



Michael L. Silver, Ph.D.

Technical Specialist

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As a technical specialist at the firm, Michael L. Silver, Ph.D. assists in prosecuting patents for clients in a variety of industries specifically related to electrical and software engineering. Michael has a strong background in optical and sensing technologies with applications ranging from defense and communications to biomedical devices.

Practices

- Patent Prosecution

Industries

- Electrical & Computer Technologies
- Nanotechnology

Background and Credentials

Prior to joining the firm, Michael focused his graduate research on building upconversion detection systems for use in quantum communications. While the majority of his graduate research was in nonlinear optics, he also assisted in developing computer architecture concepts using on-chip optical semiconductor devices.

Before graduate school, Michael worked at Harris Corporation where he developed optical systems for use in fiber based communications and lidar technologies. He also oversaw subcontractors for DARPA contracts and has worked very closely with both private and federal clientele.

At Duke University, Michael was a Pratt Research Fellow where he developed tunable external cavity lasers for atomic manipulation in quantum information systems. He was also awarded a National Science Foundation REU grant where he built neural circuits using hippocampal brain cells from mice.

Representative Experience

Michael has experience in a wide variety of electrical and computer technologies including:

- Optics & Photonics
- Semiconductor Devices
- Sensing Applications
- Electrophysiology
- Quantum Communications

Education

- Northwestern University (Ph.D.)
 - Electrical Engineering
- Duke University (B.S.)
 - Electrical and Computer Engineering

Publications and Presentations

2017

M. Silver, P. Manurkar, Yu-Ping Huang, et al., "Spectrally Multiplexed Upconversion Detection With C-Band Pump and Signal Wavelengths," IEEE Photonics Technology Letters 29(13), 1097-1100

2016

P. Manurkar, N. Jain, M. Silver, Y.-P. Huang, C. Langrock, M. M. Fejer, P. Kumar, and G. S. Kanter, "Multidimensional mode-separable frequency conversion for high-speed quantum communication," Optica 3, 1300-1307

2015

A. S. Kowligy, P. Manurkar, N. V. Corzo, V. G. Velez, M. Silver, R. P. Scott, S. J. B. Yoo, P. Kumar, G. S. Kanter, and Y.-P. Huang, "Quantum optical arbitrary waveform manipulation and measurement in real time," SPIE Photonics West 2015 (Invited paper), paper 9347-31.

2014

K. Smith, C. Visone, R. Glasser, M. Silver, L. Burberry, P. Wasilousky, "Optical sensing system with a phase sensitive amplifier and associated methods," U. S. Patent No. 8,912,475

2014

A. S. Kowligy, P. Manurkar, N. V. Corzo, V. G. Velez, M. Silver, R. P. Scott, S. J. B. Yoo, P. Kumar, G. S. Kanter and Y. -P. Huang, "Quantum optical arbitrary waveform manipulation and measurement in real time," Opt. Express 22, 27942-27957

2011

**P. Wasilousky, K Smith, R. Glasser, G. L. Burdge. L Burberry, B Deibner, M. Silver, et al.,
“Quantum enhancement of a coherent ladar receiver using phase-sensitive amplification,” Proc.
Of SPIE, 8163816305-01/816305-11**

Community and Professional Involvement

- United Sciences of Chicago
- March for Science Chicago (MFSCChi)
- Operating for Action (OFA)
- Institute of Electrical and Electronics Engineers Member (IEEE)
- The Optical Society Member (OSA)
- American Physical Society Member (APS)