

# Curriculum Vitae

## Education

09/2008–09/2012 **PhD** at University of St Andrews  
09/2007–09/2008 **Masters** in “Photonics and  
Optoelectronic Devices”  
University of St Andrews & Heriot-Watt  
University  
Thesis: Laser-Based Photoacoustic  
Spectroscopy and Gas Detection  
09/2003–09/2007 **Bachelors** in “Electronics  
Science & Technology (Optoelectronics)”  
East China Normal University  
Thesis: Integrated Detector and Interferometer for  
Near-Infrared Single Photons

## Research Highlights & Prizes

- 2012—**EPSRC** Doctoral prize for improving retention of the very best students in research careers (one-year research grant)
- 2012—Best student presentation, symposium on Organic Photonics & Electronics at the **EOS (European Optical Society)** Annual Meeting
- 2012—Best poster, **SID (Society for Information Display)** Organic Electronics UK
- 2011—The **AIP Advances paper** on CMOS Time Resolved PL sensor featured in a news highlight and press release by American Institute of Physics (AIP)
- 2011—“Optoelectronics Committee Prize” by **The Rank Prize Funds** for “the Best Contributed Paper” at the symposium on Solid-State Lighting
- 2011—**School of Physics & Astronomy** 3rd year postgraduate students poster presentation prize

**Research Interests**

Organic semiconductors have great potential as low cost, easy to make, tuneable visible wavelength sources. My current research is to develop hybrid optoelectronics by combining organic semiconductor lasers with inorganic LEDs, and their applications in explosives detection. I have focused on the studies of photo-physical properties of a wide range of organic semiconductors used as gain materials for lasers and have developed feedback resonators and pump sources for organic semiconductor lasers. I am also developing methods for improving the sensitivity and selectivity of the organic semiconductor explosives sensors.

**Conference Presentations**

Vth International Krytyn Summer School, Krutyn, Poland, June 2009, poster presentation entitled “Low-threshold organic lasers based on oligofluorene truxenes”

UK Semiconductors, Sheffield, June 2010, oral presentation entitled “Advanced materials for low-threshold organic semiconductor lasers”

The Rank Prize Funds (Optoelectronics Symposium), Lake District, September 2011, oral presentation entitled “InGaN LED pumped polymer laser explosive sensor”

SPIE Photonics Europe conference, Belgium, April 2012, oral presentation entitled “InGaN LED pumped polymer laser explosive sensor”

EOS (European Optical Society) Annual Meeting, TOM 5 Organic Photonics & Electronics, Aberdeen, September 2012, oral presentation entitled “Nanoimprinted polymer lasers pumped by light-emitting diodes”

SID (Society for Information Display) Organic Electronics, London, September 2012, poster presentation entitled “Organic semiconductor explosive sensors”

**Publications**

1. J. Herrnsdorf, Y. Wang, J. J. D. McKendry, D. Massoubre, Z. Gong, B. Guilhabert, G. Tsiminis, G. A. Turnbull, I. D. W. Samuel, N. Laurand, E. Gu and Martin D. Dawson, "Micro-LED Pumped Polymer Laser: A Discussion of Future Pump Sources for Organic Lasers," *Laser & Photonics Reviews* Accepted for publication (2013)
2. Y. Wang, A. L. Kanibolotsky, P. J. Skabara, I. D. W. Samuel and G. A. Turnbull, "LED pumped polymer laser sensor for explosives," *Laser & Photonics Reviews* Accepted for publication (2013)
3. E. R. Martins,\* Y. Wang,\* A. L. Kanibolotsky, P. J. Skabara, I. D. W. Samuel and G. A. Turnbull, "Low-threshold nanoimprinted lasers using substructured gratings for control of distributed feedback," *Adv. Opt. Mater.* **1**, 563–566 (2013)  
\* Joint lead author
4. Y. Wang, G. Tsiminis, A. L. Kanibolotsky, P. J. Skabara, I. D. W. Samuel and G. A. Turnbull, "Nanoimprinted polymer lasers with threshold below 100 W/cm<sup>2</sup> using mixed-order distributed feedback resonators," *Opt. Express* **21**, 14362–14367 (2013)
5. G. Tsiminis,\* Y. Wang,\* A. L. Kanibolotsky, P. J. Skabara, I. D. W. Samuel and G. A. Turnbull, "Nanoimprinted organic semiconductor laser pumped by a light-emitting diode," *Adv. Mater.* **25**, 2826-2830 (2013).  
\* Joint lead author
6. Y. Wang, Y. Yang, G. A. Turnbull and I. D. W. Samuel, "Explosive Sensing Using Polymer Lasers," *Mol. Cryst. Liq. Cryst.* **554**, 103-110 (2012).
7. Y. Wang, B. R. Rae, R. K. Henderson, Z. Gong, J. Mckendry, E. Gu, M. D. Dawson, G. A. Turnbull and I. D. W. Samuel, "Novel Ultra-portable Explosives Sensor Based on a

- CMOS Fluorescence Lifetime Analysis Micro-System,” *AIP Adv.* **1** (3), 032115 (2011).
8. Y. Wang, G. A. Turnbull and I. D. W. Samuel, “Conjugated polymer sensors for explosive vapor detection,” *Organic Semiconductors in Sensors and Bioelectronics IV, Proc. of SPIE* **8118**, (2011).
  9. Y. Wang, N. B. McKeown, K. J. Msayib, G. A. Turnbull and I. D. W. Samuel, “Laser Chemosensor with Rapid Responsivity and Inherent Memory Based on a Polymer of Intrinsic Microporosity,” *Sensors* **11** (3), 2478-2487 (2011).
  10. Y. Chen, J. Herrnsdorf, B. Guilhabert, A. L. Kanibolotsky, A. R. Mackintosh, Y. Wang, R. A. Pethrick, E. Gu, G. A. Turnbull, P. J. Skabara, I. D. W. Samuel, N. Laurand, M. D. Dawson, “Laser action in a surface-structured free-standing membrane based on a pi-conjugated polymer-composite,” *Org. Electron.* **12** (1), 62-69 (2011).
  11. Y. Wang, G. Tsiminis, Y. Yang, A. Ruseckas, A. L. Kanibolotsky, I. F. Perepichka, P. J. Skabara, G. A. Turnbull and I. D. W. Samuel, “Broadly tunable deep blue laser based on a star-shaped oligofluorene truxene,” *Synth. Met.* **160** (13-14), 1397-1400 (2010).
  12. G. Tsiminis, Y. Wang, P. E. Shaw, A. L. Kanibolotsky, I. F. Perepichka, M. D. Dawson, P. J. Skabara, G. A. Turnbull and I. D. W. Samuel, “Low-threshold organic laser based on an oligofluorene truxene with low optical losses,” *Appl. Phys. Lett.* **94** (24), 243304 (2009).