

Shane M. Eaton, Ph.D.

SUMMARY

- Ten years of photonics research and design experience, including one in industry
- Seven years of teaching assistantship and guest lecturing experience at university
- Mentored several undergraduate and graduate students in Toronto and Milan
- Citizenship: Canada, USA; Languages: fluent English, conversational Italian, basic French

EDUCATION

- University of Toronto, Toronto, ON, Canada*
Ph.D. in Department of Electrical Engineering (Photonics group) **2008**
Ph.D. thesis: "Contrasts in thermal diffusion and heat accumulation effects in the fabrication of waveguides in glasses using variable repetition rate femtosecond laser," supervised by Professor Peter R. Herman
Distinctions: GPA of 4.0/4.0, awarded best Ph.D. thesis in department
- University of British Columbia, Vancouver, BC, Canada*
B.A.Sc. in Engineering Physics (Electrical Engineering option) **2002**
Honors thesis: "Design of Optical Power Measurement Circuit"
Distinctions: Class 1 standing, Dean's honour list

RESEARCH EXPERIENCE

- Institute for Photonics and Nanotechnology (IFN) - CNR, Dept. of Physics, Politecnico di Milano, Italy* **2008-present**
- Research Associate** – Supervisors Prof. R. Osellame and Prof G. Cerullo
- Cariplo project on two-photon polymerization (2PP)
 - 2PP of 3D scaffolds for studying cell behavior in tissue engineering, micro-nano particle filtering in microfluidics, and liquid crystal defects for bistable *e-paper* displays
 - European project MicroFLUID
 - Applied femtosecond lasers to inscribe microfluidic channels and waveguides in polymers for lab-on-a-chip
 - Expertise in device characterization technique
 - Waveguide propagation and coupling loss, near-field mode profile, refracted near field profilometry, and microscopy.
- Dept. of Electrical Engineering, University of Toronto, ON, Canada* **2002-2008**
- Research Assistant and PhD student** – Supervisor Prof. P. R. Herman
- Setup ultrafast laser processing lab
 - Purchased and installed femtosecond (fs) fiber laser, optical table, beam delivery optics, motion stages, autocorrelator, acousto-optic modulator and beam profiler.
 - Skilled in photonic device design fabrication and characterization
 - Fabricated fs-laser written optical waveguides, directional couplers, and Bragg-grating waveguides supported by Rsoft BeamPROP and Lumerical MODE software design.

Nortel Networks, Ottawa, ON, Canada

Advanced Laser Design – Supervisors Dr. G. Pakulski and K. White

1999, 2001

- Used computer simulation software (Lastip and Las2d) to improve the design of semiconductor laser diodes
- Assembled a new test station and wrote a program for measuring the relative intensity noise, output power versus current/voltage and chirp of common platform laser diodes.

TRIUMF, Vancouver, BC, Canada

TRIUMF Neutral Atom Trap – Supervisor Dr. J. Behr

2000

- Built a reference cell for use in magneto-optic trap and aligned optics to perform saturation spectroscopy experiments to determine optimum parameters for optical pumping of Potassium-41.

Ballard Power Systems, Vancouver, BC, Canada

Mechanical Engineer – Supervisor D. Sokoloski

1998

- Worked with a project team assembling a fuel cell engine and designed and tested a custom valve for use in the fuel cell engine.

TEACHING AND OTHER EXPERIENCE

External Reviewer of PhD theses

- "Microstructure of transparent dielectrics with femtosecond pulses in the high repetition rate regime," Christopher T. Miese, Macquarie University, Australia (2012)

Dept. of Physics, Politecnico di Milano, Milan, Italy

Mentoring and training of graduate students

2008 – present

- Supervised 5th year masters students Veronica Aprile (Biomedical Engineering), Jose Pinazo (Chemistry) Eleon Borlini, Stefano Rampini and doctoral student Michele Nava (Structural Engineering) for their graduate projects on femtosecond nanofabrication of polymers, leading to successfully defended theses and several papers
- Supervised 3rd year undergraduate students Giorgio Nava and Iacopo Tempa on femtosecond laser micromachining projects

Dept. of Electrical Engineering, University of Toronto, Toronto, ON, Canada

Mentoring and training of graduate students

2005 – 2008

- Mentored undergraduate students Wei-Jen Chen and Laura Zhang on an undergraduate thesis project that led to world record performance for a laser-made optical directional coupler and a Photonics Technology Letters paper.
- Supervised MSc student Wei-Jen Chen leading to several conference papers, an Opt. Express paper and the MSc thesis entitled "Femtosecond laser direct writing of optical directional couplers inside bulk glass."
- Trained new MSc and PhD students who built their thesis around the femtosecond laser processing facility.

- Dept. of Electrical Engineering, University of Toronto, Toronto, ON, Canada*
Teaching Assistant, Lab Instructor and Lecturer **2002 – 2007**
- Lab and tutorial TA: electromag. (ECE 115), optics (ECE 318), semiconductor physics (ECE 330), semiconductor devices (ECE 335), optical comm. (ECE 425); guest lectured ECE 315 and 330
- Dept. of Electrical Engineering, University of Toronto, Toronto, ON, Canada*
Mentor for undergraduate thesis project **2005 –2006**
- Mentored 4th year electrical engineering students for their project entitled "3D Ultrafast Laser Writing: Interferometer Optical Circuit in Glass", leading to the \$10,000-cash Aloha prize for best undergraduate project with commercial potential amongst 300 students.
- Dept. of Electrical Engineering, University of Toronto, Toronto, ON, Canada*
Da-Vinci Engineering Enrichment Program Course Instructor **2003**
- Organized and delivered lectures and laboratory demonstrations for week-long course to teach high school students about photonics.
- Dept. of Physics and Dept. of Mathematics, University of British Columbia*
Teaching Assistant and Lab Instructor **2000-2002**
- Instructed tutorials and labs in introductory physics (PHYS 153)
 - Tutored students at Math/Statistics drop-in center in all undergrad math subjects
 - Graded exams, labs and assignments in multivariable calculus (MATH 200), partial differential equations (MATH 257)

RECENT AWARDS

- NSERC Postdoctoral fellowship (\$40,000/year), 2009-2011
- SPIE Scholarship in Optical Science and Engineering (\$2,000), 2007
- NSERC Post Graduate Scholarship (\$21,000/year), 2005-2007
- NCE-CIPI Germany-Canada student travel grant (\$2,000), 2007
- CIPI-PRO travel award to attend LASER 2005 (\$2,000), 2005
- Walter C. Sumner Memorial Fellowship (\$6,000/year), 2005-2006
- IEEE Explore Your Science Travel Grant to attend CLEO conference (\$1,400), 2004
- Ontario Graduate Scholarship (\$15,000/year), 2004-2005, 2007
- University of Toronto Open Scholarship (\$12,000/year), 2002-2004
- IEEE Thurb Cushing Award (\$500), 2002

PUBLICATIONS

h-index 12 (source Google Scholar)

Referee for Applied Physics Letters, Optics Letters, Optics Express, Journal of Lightwave Technology, Journal of the Optical Society of America B, Applied Physics B, Applied Optics, Applied Surface Science and Journal of Laser Micro and Nanoengineering

Patent applications

1. L. Shah, **S. M. Eaton**, P. R. Herman, "Pulsed Laser Source with Adjustable Grating Compressor," US Patent Application US2006/0285561 A1.
2. H. Zhang, P. R. Herman, **S. M. Eaton**, "Multipulse system for writing waveguides, gratings and integrated optical circuits" US Patent 20,120,039,567, 2012.

Book chapters

1. **S. M. Eaton**, G. Cerullo, R. Osellame, "Femtosecond Laser Modification of Bulk Dielectrics," in *Femtosecond laser micromachining: photonic and microfluidic devices in transparent materials*, R. Osellame, G. Cerullo, R. Ramponi, eds. (Springer, 2012). ISBN 978-3-642-23365-4. [Springer link](#)
2. **S. M. Eaton**, P. R. Herman, "Passive Photonic Devices in Glass," in *Femtosecond laser micromachining: photonic and microfluidic devices in transparent materials*, R. Osellame, G. Cerullo, R. Ramponi, eds. (Springer, 2012). ISBN 978-3-642-23365-4 [Springer link](#)
3. **S. M. Eaton**, G. Cerullo, R. Osellame, "Femtosecond laser writing of photonic devices in glasses and polymers," in *Laser growth and processing of photonic devices*, N. Vainos, ed. (Woodhead publishing, in press).
4. **S. M. Eaton**, N. Bellini, A. Crespi, R. Osellame, "3D Photonic Device Fabrication," in *Ultrafast laser processing: from micro to nanoscale*, K. Sugioka, Y. Cheng, eds. (Pan Stanford publishing, in press).

Peer Reviewed Publications

1. **S. M. Eaton**, H. Zhang, P. R. Herman, F. Yoshino, L. Shah, J. Bovatsek, A. Y. Arai, "Heat accumulation effects in femtosecond laser-written waveguides with variable repetition rate," *Opt. Express* **13**, 4708-4716 (2005). [DOI](#) **196 citations**
2. L. Shah, **S. M. Eaton**, A. Y. Arai, P. R. Herman, "Waveguide writing in fused silica with a femtosecond fiber laser at 522 nm and 1 MHz repetition rate," *Opt. Express* **13**, 1999-2006 (2005). [DOI](#) **84 citations**
3. **S. M. Eaton**, H. Zhang, M. L. Ng, J. Li, W. Chen, S. Ho, P. R. Herman, "Transition from thermal diffusion to heat accumulation in high repetition rate femtosecond laser writing of buried optical waveguides," *Opt. Express* **16**, 9443-9458 (2008). [DOI](#) **67 citations**
4. H. Zhang, **S. M. Eaton**, P. R. Herman, "Single-step writing of Bragg grating waveguides in fused silica with an externally modulated femtosecond fiber laser," *Opt. Lett.* **32**, 2559-2561 (2007). [DOI](#) **45 citations**
5. **S. M. Eaton**, W. Chen, L. Zhang, H. Zhang, R. Iyer, J. S. Aitchison, P. R. Herman, "Telecom-based directional coupler written with femtosecond fiber laser," *IEEE Photonics Technol. Lett.* **18**, 2174-2176 (2006). [DOI](#) **30 citations**
6. H. Zhang, **S. M. Eaton**, P. R. Herman, "Low-loss Type II waveguide writing in fused silica with single picosecond laser pulses," *Opt. Express* **14**, 4826-4834 (2006). [DOI](#) **30 citations**

7. H. Zhang, **S. M. Eaton**, J. Li, P. R. Herman, "Femtosecond laser direct-writing of multi-wavelength Bragg grating waveguides in bulk glass," *Opt. Lett.* **31**, 3495-3497 (2006). [DOI](#) **24 citations**
8. H. Zhang, **S. M. Eaton**, J. Li, A. H. Nejadmalayeri, P. R. Herman, "Type II high-strength Bragg grating waveguides photowritten with ultrashort laser pulses," *Opt. Express* **15**, 4182-4191 (2007). [DOI](#) **24 citations**
9. W. J. Reichman, D. M. Krol, L. Shah, F. Yoshino, A. Arai, **S. M. Eaton**, P. R. Herman, "A spectroscopic comparison of femtosecond-laser-modified fused silica using kilohertz and megahertz laser systems," *J. Appl. Phys.* **99** 123112 (2006). [DOI](#) **24 citations**
10. M. Trinczek, A. Gorelov, D. Melconian, **S. M. Eaton et al.**, *Phys. Rev. Lett.* **90**, 012501 (2003). [DOI](#) **21 citations**
11. **S. M. Eaton**, C. A. Merchant, R. Iyer, A. J. Zilkie, A. S. Helmy, J. S. Aitchison, P. R. Herman, D. Kraemer, R. J. D. Miller, C. Hnatovksy, R. S. Taylor, "Raman gain from waveguides inscribed in KGW by high repetition rate femtosecond laser," *Appl. Phys. Lett.* **92**, 081105 (2008). [DOI](#) **16 citations**
12. C. De Marco, **S. M. Eaton**, R. Suriano, S. Turri, M. Levi, R. Ramponi, G. Cerullo, R. Osellame, "Surface properties of femtosecond laser ablated PMMA," *Appl. Mater. Inter.* **2**, 2377-2384 (2010). [DOI](#) **12 citations**
13. W. Chen, **S. M. Eaton**, H. Zhang, and P. R. Herman, "Broadband directional couplers fabricated in bulk glass with high repetition rate femtosecond laser pulses," *Opt. Express* **16**, 11470-11480 (2008). [DOI](#) **11 citations**
14. **S. M. Eaton**, W. Chen, H. Zhang, R. Iyer, M. L. Ng, S. Ho, J. Li, J. S. Aitchison, P. R. Herman, "Spectral loss characterization of femtosecond laser written waveguides in glass with application to demultiplexing of 1300 and 1550 nm wavelengths," *J. Lightwave Technol.* **27** 1079-1085 (2009). [DOI](#) **8 citations**
15. T. Toney Fernandez, **S. M. Eaton**, G. Della Valle, R. Martinez Vazquez, M. Irannejad, G. Jose, A. Jha, G. Cerullo, R. Osellame, P. Laporta, "Femtosecond laser written optical waveguide amplifier in tellurite glass," *Opt. Express*, **18**, 20289-20297 (2010). [DOI](#) **7 citations**
16. **S. M. Eaton**, M. L. Ng, J. Bonse, A. Mermillod-Blondin, H. Zhang, A. Rosenfeld, P. R. Herman, "Low-loss waveguides fabricated in BK7 glass by high repetition rate femtosecond fiber laser," *Appl. Opt.* **47**, 2098-2102 (2008). [DOI](#) **6 citations**
17. **S. M. Eaton**, M. L. Ng, R. Osellame, P. R. Herman, "High refractive index contrast in fused silica waveguides by tightly focused high-repetition rate femtosecond laser," *J. Non-Cryst. Solids* **357**, 2387-2391 (2011). [DOI](#) **4 citations**
18. R. Suriano, A. Kuznetsov, **S. M. Eaton**, R. Kiyon, G. Cerullo, R. Osellame, B. N. Chichkov, M. Levi, S. Turri, "Femtosecond laser ablation of polymeric substrates for the fabrication of microfluidic channels" *Appl. Surf. Sci.* **257**, 6243-6250 (2011). [DOI](#) **4 citations**
19. H. Zhang, **S. M. Eaton**, J. Li, P. R. Herman, "Heat accumulation during high repetition rate ultrafast laser interaction," *J. Phys.: Conf. Series* **59**, 682-686 (2007). [DOI](#) **3 citations**
20. H. Zhang, S. Ho, **S. M. Eaton**, J. Li, and P. R. Herman, "Three-dimensional optical sensing network written in fused silica glass with femtosecond laser," *Opt. Express* **16**, 14015-14023 (2008). [DOI](#) **3 citations**
21. H. Zhang, **S. M. Eaton**, J. Li, P. R. Herman, "Type II femtosecond laser writing of Bragg grating waveguides in bulk glass," *Electron. Lett.* **42**, 1223-1224 (2006). [DOI](#) **3 citations**
22. S. Nakamura, S. Ho, J. Li, **S. M. Eaton**, H. Zhang, P. R. Herman, "Femtosecond laser direct writing of optical waveguides in silicone film," *J. Laser Micro-Nano Eng.* **2**, 189-193 (2007). [DOI](#) **2 citations**
23. **S. M. Eaton***, C. De Marco*, S. Turri, M. Levi, R. Ramponi, G. Cerullo, R. Osellame, "High-

- fidelity solvent-resistant replica molding of hydrophobic polymer surfaces produced by femtosecond laser nanofabrication," *Langmuir*, **27**, 8391-8395 (2011). [DOI](#) *equal contributions
24. R. Martinez-Vazquez, **S. M. Eaton**, G. Cerullo, R. Osellame, "Fabrication of binary Fresnel lenses in PMMA by femtosecond laser surface ablation" *Opt. Express* **19**, 11597-11604 (2011). [DOI](#)
 25. L. Amato, Y. Gu, N. Bellini, **S. M. Eaton**, G. Cerullo, R. Osellame, "Integrated three dimensional filter separates nanoscale from microscale elements in a microfluidic chip," *Lab Chip* (accepted). [DOI](#)
 26. H. Zhang, S. Ho, M. L. Ng, **S. M. Eaton**, J. Li, P. R. Herman, "3-D laser writing of Bragg grating waveguides in bulk glasses," *CIPI PHOTONS Technical Review* **5**, 36-39 (2007).
 27. C. De Marco, R. Suriano, M. Levi, S. Turri, **S. M. Eaton**, G. Cerullo, R. Osellame, "Femtosecond laser fabrication and characterization of microchannels and waveguides in methacrylate-based polymers," *Microsyst. Technol.* **18**, 183-190 (2012). [DOI](#)
 28. **S. M. Eaton**, R. Martinez-Vazquez, R. Ramponi, G. Cerullo, R. Osellame, "Femtosecond laser microstructuring for polymeric lab-on-chips," invited review article for *J. Biophotonics* (in press)
 29. M. T. Raimondi, **S. M. Eaton**, M. Laganà, V. Aprile, M. Nava, G. Cerullo, R. Osellame "3D niches engineered via two-photon laser polymerization promote stem cell homing." (submitted)
 30. C. De Marco, **S. M. Eaton**, R. Martinez-Vazquez, S. Rampini, R. Ramponi, G. Cerullo, M. Levi, S. Turri, R. Osellame, "Solvent vapor treatment to restore hydrophilic microchannels formed in PMMA by femtosecond laser ablation." (submitted)
 31. **S. M. Eaton**, R. Osellame, "Femtosecond laser micromachining for plastic lab-on-a-chip," invited article for *Photonik magazine*. (in press)
 32. **S. M. Eaton***, M. T. Raimondi*, M. Nava, M. Laganà, G. Cerullo, R. Osellame, "Two-photon laser polymerization: from fundamentals to biomedical application in tissue engineering and regenerative medicine" invited review article for *Journal of Applied Biomaterials and Biomechanics* (submitted) *equal contributions

Invited Seminars and Conference Talks

1. **S. M. Eaton** "Femtosecond laser writing of photonic components in glasses and polymers," International symposium on non-oxide and new optical glasses, Ningbo, China, June 2010, hosted by Prof. J. Qiu
2. **S. M. Eaton**, "High repetition rate femtosecond laser writing of waveguide devices in bulk glass, IEEE Photonics society meeting, *Technology and applications of ultrafast laser inscription*, Heriot Watt University, Edinburgh, July 2009, hosted by Prof. A. Kar.
3. **S. M. Eaton**, M. L. Ng "Micromachining of glass using ultrafast and ultraviolet lasers," Max Born Institut, 27-April-2007, hosted by Dr. J. Bonse.
4. **S. M. Eaton**, "Depth-independent waveguides formed by high repetition rate femtosecond laser," Oral Talk, 26-April-07, Laser Laboratorium Goettingen 20th year anniversary workshop, hosted by Prof. G. Marowsky.
5. **S. M. Eaton**, "Waveguide writing in glass using a high repetition rate femtosecond fiber laser," Politecnico di Milano, 16-April-2007, hosted by Prof. R. Osellame.

Other Refereed Conference Presentations

1. M. T. Raimondi, M. Laganà, **S. M. Eaton**, M. Nava, G. Cerullo, R. Osellame, "An engineered

- mechanical niche for the cultivation of mesenchymal stem cells," RMSC 2012, Guangzhou (invited talk).
2. M. Nava, M. Laganà, M. T. Raimondi, V. Aprile, **S. M. Eaton**, G. Cerullo, R. Osellame, "Two-photon polymerization for engineering stem cell niches," GNB 2012, Rome (poster).
 3. F. Serra, **S. M. Eaton**, E. Borlini, R. Cerbino, M. Buscaglia, G. Cerullo, R. Osellame, T. Bellini, "Bistability of nematic liquid crystals confined in 3D scaffold produced by two-photon polymerization," CTU1J.4, CLEO 2012, San Jose (talk).
 4. V. Aprile, **S. M. Eaton**, M. Laganà, G. Cerullo, M. T. Raimondi, R. Osellame, "Femtosecond laser two-photon polymerization of three-dimensional scaffolds for tissue engineering and regenerative medicine applications," Photonics West 2012, Proc. SPIE 8247-7 (talk).
 5. R. Martinez, **S. M. Eaton**, G. Cerullo, R. Ramponi, R. Osellame, "Plastic optofluidic chip fabricated by femtosecond laser ablation," Photonics West 2012, Proc. SPIE 8244-23 (talk).
 6. N. Bellini, Y. Gu, L. Amato, **S. Eaton**, G. Cerullo, R. Osellame, "Integration of 3D filter in a microfluidic chip for separation of microscale particles," Photonics West 2012, Proc. SPIE 8244, 82440G (talk).
 7. **S. M. Eaton**, C. De Marco, S. Rampini, R. Martinez-Vazquez, G. Cerullo, R. Ramponi, S. Turri, M. Levi, R. Osellame, "Femtosecond laser patterning and replication of PMMA for spatially tailored wettability in microfluidic channels," CWE2, CLEO 2011, Baltimore (talk).
 8. R. Martinez-Vazquez, **S. M. Eaton**, R. Ramponi, G. Cerullo, R. Osellame, "Fabrication of binary Fresnel lenses in PMMA by femtosecond laser micromachining," JMG5, CLEO 2011, Baltimore (talk).
 9. C. De Marco, **S. M. Eaton**, S. Rampini, G. Cerullo, R. Ramponi, S. Turri, M. Levi, R. Osellame, "Femtosecond laser patterning of PMMA for spatially tailored wettability," CM4.6, CLEO Europe 2011, Munich (talk).
 10. R. Martinez-Vazquez, **S. M. Eaton**, G. Cerullo, R. Ramponi, R. Osellame, "Optofluidic chip fabricated by femtosecond laser ablation of PMMA," 4228, EOS Optofluidics 2011, Munich (talk).
 11. C. De Marco, **S. M. Eaton**, R. Martinez-Vazquez, S. Rampini, G. Cerullo, R. Ramponi, S. Turri, M. Levi, R. Osellame, "Chloroform vapor treatment to restore hydrophilic property of hydrophobic microchannels in PMMA formed by femtosecond laser," 4275, EOS Optofluidics 2011, Munich (talk).
 12. A. Jha, G. Jose, M. Irannejad, D. P. Steenson, T. T. Fernandez, **S. M. Eaton**, P. Laporta, "Recent advances in Er³⁺-ion doped tellurite glass planar waveguide for amplification," Photonics 2010 India (invited talk).
 13. **S. M. Eaton**, C. De Marco, R. Martinez-Vazquez, G. Cerullo, S. Turri, R. Osellame, "Femtosecond laser microfabrication of microfluidic channels in polymers for lab-on-chip applications," FOTONICA 2011, Genova (poster).
 14. C. De Marco, **S. M. Eaton**, S. Turri, M. Levi, R. Ramponi, G. Cerullo, R. Osellame, "A soft-lithographic technique for replicating hydrophobic areas patterned by a femtosecond laser on PMMA," EOS Annual Meeting 2010, Paris (talk).
 15. R. Suriano, C. De Marco, M. Levi, S. Turri, A. Kuzetsov, R. Kiyan, B. N. Chichkov, **S. M. Eaton**, G. Cerullo, R. Osellame, "Femtosecond laser ablation and characterization of microchannels in poly(methyl methacrylate) for fabrication of lab-on-chip microdevices" Proceedings of the 2nd European Conference on Microfluidics - Microfluidics 2010, 8-10 December 2010, Toulouse (talk).
 16. C. De Marco, R. Suriano, M. Levi, S. Turri, **S. M. Eaton**, R. Ramponi, G. Cerullo, R. Osellame, "Fabrication and characterization of microchannels and waveguides in photocrosslinked polyethylene glycolmethacrylate (PEG-MA) by femtosecond laser technology,"

- Proceedings of the 2nd European Conference on Microfluidics - Microfluidics 2010, 8-10 December 2010, Toulouse (talk).
17. C. De Marco, **S. M. Eaton**, R. Suriano, S. Turri, M. Levi, R. Ramponi, G. Cerullo, R. Osellame, "Surface Properties of Femtosecond Laser Ablated Polymers," Proceedings of the 1st Workshop on the Life Sciences at Politecnico di Milano, Milano, Italy, 30 November, 2010, pp. 157-159.
 18. R. Suriano, C. De Marco, **S. M. Eaton**, G. Cerullo, R. Osellame, C. Ohrt, R. Kiyon, B. N. Chichkov, M. Levi, S. Turri, "Fabrication and characterization of microchannels produced in PMMA by fs laser ablation", MACRO2010, 11-16 July 2010, Glasgow (talk).
 19. **S. M. Eaton**, T. Fernandez, G. Della Valle, M. Irannejad, G. Jose, A. Jha, G. Cerullo, P. Laporta, R. Osellame, "100-nm internal gain bandwidth in Er:Yb-doped phospho-tellurite waveguides written by femtosecond laser," CMH2, CLEO 2010, San Jose (talk).
 20. **S. M. Eaton**, J. M. Pinazo, R. Suriano, N. Bellini, R. Ramponi, S. Turri, M. Levi, G. Cerullo, R. Osellame, "Waveguide and microchannel fabrication in polymers with femtosecond lasers," Photonics West 2010, Proc. SPIE 7589-29 (talk).
 21. R. Suriano, L. Torlaj, J. M. Pinazo, M. Levi, S. Turri, **S. M. Eaton**, G. Cerullo, R. Osellame, C. Ohrt, R. Kiyon, B. N. Chichkov, "Characterization of microchannels in polymers fabricated by femtosecond laser micromachining," European Polymer Federation conference, Graz, July 2009 (talk).
 22. R. Suriano, L. Torlaj, J. M. Pinazo, **S. M. Eaton**, G. Cerullo, R. Osellame, C. Ohrt, R. Kiyon, B. N. Chichkov, M. Levi, S. Turri, "Characterization of microchannels obtained by femtosecond laser microfabrication of polymer substrates (Italian)," Italian Association of Macromolecules, Milan, Sept. 2009 (talk).
 23. **S. M. Eaton**, J. M. Pinazo, R. Suriano, R. Ramponi, S. Turri, M. Levi, G. Cerullo, R. Osellame, "Femtosecond laser fabrication of waveguides and microchannels in polymers for optofluidic sensing," CM7.1, CLEO Europe 2009, Munich (talk).
 24. **S. M. Eaton**, M. L. Ng, T. Rafique, P. R. Herman, "High refractive index contrast in fused silica waveguides by tightly focused, high-repetition rate femtosecond laser," CFT3, CLEO 2009, Baltimore (talk).
 25. J. Li, **S. M. Eaton**, P. R. Herman, "5D multiphoton microscopy: in-situ diagnostics for ultrafast laser 3D nanofabrication," Photonics West 2008, Proc. SPIE 7201-38 (talk).
 26. W. Chen, **S. M. Eaton**, H. Zhang, P. R. Herman, "Wavelength-flattened asymmetric directional couplers written by femtosecond laser," CTuG3, CLEO 2008, San Jose (talk).
 27. J. Li, H. Zhang, **S. M. Eaton**, P. R. Herman, "5-D spectroscopic microscopy for femtosecond laser writing of optical waveguides," JWE3, CLEO 2008, San Jose (talk).
 28. H. Zhang, S. Ho, **S. M. Eaton**, M. L. Ng, J. Li, P. R. Herman, "Single-step burst writing of high-strength Bragg grating waveguides in bulk fused silica glass for high temperature optical sensing," Photonics West 2008, Proc. SPIE 6896-9 (talk).
 29. W. Chen, **S. M. Eaton**, S. Yang, P. R. Herman, "Polarization control in fs laser writing of waveguide directional couplers," Photonics West 2008, Proc. SPIE 6897A-30 (talk).
 30. M. L. Ng, **S. M. Eaton**, D. Chanda, P. R. Herman, "Femtosecond laser direct writing of buried diffractive optical elements in fused silica," Photonics West 2008, Proc. SPIE 6897A-20 (talk).
 31. S. Ho, M. L. Ng, **S. M. Eaton**, H. Zhang, C. C. Qu, P. R. Herman, J. S. Aitchison, "Femtosecond laser writing for selective chemical etching and optical device integration in 3D optofluidic systems," Photonics West 2008, Proc. SPIE 6886-33 (talk).
 32. J. Li, H. Zhang, **S. M. Eaton**, P. R. Herman, "Ultrafast laser 5-D microscopy for controlling 3-D laser nanoprocessing," Photonics West 2008, Proc. SPIE 6881-48 (talk).

33. **S. M. Eaton**, J. Bonse, H. Zhang, M. L. Ng, S. Ho, W. Chen, J. Li, T. Rafique, A. Rosenfeld, P. R. Herman, "Direct writing of waveguide devices in fused silica glass using high repetition rate fiber laser," Photonics West 2008, Proc. SPIE 6897A-29 (talk).
34. J. Li, H. Zhang, **S. M. Eaton**, T. Navedi, A. Hosseini, P. R. Herman, "Integration of femtosecond laser 5D microscopy and 3D," PMO-2, Conference on Laser Ablation 2007, Tenerife (poster).
35. H. Zhang, S. Ho, **S. M. Eaton**, J. Li, P. R. Herman, "Contrasts in single-pulse and burst ultrafast laser writing of Bragg grating waveguides in bulk glasses," PMO-1, Conference on Laser Ablation 2007, Tenerife (poster).
36. H. Zhang, **S. M. Eaton**, P. R. Herman, "Type II and Burst Methods for Ultrashort Laser Direct Fabrication of High-Strength Bragg Grating Waveguides inside Bulk Glasses: A Comparison," BTuD2, Bragg Gratings Poling and Photosensitivity 2007, Quebec City (talk).
37. **S. M. Eaton**, H. Zhang, M. L. Ng, S. Ho, P. R. Herman, "Optimization of repetition rate, pulse duration, and polarization for femtosecond-laser-writing of waveguides in borosilicate and fused silica glasses," CE5-5-WED, CLEO Europe 2007, Munich (talk).
38. M. L. Ng, **S. M. Eaton**, D. Chanda, P. R. Herman, "Femtosecond direct laser writing of buried diffractive optical elements in glasses," CE4-6-TUE, CLEO Europe 2007, Munich (talk).
39. H. Zhang, **S. M. Eaton**, S. Ho, J. Li, P. R. Herman, "Bragg-grating-waveguide devices in glass with ultrashort laser pulses," CF8-6-THU, CLEO Europe 2007, Munich (talk).
40. H. Zhang, **S. M. Eaton**, P. R. Herman, "Direct writing of high-strength Bragg grating waveguides in fused silica by an externally modulated ultrafast laser," CPDB7, CLEO 2007, Baltimore (post-deadline talk).
41. C. A. Merchant, **S. M. Eaton**, R. Iyer, A. S. Helmy, J. S. Aitchison, C. Hnatovksy, R. S. Taylor, P. R. Herman, "Low-loss waveguides fabricated in $\text{KGd}(\text{WO}_4)_2$ by high repetition rate femtosecond laser," CPDB8, CLEO 2007, Baltimore (post-deadline talk).
42. **S. M. Eaton**, W. Chen, H. Zhang, M. L. Ng, P. R. Herman, "Depth-independent, low-loss waveguides formed by high-repetition rate femtosecond laser," CThS7, CLEO 2007, Baltimore (talk).
43. S. Ho, M. L. Ng, **S. M. Eaton**, P. R. Herman, J. S. Aitchison, "Single and multi-scan femtosecond laser writing for selective chemical etching of glass micro-channels," CThJ4, CLEO 2007, Baltimore (talk).
44. L. E. Abolghasemi, **S. M. Eaton**, A. Hosseini, P. R. Herman, "3D laser nano-structuring: contrast in three-photon and two-photon polymerization of SU-8," CThN6, CLEO 2007, Baltimore (talk).
45. H. Zhang, **S. M. Eaton**, J. Li, A. H. Nejadmalayeri, P. R. Herman, "Writing high-strength Bragg grating waveguides in bulk glasses with picosecond laser," CThS1, CLEO 2007, Baltimore (talk).
46. M. Y. Xu, S. A. Hosseini, **S. M. Eaton**, L. D. Lilge, P. R. Herman, "Heat accumulation effects in femtosecond laser ablation of ITO thin films for DEP trapping devices," CFR3, CLEO 2007, Baltimore (talk).
47. J. Li, P. R. Herman, **S. M. Eaton**, H. Zhang, A. H. Nejadmalayeri, S. A. Hosseini, "Combining 5-D microscopy with 3-D femtosecond laser nanoprocessing," CFR4, CLEO 2007, Baltimore (talk).
48. S. Nakamura, S. Ho, J. Li, **S. M. Eaton**, H. Zhang, P. R. Herman, "Laser direct writing of optical waveguides in silicone film," Laser Precision Microfab. 2007, Vienna (talk).
49. T. Rafique, S. Ho, **S. M. Eaton**, M. Xu, M. L. Ng, L. Abolghasemi, J. Li, P. R. Herman, "Femtosecond laser 3-D microprocessing for biophotonic lab-on-a-chip systems," NCE CIPI Annual Meeting, Ottawa, 1-June-2007 (poster).

50. W. Chen, **S. M. Eaton**, H. Zhang, J. Li, A. Hosseini, A. H. Nejadmalayeri, P. R. Herman, "Femtosecond laser nanoprocessing: direct-writing of 3-D optical circuits," NCE CIPI Annual Meeting, Ottawa, 1-June-2007 (poster).
51. H. Zhang, **S. M. Eaton**, J. Li, P. R. Herman, "Ultrafast laser direct writing of Bragg grating waveguides," 2007 Crossborder Workshop, U Toronto, 17-May-2007 (talk).
52. P. R. Herman, **S. M. Eaton**, H. Zhang, J. Li, "Femtosecond laser waveguide writing: contrasting interactions at MHz and kHz repetition rates," LEOS Annual meeting 2006, Montreal (talk).
53. H. Zhang, **S. M. Eaton**, J. Li, P. R. Herman, "Ultrafast laser direct writing of Bragg grating waveguides," OPTIC (Ontario Photonics Industry Cluster) Annual Members Meeting, McMaster University, 26-Mar-2007 (poster). *Student Poster Award*
54. **S. M. Eaton**, W.-J. Chen, H. Zhang, P. R. Herman, "Telecom band directional couplers written with a high repetition rate fs laser," JTuD8, CLEO 2006, Long Beach (poster).
55. W. J. Reichman, D. M. Krol, L. Shah, F. Yoshino, A. Arai, **S. M. Eaton**, P. R. Herman, "Fluorescence and Raman microscopy of waveguides fabricated using kHz and MHz repetition rate femtosecond lasers," CME2, CLEO 2006, Long Beach (talk).
56. H. Zhang, **S. M. Eaton**, A. Hosseini, P. R. Herman, "Low-damage Type-II waveguide writing in fused silica with femtosecond and picosecond lasers," CMX6, CLEO 2006, Long Beach (talk).
57. P. R. Herman, **S. M. Eaton**, Haibin Zhang, and Jianzhao Li, "Exploiting heat-accumulation effects in high-repetition rate ultrashort laser microprocessing," Photonics West 2006, Proc. SPIE 6108 (talk).
58. **S. M. Eaton**, H. Zhang, P. R. Herman, F. Yoshino, L. Shah, J. Bovatsek, A. Y. Arai, "Optical waveguides written with a variable repetition rate femtosecond fiber laser," Tu-018, Conference on Laser Ablation (COLA) 2005, Banff (talk).
59. **S. M. Eaton**, H. Zhang, P. R. Herman, F. Yoshino, L. Shah, J. Bovatsek, A. Arai, "Heat accumulation effects in femtosecond laser-written waveguides with variable repetition rate," Young Scientists in Photonics Forum (YSPF), co-located with LASER 2005, Munich, 10-12 June 2005 (talk). *Paper selected for \$2,000 CIPI-PRO travel award.*
60. **S. M. Eaton**, H. Zhang, P. R. Herman, F. Yoshino, L. Shah, A. Y. Arai, "Writing optical waveguides with variable repetition rate femtosecond laser," CFG4, CLEO 2005, Baltimore (talk).
61. **S. M. Eaton**, F. Yoshino, L. Shah, A. Arai, H. Zhang, S. Ho, P. Herman, "Thermal heating effects in writing optical waveguides with a 0.1 - 5 MHz rate ultrafast fiber laser," Photonics West 2005, Proc. SPIE 5713A-7 (talk).
62. L. Shah, F. Yoshino, A. Arai, **S. M. Eaton**, H. Zhang, S. Ho, P. Herman, "MHz-rate ultrafast fiber laser for writing of optical waveguides in silica," Photonics West 2005, Proc. SPIE 5714-44 (talk).
63. S. Ho, J. S. Aitchison, **S. M. Eaton**, P. R. Herman, J. Li, "F₂-laser microfabrication for integrating optical circuits with microfluidic biochips," Optics East 2004, Pro. SPIE 5591 (talk).