Exponent®
Engineering & Scientific Consulting

Jian Zhang, Ph.D.

Manager | Electrical Engineering & Computer Science
149 Commonwealth Drive | Menlo Park, CA 94025
(650) 688-6728 tel | jzhang@exponent.com

Professional Profile

Dr. Zhang has worked with a wide breadth of electronic devices and material systems. His experience at Exponent includes electrical and materials failure analysis on printed circuit boards (PCBs), visual displays, sensor modules, and various other electronic devices. He also has extensive knowledge of optical spectroscopy systems, nanoscale electronic devices, and semiconductor materials.

Dr. Zhang has expertise with a large range of experimental and analytical tools. Dr. Zhang has in depth experience with a variety of characterization techniques such as scanning probe microscopy (SPM), atomic force microscopy (AFM), Raman spectroscopy, photoluminescence (PL) spectroscopy, IV characterization, impedance analysis, energy-dispersive X-ray spectroscopy (EDS), and scanning electron microscopy (SEM). He has worked on nanoscale semiconductor device fabrication using techniques such as photolithography, e-beam lithography (EBL), metal deposition, and wire bonding. He also has extensive exposure with modeling electromagnetic (EM) systems and writing software for data analysis using Matlab and other software languages.

Dr. Zhang has worked with a wide breadth of electronic devices and material systems. His experience at Exponent includes electrical and materials failure analysis on printed circuit boards (PCBs), visual displays, sensor modules, and various other electronic devices. He also has extensive knowledge of optical spectroscopy systems, nanoscale electronic devices, and semiconductor materials.

Dr. Zhang has expertise with a large range of experimental and analytical tools. Dr. Zhang has in depth experience with a variety of characterization techniques such as scanning probe microscopy (SPM), atomic force microscopy (AFM), Raman spectroscopy, photoluminescence (PL) spectroscopy, IV characterization, impedance analysis, energy-dispersive X-ray spectroscopy (EDS), and scanning electron microscopy (SEM). He has worked on nanoscale semiconductor device fabrication using techniques such as photolithography, e-beam lithography (EBL), metal deposition, and wire bonding. He also has extensive exposure with modeling electromagnetic (EM) systems and writing software for data analysis using Matlab and other software languages.

Academic Credentials & Professional Honors

Ph.D., Electrical and Computer Engineering, University of Texas, Austin, 2018

M.S., Electrical and Computer Engineering, University of Texas, Austin, 2014

B.S.E., Electrical Engineering, Princeton University, 2011

Languages

Mandarin

Publications

Zhang, Z.J., De Palma, A., Brennan, C. J., Cossio, G., Ghosh, R., Banerjee, S. K., Yu, E. T. “Probing Nanoscale Variations in Strain and Band Structure of MoS2 on Au Nanopyramids Using Tip-Enhanced Raman Spectroscopy.” Phys. Rev. B 97, 85305 (2018).

Lee, S., Ahn, J., Mathew, L., Rao, R., Zhang, Z.J., Kim, J. H., Banerjee, S. K., Yu, E. T., “Highly Improved Passivation of c-Si Surfaces Using a Gradient i a-Si:H Layer on Silicon Heterojunction Solar Cells.” J. Appl. Phys. 123, 163101 (2018).

Zhang Z.J., Dillen, D. C., Tutuc, E., Yu, E. T., “Strain and Hole Gas Induced Raman Shifts in Ge–SixGe1–x Core–Shell Nanowires Using Tip-Enhanced Raman Spectroscopy,” Nano Lett. 15(7), 4303–4310 (2015).

Presentations

Zhang, Z-J., De Palma, A., Brennan, C. J., Cossio, G., Ghosh, R., Banerjee, S. K., Yu, E. T. “Tip-Enhanced Raman Spectroscopy of Monolayer and Bilayer MoS2. Oral Presentation, 59th Electronic Materials Conference, South Bend, IN, 2017.

Zhang Z-J., Dillen, D. C., Tutuc, E., Yu, E. T. Tip-enhanced Raman Spectroscopy of Electrically Contacted Ge–SixGe1– x Core-Shell Nanowires. Oral Presentation, 58th Electronic Materials Conference, Newark, DE, 2016.

Zhang Z-J., Dillen, D. C., Tutuc, E., Yu, E. T. Strain and Hole Gas Induced Raman Shifts in Ge–SixGe1–x Core-Shell Nanowires Using Tip-Enhanced Raman Spectroscopy. Oral Presentation, 56th Electronic Materials Conference, Santa Barbara, CA, 2014.