
PROFILE

Over 30 years of experience in a broad range of cutting edge technologies ranging from High Speed Fiber Optic Transceivers, Micro-electro-mechanical systems (MEMs), Photonic sensors and devices, Radio Frequency and Low Noise Amplifier design, to printed electronics, conductive polymers, tamper protection of electronic data, and Internet of Things (IoT) devices. Experienced in leading numerous technical teams and new product developments as well as establishing research laboratories. Taught for the past nine years courses in physics, business, analog circuit design, and microcontrollers as both an adjunct and full-time professor. Enjoys teaching and mentoring.

AREAS OF TECHNICAL EXPERTISE

- Project management and team leading
- Analog circuits and PCB design
- Microcontrollers and Embedded Systems
- Mathematical modeling and statistical analysis
- Computer programming and data acquisition
- Entrepreneurship and New Venture Creation
- Anti-tamper technology, cryptography, and physical security of data
- Printed electronics technology and conductive inks and polymers
- RFID and smart packaging technology
- Physics of Surface Coils used for Magnetic Resonance Imaging (MRI)
- TeraHertz and millimeter Wave Imaging
- Low Noise Amplifier and RF Circuit Design
- High Speed test and measurement techniques
- Signal Integrity and High Data Rate Fiber Optic links
- Semiconductor Physics of Photonic and Optoelectronic/Integrated Optical Devices
- Design and Fabrication of Photonic based Micro Sensors and Devices
- Silicon based Micro-Electro Mechanical Systems (MEMS)
- Semiconductor processing of both Silicon and III-V compounds

PROFESSIONAL EXPERIENCE

University of Delaware, Newark, DE**February 2017 – now*****Associate Professor of Practice, Electrical and Computer Engineering Department***

- Teaching new hands-on design courses for sophomore and junior level ECE students.
- Helped set-up the maker space in the iSuite.
- Teaching CPEG222 (Microprocessor Systems), ELEG 309 (Electronic Circuit Analysis I) and ELEG 312 (Electronic Circuit Analysis II).

Resonate Forward LLC, Newark, DE**November 2017 – now*****Chief Technical Officer***

- Design and build microcontroller based devices that use vibration to alleviate freezing of gait and tremors in people with Parkinson's disease.
- Working with VCU to test a novel arm band and Michael J. Fox Foundation for a shoe that helps with freezing of gait.
- Participated in NSF i-Corp Program through the Horn Venture Development Center.

University of Delaware, Newark, DE**August 2011 – January 2017*****Adjunct Associate Professor, Electrical and Computer Engineering Department***

- Teaching ELEG 309 (Electronic Circuit Analysis I) and ELEG 312 (Electronic Circuit Analysis II).
- Prepared lecture notes and unique laboratories based on the Digilent Electronic Workbench hardware

Phase Sensitive Innovations Inc, Newark, DE**May 2007 – January 2017*****Founder and Chief Operating Officer***

- Co-founded new venture to develop distributed aperture millimeter wave imaging systems for military applications.
- Wrote proposal securing over \$10MM in grant money to seed the effort.
- Principal Investigator on four different SBIR programs.

Millersville University, Millersville, PA**September 2010 – May 2011*****Adjunct Lecturer, Physics Department***

- Taught evening undergraduate Physics laboratories for two semesters.

Lincoln University, Lincoln, PA**January 2009 – May 2009*****Adjunct Lecturer, Department of Business and Information Technology***

- Taught evening undergraduate course on *Entrepreneurial Finance*.
- Developed course notes, tests, and class projects.

University of Delaware, Newark, DE**September 2005 – Feb 2009*****Limited Term Researcher, Electrical and Computer Engineering Department***

- Design, simulate, fabricate and test active and passive nano-phonic devices using photonic band gap structures.
- Develop high performance photonic based sources and sensors for TeraHertz and millimeter wave imaging systems.
- Helped advice graduate students, direct research, and serve on research committees.

W.L Gore and Associates, Newark, DE**September 1996 – September 2005*****Senior Member of Technical Staff, Anti-tamper Technology,******July 2004 – Sept 2005***

- Lead the analysis of new technologies to be used for anti-tamper security enclosures that could meet FIPS 140-2 level 4 security requirements.
- Investigated printed electronics technology and inherently conductive polymers and their applicability to smart packaging and anti-tamper solutions.
- Experimented with conductive polymers including poly(3,4-ethylenedioxythiophene) (PEDOT) and polyaniline (Pani). Developed polymer with photo-definable conductivity.
- Set up laboratory for screen and inkjet printing of conductive inks and polymers.
- Developed miniature, low power (~ 1 uA current draw) electronic circuitry to enable tamper response.
- Tested efficacy of various physical security techniques to different types of attacks (both direct and indirect).

Senior Member of Technical Staff, Magnetic Resonance Imaging Technology,***Feb 2003 – June 2004***

- Designated as 1 of 13 Key Technologists globally within the Electronic Products Division of the Corporation.
- Set up new Research and Development Laboratory with data acquisition to enable the development and testing of new coil and amplifier designs.
- Developed technology for high sensitivity Surface Coil Arrays and Low Noise Amplifiers (LNA) for use in Magnetic Resonance Imaging (MRI).
- Prototyped light weight modular pick-up coils with integrated non-magnetic LNAs for high performance and rapid prototyping (patent pending).
- Extensive use of software to model the magnetic field interaction of multiple coils with laboratory measurements to corroborate theory.
- Designed and fabricated an LNA with extremely low Noise Figure (<0.15 dB) for use in 1.5 or 3 Tesla MRI systems using RF design techniques and S Parameter measurements.

Member of Technical Staff, nLighten™ Fiber Optic Links,***Sept. 1996 - Feb 2003***

- Responsible for the design of parallel VSR (Very Short Reach) Fiber Optic links with aggregate bandwidths of 10 – 40 Gbps.
- Led the setup of a state of the art Optics Research and Development Laboratory used to prototype and test high speed parallel optic fiber links and photonic devices.
- In charge of the design of the nLighten™ 2 (12 ch x 2.72 Gbps/ch) Fiber Optic Module leading and mentoring a small team of engineers.
- Led the prototyping of the world's smallest VSR 40 Gbps transceiver (in conjunction with Helix, AG) that was demonstrated at National Fiber Optic Engineers Conference (NFOEC 2002).
- Drove specifications for custom parallel integrated circuits and signal integrity issues in electrical packaging.
- Extensive modeling and characterization of VCSEL lasers and *p-i-n* photodiodes as well as link performance (Bit error rate testing, eye diagrams, receiver sensitivity, jitter, extinction ratio, etc...).
- Wrote most of the test software used to characterize and model module and device performance.

Jet Propulsion Laboratory (NASA), Pasadena, CA**April 1991 – August 1996****Member of Technical Staff, MEMS Technology Group, MicroDevices Section, Feb. 1995 - Aug. 1996**

- Research and development of bulk silicon micromachined micro-electro-mechanical systems (MEMS) within the Microdevices Laboratory.
- Designed and fabricated novel silicon based micro accelerometers and seismometers for terrestrial and planetary applications.
- Developed a 10 Hz resonant frequency seismometer using a bulk micromachined silicon spring for use as a seismometer. (*Patented*)
- Principal Investigator of a *Directors Research and Development Fund* for a Micro Laser Doppler Velocimeter using a semiconductor laser diode and silicon optical bench.

Visiting Researcher, Photonics Technology Group,**April 1991 - Jan. 1995**

- Visiting Researcher under a NASA Graduate Student Research Fellowship with the Photonics Group at the Microdevices Laboratory, JPL.
- Conducted research on single element and arrays of single-mode distributed feedback (DFB) laser diodes in InP, GaAs, and GaSb ($\lambda_0 \geq 2 \mu\text{m}$).
- Designed and fabricated electrically tunable multi-electrode DFB lasers and novel single-mode ridge devices relying on lateral coupling to a surface grating.
- Experienced in photonic device modeling, fabrication, and characterization.
- Set up device characterization system using GPIB and RS232 instruments in conjunction with LabView software.

Laser Communications Inc. Lancaster, PA**January 1987 – August 1989****Project Engineer**

- Designed, built, and maintained analog circuitry relating to laser atmospheric free space communication equipment.
- Project Engineer responsible for design, development, and testing of new color video / RS422 data product.

Tait Towers Lighting Inc. Lititz, PA / Nocturne Lighting Co. San Francisco, CA**Dec. 1984 – May 1987****Engineer**

- Designed and built microprocessor (Motorola 6502) controlled variable color stage lights for use on major concert tours including Bruce Springsteen and U2.
- Utilized microprocessor control design, assembly language programming with EPROM technology, stepper motors, and a specialized serial communications scheme.

EDUCATION**University of Delaware, Newark, DE**

Master of Business Administration (MBA) Program, Sept. 2004 – Jan 2007

3.88 GPA, New Venture Creation Concentration

Outstanding Marketing Student Award

Finalist, Business Plan Competition

International Case Competition (George Washington University) Team

Ph.D. in Electrical Engineering, January 1995.

Dissertation: "An InGaAs-GaAs-AlGaAs laterally-coupled distributed feedback ridge laser diode."

Advisors - Dr. Robert Hunsperger and Dr. Siamak Forouhar

Honors: 4.0 GPA

Awarded a NASA Graduate Student Research Fellowship.

Master of Electrical Engineering, May 1993.

Thesis: "A standing-wave surface-acoustic-wave Bragg acousto-optic device for communications."

Advisor - Dr. Robert Hunsperger

Millersville University of Pennsylvania, Millersville, PA

B.S. in Engineering Physics / Computer Science (Mathematics minor), May 1987.

Honors: Graduated Magna Cum Laude (3.69 GPA), John A. Van Horne Award for Applied

Physics, Sigma Pi Sigma (Honors Physics Society), and Dean's List.

PROFESSIONAL SKILLS

- Enjoy challenges, team work, and mentoring. Demonstrated ability to lead and manage projects and teams.
- Able to communicate well and comfortable in public speaking.
- Proficient in C, C++, LabView, Mathematica, Mathcad, Pspice, Agilent Advanced Design System (ADS), Eagleware Genesis, Remcon XFTDT (finite difference time domain), and various E & M software packages.
- Working knowledge of SAS, Aureka (patent mining software), Visual Basic, LabWindows, and MATLAB.
- Able to pick up new technologies quickly.
- Demonstrated ability to apply my engineering background to numerous fields in Graduate Research (fiber optics, waveguides, acousto-optics, laser design, micro-electro mechanical accelerometers, ...) and Industry (high speed and low power circuit design, high speed packaging parasitics, mutual inductance of two coils, free space optical links, ...).
- Good understanding of Semiconductor Physics.
- Strong math and modeling skills.
- Experienced in all aspects of semiconductor device design, modeling, fabrication, packaging and characterization - particularly silicon based MEMS and high performance lasers.
- Experience in RF Design and circuit modeling. Good background in microwave theory and amplifier design.
- Good understanding of classical optics, fiber optic links, system budgets, standards, testing, etc...
- Directed the design of numerous multi-GHz printed circuit board designs. Well schooled in Signal Integrity issues.
- Ability to take project from proposal to completion. Have used Kepner-Tregoe project management tools.
- Experienced with Network Analyzers, Spectrum Analyzers, Oscilloscopes, Time Domain Reflectometry (TDR), Pattern Generators, Bit Error Rate Testers, as well as automating Data Acquisition.
- Extensive experience in clean room environment including lithography, metallization, thermal oxidation, wet and dry chemical etching, chemical vapor deposition, anodic and direct wafer bonding.

PROFESSIONAL SOCIETIES (NOT ALL CURRENT)

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| • 18 year Member of the Institute of Electrical and Electronics Engineers (IEEE) | • Society of Physics Students ($\Sigma\Pi\Sigma$) |
| • IEEE Lasers and Electro-Optics Society (LEOS) | • Beta Gamma Sigma |
| • IEEE Microwave Theory and Techniques Society (MTT) | • Optical Society of America (OSA) |
| • IEEE Components Packaging and Manufacturing Technology Society (CPMT) | • The International Society for Optical Engineering (SPIE) |
| • International Microelectronics And Packaging Society (IMAPS) | • National Honor Society. |
| | • Sigma Pi Sigma |

ADDITIONAL PROFESSIONAL TRAINING

- National Science Foundation i-Core training for “lean launch” of start-ups.
- Trained in Dr. Thomas Gordon’s “Leader Effectiveness Training”.
- Internal courses on Design of Experimentation and Statistical Process Control.
- Internal Kepner-Tregoe project management training.
- Audited Microwave Circuit Principles course at University of Delaware in 1997.
- Attended a two day “High Speed Digital Design” course taught by Dr. Howard Johnson.
- Took (on tape) “Electromagnetic Compatibility and Signal Integrity” Course taught by the University of Missouri-Rolla faculty.
- Member of National Science Foundation Small Business Innovative Research (SBIR) Review Board, September 1994.
- Member of the NSF sponsored workshop for “Structured Design Methods for MEMS” Nov. 12-15., 1995 California Institute of Technology.

PATENTS

“Silicon micro-machined accelerometer/seismometer and method of making the same,” Richard D. Martin and W. Thomas Pike, United States Patent 6,196,067.

“Micro photonic particle sensor,” Chi Wu, Morteza Gharib, Siamak Forouhar, Darius Modarress, Michael E. Hoenk, Rick Martin, International Publication Number WO 01/38884 A1.

“Magnetic Resonance Coil Modules,” Neil Williams, Keith Levesque, and Richard Martin, Patent application number US2005/0073309 A1.

Christopher A. Schuetz, Richard D. Martin, Dennis W. Prather, and Thomas E. Dillon, “Method for controlling the phase of optical carriers in millimeter wave imaging systems using optical upconversion,” U.S. Patent No. 7,965,435.

Richard D. Martin, Christopher A. Schuetz, Dennis W. Prather, and Thomas E. Dillon, “Controlling the Phase of Optical Carriers,” U.S. Patent No. 8,159,737 B2.

Richard D. Martin, Christopher A. Schuetz, Dennis W. Prather, and Thomas E. Dillon, “Coherence Switching,” U.S. Patent No. 9,297,702 B2.

John Rabolt, Ingrid Aboff, Richard Martin, Bruce Chase, and Scott Jones, UD17-28, “Vibratory Device for Intervention of Symptoms in Patients with Parkinson’s Disease,” was filed in the U.S. Patent and Trademark Office on April 3, 2018, as U.S. Patent Application Serial No.: 62/651,751.

Ingrid Pretzer Aboff, Richard Martin, David Bruce Chase, Scott Jones, and John Rabolt, UD 19-14, “Improvements on PD Shoe,” was filed in the U.S. Patent and Trademark Office on December 12, 2018, as U.S. Patent Application Serial No.: 62/778,489.

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Y. Zhang, R. D. Martin, S. Shi, A.A. Wright, P. Yao, K. P. Shreve, D. G. Mackrides, C. E. Harrity, and D. W. Prather., “95-GHz Front-End Receiving Multichip Module on Multilayer LCP Substrate for Passive Millimeter-Wave Imaging,” in *IEEE Transactions on Components, Packaging and Manufacturing Technology*, vol. 8, no. 12, pp. 2180-2189, Dec. 2018. doi: 10.1109/TCPMT.2018.2805708

Y. Zhang, S. Shi, R. D. Martin, P. Yao, F. Wang and D. W. Prather, “Ultra-Wideband Vialess Microstrip Line-to-Stripline Transition in Multilayer LCP Substrate for *E*- and *W*-Band Applications,” in *IEEE Microwave and Wireless Components Letters*, vol. 27, no. 12, pp. 1101-1103, Dec. 2017. doi: 10.1109/LMWC.2017.2750400

Y. Zhang, F. Wang, S. Shi, R. D. Martin, P. Yao and D. W. Prather, “Ultra-Wideband Microstrip Line-to-Microstrip Line Transition in Multilayer LCP Substrate at Millimeter-Wave Frequencies,” in *IEEE Microwave and Wireless Components Letters*, vol. 27, no. 10, pp. 873-875, Oct. 2017. doi: 10.1109/LMWC.2017.2747125

Y. Zhang et al., “Packaging of High-Gain Multichip Module in Multilayer LCP Substrates at *W*-Band,” in *IEEE Transactions on Components, Packaging and Manufacturing Technology*, vol. 7, no. 10, pp. 1655-1662, Oct. 2017. doi: 10.1109/TCPMT.2017.2737550

Y. Zhang, S. Shi, R. D. Martin and D. W. Prather, “Broadband SIW-to-Waveguide Transition in Multilayer LCP Substrates at *W*-Band,” in *IEEE Microwave and Wireless Components Letters*, vol. 27, no. 3, pp. 224-226, March 2017. doi: 10.1109/LMWC.2017.2661716

Y. Zhang, S. Shi, R. D. Martin and D. W. Prather, “Slot-Coupled Directional Filters in Multilayer LCP Substrates at 95 GHz,” in *IEEE Transactions on Microwave Theory and Techniques*, vol. 65, no. 2, pp. 476-483, Feb. 2017. doi: 10.1109/TMTT.2016.2615929

Joseph N. Mait, Charles Harrity, Richard D. Martin, Christopher A. Schuetz, Shouyuan Shi, and Dennis W.

- Prather, "Minimum bias image processing with a distributed-aperture millimeter-wave imager," *Appl. Opt.* 56, A52-A61 (2017)
- Zhang, Y., Shi, S., Martin, R. D. and Prather, D. W. (2016), "Substrate integrated waveguide filter on LCP substrate at 94 GHz," *Microwave and Optical Technology Letters*, 58: 577–580. doi: 10.1002/mop.29621
- Y. Zhang, S. Shi, R. D. Martin and D. W. Prather, "High-Gain Linearly Tapered Antipodal Slot Antenna on LCP Substrate at E- and W-Bands," in *IEEE Antennas and Wireless Propagation Letters*, vol. 15, no. , pp. 1357-1360, 2016. doi: 10.1109/LAWP.2015.2508982
- Zhang, Y., Shi, S., Martin, R. D. and Prather, D. W. (2015), "Ultrawide band CBCPW to stripline vertical transition in multilayer LCP substrates," *Microwave and Optical Technology Letters*, 57: 1481–1484. doi: 10.1002/mop.29115
- J. N. Mait, C. A. Schuetz, R. D. Martin, S. Shi, and D. W. Prather, "Minimizing Bias in a Millimeter Wave Imager," in *Frontiers in Optics 2015*, OSA Technical Digest (online) (Optical Society of America, 2015), paper FW4G.2.
- Richard Martin, Christopher Schuetz, Thomas Dillon, Daniel Mackrides, Peng Yao, Kevin Shreve, Charles Harrity, Alicia Zablocki, Brock Overmiller, Petersen Curt, James Bonnett, Andrew Wright, John Wilson, Shouyaun Shi and Dennis Prather, "Optical up-conversion enables capture of millimeter-wave video with an IR camera," 13 August 2012, SPIE Newsroom. DOI: 10.1117/2.1201208.004406.
- Joseph N. Mait, Richard D. Martin, Christopher A. Schuetz, Dennis W. Prather, "Millimeter wave imaging with engineered point spread functions," *Opt. Eng.* 0001;51(9):091606-1-091606-9.
- Macario J, Yao P, Shi S, Zablocki A, Harrity C, Martin RD, Schuetz CA, Prather DW, "Full spectrum millimeter-wave modulation," *Opt Express*. 2012 Oct 8;20(21):23623-9. doi: 10.1364/OE.20.023623.
- Dennis W Prather, Shouyuan Shi, Janusz Murakowski, Garrett J Schneider, Ahmed Sharkawy, Caihua Chen, BingLin Miao and Richard Martin. "Self-collimation in photonic crystal structures: a new paradigm for applications and device development," *J. Phys. D: Appl. Phys.*, Volume 40 (2007) pp. 2635 – 2651,
- Richard Martin, Ahmed Sharkawy, and Eric Kelmelis, "Photonic crystals reduce the size of optical sensors," 15 November 2006, SPIE Newsroom. DOI: 10.1117/2.1200610.0413
- C. Mueller, M. N. Donhowe, S. P. Kilcoyne, T. D. Lowes, R. D. Martin, C. R. Theorin, "Gore nLIGHTEN™ Parallel Optical Modules," *Proc. SPIE Vol. 3946, Vertical-Cavity Surface-Emitting Lasers IV*, Kent D. Choquette; Chun Lei; Eds., May 2000, pp. 20-28.
- A. Ksendzov; R. D. Martin, D. Modarress, M. Gharib, "Miniature Illuminator for Laser Doppler Velocimeter Assembled on Micromachined Silicon Optical Bench," *Proc. SPIE Vol. 3878, Miniaturized Systems with Micro-Optics and MEMS*, M. E. Motamedi; Rolf Goering; Eds., Sept 1999, pp. 304 - 309.
- C. R. Theorin, S. P. Kilcoyne, F. H. Peters, R. D. Martin, and M. N. Donhowe, "Seamless migration to VCSEL-based Optical Data Links," (*Invited Paper*) *Proc. SPIE Volume 3003, Vertical-Cavity Surface-Emitting-Lasers*, Kent D. Choquette and Dennis G. Deppe, Eds., April 1997, pp. 120 - 130.
- R. D. Martin and W. T. Pike, "Silicon Micromachined Accelerometer/Seismometer," NASA New Technology Report No. 9487, Jan. 17, 1996. (*Patented*)
- R. D. Martin, S. Forouhar, S. Keo, R. J. Lang, R. G. Hunsperger, R. C. Tiberio and P. F. Chapman, "CW Performance of an InGaAs-GaAs-AlGaAs Laterally-Coupled Distributed Feedback (LC-DFB) Ridge Laser Diode," *Photonics Technology Letters*, Vol. 7, No. 3, pp. 244 - 246, March 1995.
- R. D. Martin, S. Forouhar, S. Keo, R. J. Lang, R. G. Hunsperger, R. C. Tiberio and P. F. Chapman, "InGaAs-GaAs-AlGaAs Laterally-Coupled Distributed Feedback (LC-DFB) Ridge Laser Diode," *Electronics Letters*, Vol.

30, No. 13, pp. 1058 - 1060, 23rd June 1994.

M. E. Hoenk, R. D. Martin and S. Forouhar, "Micro Laser Doppler Anemometer," NASA Tech Brief NPO-19538.

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Andrew A. Wright, Richard D. Martin, Christopher A. Schuetz, Shouyuan Shi, Yifei Zhang, Peng Yao, Kevin P. Shreve, Thomas E. Dillon, Daniel G. Mackrides, Charles E. Harrity, and Dennis W. Prather, "Module integration and amplifier design optimization for optically enabled passive millimeter-wave imaging," Proceedings of SPIE Vol. 8362, 83620A (2016)

C. A. Schuetz, R. D. Martin, C. Harrity and D. W. Prather, "Progress towards a "FLASH" imaging RADAR using RF photonics," 2016 IEEE Avionics and Vehicle Fiber-Optics and Photonics Conference (AVFOP), Long Beach, CA, 2016, pp. 187-188. doi: 10.1109/AVFOP.2016.7789928

C. A. Schuetz, R. D. Martin, J. Murakowski, G. Schneider, Shouyuan Shi and D. W. Prather, "Applications of photonics for spatial and spectral processing of microwave and millimeter-wave signals," 2015 IEEE Avionics and Vehicle Fiber-Optics and Photonics Conference (AVFOP), Santa Barbara, CA, 2015, pp. 54-55. doi: 10.1109/AVFOP.2015.7356625

Thomas E. Dillon, Christopher A. Schuetz, Richard D. Martin, Daniel G. Mackrides, Shouyuan Shi, Peng Yao, Kevin Shreve, Charles Harrity, Dennis W. Prather, "Passive, real-time millimeter wave imaging for degraded visual environment mitigation," Proc. SPIE 9471, Degraded Visual Environments: Enhanced, Synthetic, and External Vision Solutions 2015, 947103 (21 May 2015);

Richard D. Martin, Shouyuan Shi, Yifei Zhang, Andrew A. Wright, Peng Yao, Kevin P. Shreve, Christopher A. Schuetz, Thomas E. Dillon, Daniel G. Mackrides, Charles E. Harrity, and Dennis W. Prather, "Video rate passive millimeter-wave imager utilizing optical upconversion with improved size, weight, and power." Proceedings of SPIE Vol. 9462 (2015)

Stephen Kozacik, Aaron Paolini, James Bonnett, Charles Harrity, Daniel Mackrides, Thomas E. Dillon, Richard D. Martin, Christopher A. Schuetz, Eric Kelmelis, Dennis W. Prather, "Real-time image processing for passive mmW imagery," Proc. SPIE 9462, Passive and Active Millimeter-Wave Imaging XVIII, 94620L (19 May 2015).

Andrew Wright, Richard Martin, Fouad Kiamilev, Jian Bai, Kevin Shreve, Andrew Mercante, Yifei Zhang, Charles Harrity, Shouyuan Shi, Dennis W. Prather, "95 GHz SiGe LNA for Sparse Aperture mmW Imaging," presented at GOMACTech 2105 Conference, March 2015.

Shouyuan Shi, Christopher Schuetz, Rick Martin, et al., "System modeling of passive millimeter wave imager based on optical up-conversion", Proceedings of SPIE Vol. 8255, 82551O (2012)

R. D. Martin, C. A. Schuetz, T. E. Dillon, D. G. Mackrides, P. Yao, S. Shi, and D. W. Prather, "Design of a distributed aperture millimeter-wave imaging system for "see-through" imaging in rotary craft induced degraded visual environments," presented at SPIE Security + Defense, Prague. Czech Republic, September 19, 2011.

Daniel G. Mackrides, Christopher A. Schuetz, Richard D. Martin, Thomas E. Dillon, Peng Yao, and Dennis W. Prather, "Progress Toward a Video-Rate, Passive Millimeter-Wave Imager for Brownout Mitigation," Passive Millimeter-Wave Imaging Technology XIV. Proceedings of SPIE Vol. 8022, April 2011. [8022-02]

Schuetz, C.A.; Martin, R.D.; Dillon, T.E.; Shouyuan Shi; Prather, D.W.; "Optical techniques for multifunctional millimeter-wave imaging receivers," Photonics Conference (PHO), 2011 IEEE , vol., no., pp.823-824, 9-13 Oct. 2011

Joseph N. Mait, Richard D. Martin, Christopher A. Schuetz, et al., "Millimeter wave image processing through point spread function engineering", Proceedings of SPIE Vol. 7936, 79360K (2011)

Christopher A. Schuetz, E. Lee Stein, Jr., Jesse P. Samluk, Daniel G. Mackrides, John P. Wilson, Richard D. Martin, Thomas E. Dillon III, and Dennis W. Prather, "Studies of millimeter-wave phenomenology for helicopter

brownout mitigation,” Millimetre Wave and Terahertz Sensors and Technology, Proceedings of SPIE Vol. 7485 , September 2009. [7485-15]

Thomas E. Dillon III, Christopher A. Schuetz, Richard D. Martin, E. Lee Stein, Jr., Jesse P. Samluk, Daniel G. Mackrides, Mark Mirotznik; and Dennis W. Prather, “Experimental validation of a distributed aperture optical system for millimeter-wave imaging,” Millimetre Wave and Terahertz Sensors and Technology, Proceedings of SPIE Vol. 7485 , September 2009. [7485-16]

Richard D. Martin, Christopher A. Schuetz, Caihua Chen,; Thomas E. Dillon,; Jesse P. Samluk, E. Lee Stein, Jr., Mark Mirotznik, and Dennis W. Prather, “Design and performance of a distributed aperture millimeter-wave imaging system using optical upconversion,” Passive Millimeter-Wave Imaging Technology XII, Proceedings of SPIE Vol. 7309, April 2009. [7309-07]

E. Lee Stein, Jr., Christopher A. Schuetz, Richard D. Martin, Jesse P. Samluk, John P. Wilson, Daniel G. Mackrides, Dennis W. Prather, “Passive millimeter-wave cross polarization imaging and phenomenology,” Design and performance of a distributed aperture millimeter-wave imaging system using optical upconversion,” Passive Millimeter-Wave Imaging Technology XII, Proceedings of SPIE Vol. 7309, April 2009. [7309-01]

Caihua Chen, Christopher A. Schuetz, Richard D. Martin, Indraneil Biswas, Jesse P. Samluk, E. Lee Stein, Jr., Daniel G. MacKrides, Mark S. Mirotznik, and Dennis W. Prather, “Configuration optimization and performance analysis of distributed aperture optical system for millimeter-wave imaging,” Millimetre Wave and Terahertz Sensors and Technology, Proceedings of SPIE Vol. 7117 , September 2008. [7117-12]

Jesse P. Samluk, Christopher A. Schuetz, Richard D. Martin, E. Lee Stein, Jr., Daniel G. Mackrides, Caihua Chen, Peng Yao, Rownak Shireen, Julien Macario, and Dennis W. Prather, “94 GHz millimetre-wave imaging system implementing optical upconversion,” Millimetre Wave and Terahertz Sensors and Technology, Proceedings of SPIE Vol. 7117 , September 2008. [7117-29]

Jesse P. Samluk, Christopher A. Schuetz, Edwin L. Stein, Jr., Andrew Robbins, Richard D. Martin, Caihua Chen, and Dennis W. Prather, “Far field millimeter-wave imaging via optical upconversion,” Passive Millimeter-Wave Imaging Technology XI, Proceedings of SPIE Vol. 6948, March 2008.. [6948-03]

Richard D. Martin, Christopher A. Schuetz, Caihua Chen, Indraneil Biswas, Jesse P. Samluk, Edwin L. Stein, Jr., Mark S. Mirotznik, and Dennis W. Prather, “Two-dimensional snapshot distributed aperture millimeter-wave imaging using optical upconversion,” Passive Millimeter-Wave Imaging Technology XI, Proceedings of SPIE Vol. 6948, March 2008.

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Richard Martin, Ahmed Sharkawy, Caihua Chen, Binglin Miao, Eric J. Kelmelis, and Dennis W. Prather, ”A reconfigurable self-collimation-based photonic crystal switch in silicon,” Proc. SPIE 6475, 64750B (2007)

Richard Martin, Ahmed Sharkawy, John Humphrey, Eric J. Kelmelis, and Dennis W. Prather, “Integrated optical chemical sensor using a dispersion-guided photonic crystal structure,” Proc. SPIE 6322, 63220I (2006)

R. D. Martin, “Tamper Resistant Packaging for Securing Secret Information,” presented at IMAPS Topical Workshop and Tabletop Exhibition on Military, Aerospace, Space and Homeland Security - Packaging Issues and Applications (MASH 2005), Rancho Cordova, CA, May 2005.

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