering and Localization</i> , WavePro International Symposium, Crete, Greece, 8-11 June 2011.
	Invited Speaker: Y. S. Kivshar, Nanoplasmonics Session, International Conference on Materials for Advanced Technologies (ICMAT 2011), Singapore, 26 June – 1 July 2011.
	Keynote Speaker: Y. S. Kivshar, <i>Recent Advances in Nonlinear Photonics and Plasmonics</i> , 11th International Conference on Laser and Fiber-Optical Networks Modeling (LFNM 2011), Kharkov, Ukraine, 5-8 September 2011.
	Invited Speaker: Y. S. Kivshar, <i>Shaping light in metamaterials and plasmonic structures</i> , Metamaterials 2011: The Fifth International Congress on Advanced Electromagnetic Materials in Microwaves and Optics, Barcelona, Spain, 10-15 October 2011.
Boris T. Kuhlmeiy	Keynote Speaker: B. T. Kuhlmeiy, <i>Drawn metamaterial fibres</i> , Ringberg workshop of Prof. Russell's group of the Max Planck Institute for the Science of Light, Ringberg, Germany, 1-4 June 2011.
	Invited Speaker: B. T. Kuhlmeiy, A. Tuniz, S. Fleming, A. Argyros, A. Wang, M. Large, R. Lwin, <i>Drawn metamaterial fibres</i> , Metamaterials 2011: The Fifth International Congress on Advanced Electromagnetic Materials in Microwaves and Optics, Barcelona, Spain, 10-15 October 2011
Arthur Lowery	Invited Panel Member: A. Lowery, <i>Workshop 1: Modulation formats and signal processing techniques to approach the Shannon limit</i> , IQEC / CLEO Pacific Rim, Sydney, Australia, 28 August – 1 September 2011.
Barry Luther-Davies	Invited Speaker: B. Luther-Davies, <i>Highly nonlinear chalcogenide glass waveguides for all-optical signal processing</i> , OSA Nonlinear Optics Topical Meeting (NLO), Kauai, Hawaii, USA, 17-22 July 2011.
Ross McPhedran	Invited Talk: R. McPhedran, J. Helsing, and G. W. Milton, <i>Metamaterial Composites and Superresolution</i> , Metamaterials 2011: The Fifth International Congress on Advanced Electromagnetic Materials in Microwaves and Optics, Barcelona, Spain, 10-15 October 2011.

Invited Talks & Presentations Continued

David J. Moss	Invited Speaker: D. J. Moss, <i>Nonlinear optics in CMOS compatible integrated silica glass devices</i> , Conference on Lasers and Electro-Optics – European Quantum Electronics Conference (CLEO / EUROPE – EQEC 2011), Munich, Germany, 22-26 May 2011.
	Invited Speaker: D. J. Moss, <i>Integrated laser sources in CMOS compatible integrated silica glass</i> , International Topical Meeting on Information Photonics (ICO), Ottawa, Canada, 18-20 May 2011.
	Invited Paper / Speaker (Paper 7942-04): D. J. Moss, <i>CMOS compatible waveguides for all-optical signal processing</i> , SPIE Photonics West, San Francisco, USA, 22-27 January 2011.
	Conference Paper (Paper OThU1 A. Pasquazi, M. Peccianti, B. E. Little, R. Morandotti, J. Azana and D. J. Moss, <i>SPIDER on a chip: a complex ultrafast oscilloscope</i> , IEEE/OSA Conference on Optical Fiber Communications (OFC), Los Angeles, USA, 6-10 March 2011.
	Invited Speaker: B. Corcoran, C. Monat, T. F. Krauss, D. J. Moss, B. J. Eggleton, <i>Slow light enhanced nonlinear optics for signal processing</i> , Conference on Lasers and Electro-Optics – European Quantum Electronics Conference (CLEO / EUROPE – EQEC 2011), Munich, Germany, 22-26 May 2011.
Dragomir N. Neshev	Invited Speaker: D. N. Neshev, <i>Light control in plasmonic structures and metamaterials</i> , IQEC/CLEO Pacific Rim, Sydney, Australia, 28 August – 1 September 2011.
	Invited Speaker: D. N. Neshev, <i>Nondiffracting surface plasmon beams: steering plasmons on a chip</i> , 8th Asia-Pacific Workshop on Near-field Optics, Nanophotonics & Related Techniques (APNFO Workshop), Adelaide, Australia, 25-26 August 2011.
	Invited Speaker: D. N. Neshev, <i>Moulding light in plasmonic and metamaterial structures</i> , Integrated Photonics Research, Silicon and Nano Photonics (IPR), Toronto, Canada, 12-15 June 2011.
	Invited Speaker: D. N. Neshev, <i>Controlling light in plasmonic and metamaterials structures</i> , Australia-Germany international workshop, Australian National University, Canberra, Australia, 31 March – 1 April 2011.
Yvan Paquot	Invited Speaker: Y. Paquot, J. Schröder, J. Van Erps, T. D. Vo, M. D. Pelusi, B. J. Eggleton, S. Madden, D.-Y. Choi, D. A. Bulla, B. Luther-Davies, <i>Automatic higher-order dispersion measurement and compensation of a 1.28 Tbaud signal</i> , CLEO:2011, Baltimore, USA, 6 May 2011.
Mark D. Pelusi	Invited Speaker: M. D. Pelusi, <i>Optical Processing for Performance Monitoring</i> , Optical Fiber Communication Conference (OFC), Los Angeles, USA, 6 March 2011.
Jochen Schröder	Invited Speaker: J. Schröder, <i>A Wavelength Selective Switch delay line interferometer for optical performance monitoring</i> , International Conference on Information Photonics & Optical Communications (IPOC), Singapore, October 2011.
Rongping Wang	Invited Speaker: R. Wang, <i>Microstructure of Ge-As-Se glasses</i> , 7th IUPAC International Conference on Novel Materials and their Synthesis (NMS-VII), Shanghai, China, 16-21 October 2011.
	Invited Speaker: R. Wang, <i>Searching the stable phase in GeAsSe ternary glasses</i> , 2011 ICG (International Congress on Glass) Annual Meeting & 1st Hi-Tech International Forum on Glass, Shenzhen, China, 30 March – 2 April 2011.
	Invited Speaker: R. Wang, <i>Transition Thresholds in GexAsySe1-x-y Glasses</i> , International Conference on Recent Advances in Condensed & Nano Materials (ICACNM-2011), Chandigarh, India, 23-26 February 2011.
Michael J Withford (presented by Nem Jovanovic)	Invited Speaker: M. J. Withford, <i>Ultrafast laser direct-write inscription of monolithic fibre and waveguide lasers</i> , Conference on Lasers and Electro-Optics – European Quantum Electronics Conference (CLEO / EUROPE – EQEC 2011), Munich, Germany, 22-26 May 2011.
	Invited Speaker: M. J. Withford, <i>Ultrafast laser written integrated microphotonics: the challenges and pitfalls</i> , International Symposium on Optomechatronic Technologies (ISOT 2011), Hong Kong, China, 1-3 November 2011.
	Invited Paper Publication (Optical Materials Express, Vol. 1 (4), pp. 670-677): D. J. Little, M. Arms and M. J. Withford, <i>Influence of Bandgap and Polarization on Photo-ionization: Guidelines for Ultrafast Laser Inscription</i> , 2011.



CUDOS is built on the excellence of its researchers and the strength of their successful national and international collaborations. Twenty seven percent of our 2011 publications, ranked A or A*, were cross node, 15% involved a Partner Investigator, two publications resulted from collaboration with industry, and 40% were with external collaborators – the later testimony to the global reputations of our Chief Investigators.