



Swapnajit Chakravarty

Married

Lives in Austin, TX

Education

M.S. in Electrical Engineering,
University of Cincinnati, Ohio
(2003)

Ph.D. in Electrical Engineering,
University of Michigan, Ann Arbor,
MI (2007)

Employment after UC Graduation:

2003 – 2007: Research Assistant, University of Michigan, Ann Arbor, MI

2007 – 2008: Applications Development Engineer, KLA-Tencor, San Jose, CA

2008 – 2009: Sr. Staff Development Engineer, Philips Lumileds, San Jose, CA

2009 – 2011: Research Scientist, Omega Optics Inc., Austin, TX

Current Job Description:

Sr. Research Scientist, Omega Optics Inc., Austin, TX

Highlights

- Promoted to SPIE Senior Member in 2013; promoted to IEEE Senior Member in 2013.

Publications (as of March 2014: **27** journal publications and **44** refereed conference papers, h-index = **15**, with more than **700** citations)

- S.Chakravarty, D.G.Georgiev, P.Boolchand, M.Micoulaut, “Aging, fragility and the reversibility window in bulk alloy glasses,” *J. Phys.-Cond. Matt.* 17(1), L1-L7 (2005). (107 citations)
- S.Chakravarty, J.Topol’ančik, P.Bhattacharya, S.Chakrabarti, Y. Kang, M.E. Meyerhoff, “Ion detection with photonic crystal microcavities,” *Opt. Lett.* 30, 2578 (2005).
- S.Chakravarty, P.Bhattacharya, Z.Mi, “Electrically injected quantum-dot photonic crystal microcavity light emitting arrays with air-bridge contacts,” *IEEE Photon. Tech. Lett.*, 18, 2665 (2006).
- W-C. Lai, S. Chakravarty, X. Wang, C. Lin, R.T. Chen, “On-Chip methane sensing by near-IR absorption signatures in a photonic crystal slot waveguide”, *Optics Lett.* 36, 984 (2011).
- W-C. Lai, S. Chakravarty, X. Wang, C. Lin, R.T. Chen, “Photonic Crystal Slot Waveguide Absorption Spectrometer for On-Chip Near-Infrared Spectroscopy of Xylene in Water”, *Appl. Phys. Lett.* 98 (2), 023304 (2011).

- S. Chakravarty, Y. Zou, W-C. Lai, R.T. Chen, “Slow light engineering for high Q high sensitivity photonic crystal microcavity biosensors in silicon”, *Biosens. Bioelectron.* 38(1), 170 (2012).
- Y. Zou, S. Chakravarty, W-C. Lai, R.T. Chen, “Methods to Array Photonic Crystal Microcavities for High Throughput High Sensitivity Bio-Sensing on a Silicon-Chip Based Platform”, *Lab Chip* 12, 2309 (2012).
- W-C. Lai, S. Chakravarty, Y. Zou, R.T. Chen, “Silicon nano-membrane based photonic crystal microcavities for high sensitivity bio-sensing”, *Optics Lett.* 37 (7), 1208 (2012)
- WC Lai, S Chakravarty, Y Zou, RT Chen, “Multiplexed detection of xylene and trichloroethylene in water by photonic crystal absorption spectroscopy”, *Optics letters* 38 (19), 3799-3802 (2013)
- W-C. Lai, S. Chakravarty, Y. Zou, R.T. Chen, “Slow Light Enhanced Sensitivity of Resonance Modes in Photonic Crystal Biosensors”, *Appl. Phys. Lett.* 102 (4), 041111 (2013)
- S. Chakravarty, W-C. Lai, Y. Zou, H.A. Drabkin, G.R. Simon, S.H. Chin, R. M. Gemmill, R.T. Chen, “Multiplexed Specific Label-Free Detection of NCI-H358 Lung Cancer Cell Line Lysates with Silicon Based Photonic Crystal Microcavity Biosensors”, *Biosens. Bioelectron.* 43, 50 (2013).
- Y. Zou, S. Chakravarty, D. N. Kwong, W-C. Lai, X. Xu, X. Lin, A. Hosseini, R. T. Chen, “Cavity-Waveguide Coupling Engineered High Sensitivity Silicon Photonic Crystal Microcavity Biosensors with High Yield” *IEEE J. Sel. Top. Quant. Electron.* 20(4), 6900710 (2014).

Patents (7 Issued, 4 pending)

- S. Chakravarty, R.T. Chen, “Photonic Crystal Microarray Device for Label-free Multiple Analyte Sensing, Biosensing and Diagnostic Assay Chips,” Patent US8293177 (Issued: 10/23/2012).
- S. Chakravarty, R.T. Chen, “Photonic Crystal Slot Waveguide Miniature On-Chip Absorption Spectrometer,” Patent US 8282882 (Issued: 10/09/2012).
- S. Chakravarty, A. Hosseini, R.T. Chen, “Packaged chip for multiplexing photonic crystal waveguide and photonic crystal slot waveguide devices for chip-integrated label-free detection and absorption spectroscopy with high throughput, sensitivity, and specificity,” Patent Application # 13607801, US Patent and Trademark Office (2012). (Allowed)

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