

PIEPER, RON J.

Personal Data:

Current Rank: Associate Professor of Electrical Engineering

Birthplace: St. Louis, Missouri

Citizenship: United States

Security Clearance: Secret (1997-2003)

Office Address:

The University of Texas at Tyler

Department of Electrical Engineering

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Education:

Ph.D. Electrical and Computer Engineering, University of Iowa, 1984

M.S. Electrical and Computer Engineering, University of Wisconsin, 1979

M.S. Physics, University of Wisconsin, 1976

B.S. Physics, University of Missouri, St. Louis, 1974

Professional Experience:

The University of Texas at Tyler, Director of COSMOS¹, Fall 2007 –2012

The University of Texas at Tyler, Associate Professor of Electrical Engineering, 2003-Present

Naval Postgraduate School, Monterey CA, Visiting Associate Professor, 1995-2003

Naval Postgraduate School, Monterey CA,. Associate Professor, 1989-1995

Army Summer Faculty Fellowship (Center for Night Vision and Electro-Optics), Fort Belvoir VA, 1987

Virginia Tech, Blacksburg VA, Assistant Professor, 1985- 1988

University of Iowa, ECE Department, Visiting Assistant Professor, 1984-1985

University of Iowa, ECE Department, Research Assistant, 1983-1985

University of Iowa, ECE Department, Teaching Assistant, 1982-1983

University of Iowa, Physics Department, Teaching Assistant, 1981-1982

Process Characterization Engineer, MOSTEK Co., 1215 West Crosby Rd, Carrollton TX, 1979-1981

¹ Center for Organic Semiconductor Modeling and Simulation

University of Wisconsin, ECE Department, Teaching Assistant, 1977-1979

University of Wisconsin, Physics Department, Teaching Assistant, 1975- 1977

Professional Society Membership:

Member Optical Society of America (1984-2012), Senior Member (2012-present)

Senior Member, Optical Society of America, Member Advisory Network (June 2013 –present)

Senior Member, Institute of Electrical and Electronics Engineers (IEEE), 1986-Present

Member, American Society for Engineering Education (ASEE), 2005-2009, 2013-present

Member, Society of Photo-optical Instrumentation Engineers (SPIE), 1990-2012

Life Member, Society of Photo-optical Instrumentation Engineers (SPIE), 2012-present

Senior Member, Society of Photo-optical Instrumentation Engineers (SPIE), 2015-present

Member, Order of the Engineer, 2004-Present

Professional Engineer in the Commonwealth of VA, #020024

University of Texas, Graduate Faculty Membership, 2007-present

Professional Society Service:

Steering Committee Member for , South Eastern Symposium on System Theory (SSST), 2013

Steering Committee Member for , South Eastern Symposium on System Theory (SSST), 2012

Conference Chairman for, South Eastern Symposium on System Theory (SSST), 2010

Member Publication Committee, South Eastern Symposium on System Theory (SSST), 2009

Associate Editor, IEEE 41st SSST, 2008-2009

Associate Editor, IEEE 40th SSST, 2007-2008

Member Steering Committee, South Eastern Symposium on System Theory (SSST), 2007-present

Chairman IEEE Monterey Bay Subsection, 1992-1995

19th Southeastern Symposium on System Theory, chairman Session 30, 1986

34th Midwest Symposium on Circuits and Systems, chairman Session TA-9A, 1991

30th Southeastern Symposium on System Theory, chairman Session MP2-4, 1998

38th Southeastern Symposium on System Theory, chairman Session MA-1, 2006

38th Southeastern Symposium on System Theory, Session (Co-Chair) MB-1, 2006

40th Southeastern Symposium on System Theory, chairman Session MB1, 2008

Reviewer, Applied Optics

Reviewer: Optical Engineering

Reviewer: Journal of the Optical Society A

Reviewer: International Journal of Modeling (European spelling) and Simulation, Acta Press

Reviewer: IEEE Transactions on Education

Reviewer: IEEE Southeastern Symposium on System Theory

Reviewer ASEE (American Society of Engineering Education)

Refereed Journal Publications:

R.J. Pieper, C.Y. Peng, “ Binomial Sampling Charts Revisited with Graphical and Analytical Arguments”, IETE Journal of Education, DOI:10.1080/09747338.2015.1025864, Volume 57 :1 pp20-27, March (2015)

M Rudra , R. Pieper, “Memristor characteristics via an integration of drift and tunnel barrier models”, Electronics and Telecommunication Engineers (IETE Journal of Research), DOI: 10.1080/03772063.2015.1026851, & Volume 61, Issue 4, 2015 pages 440-443, Feb (2015)

M. Rudra, S. Gazabare, R. Pieper, “Predicting Limits For Memristor On-Off Resistances Consistent With Linear Drift Model,”Institute of Electronics and Telecommunication Engineers (IETE Journal of Research), Vol 60, dx.doi.org/10.1080/03772063.2014.890817, #1, pp 46-49, (2014)

W. T. Wondmagegn, N. T. Satyala, I Mejia-Silva, D. MaoH. J. Stiegler, M. A. Quevedo-Lopez, R. J. Pieper, and B. E. Gnade,” Experimental and modeling study of the capacitance-voltage characteristics of metal-insulator-semiconductor capacitor based on pentacene/parylene”, Thin Solid Films, 519, 4413-4418 (2011)

W. T. Wondmagegn, N. T. Satyala, H. J. Stiegler, M. A. Quevedo-Lopez, E. W. Forsythe, R. J. Pieper, and B. E. Gnade, “Simulation Based Performance Comparison of Transistors Designed Using Standard Photolithographic and Coarse Printing Design Specifications”, Thin Solid Films, 519, 1943-1949 (2011)

W. T. Wondmagegn, N. T. Satyala , R. J. Pieper, M. A. Quevedo-Lopez, S.Gowrisanker, H. N. Alshareef, H. J. Stiegler, and B. E. Gnade, “Impact of Semiconductor/Metal Interfaces on Contact Resistance and Operating Speed of Organic Thin Film Transistors”, Journal of Computational Electronics, Vol 10, pp144-153 (2011)

Wudyalew T. Wondamagegn and Ron J. Pieper, “ Simulations of Top-Contact Pentacene Thin Film Transistors”, *Journal of Computational Electronics*, Vol. 8, pp 19-24, (2009).

Ron Pieper, Deborah Koslover, and Ting-Chung Poon, “An exact solution for four-order acousto-optic Bragg diffraction with arbitrary initial conditions”, Applied Optics, Vol 48, No 7, pp 141-150, March (2008) .

Nikhil T. Satyala, R. J. Pieper, “A Unified Approach to Predicting Long and Short Term Capability Indices with Dependence on Manufacturing Target Bias” *International Journal of Quality, Statistics and Reliability*, Article ID 594793, 10 pages, Volume (2008).

- Ron J. Pieper and Sherif Michael, "Comprehensive Approach to Predicting freeze-out and exhaustion in uniform single impurity Semiconductors in Equilibrium", *IEEE Transactions on Education*, pp413-421 (2005)
- R. J. Pieper and A. D. Kraus," Design and Analysis of Double Stack Cold Plates Covering all Conditions of Asymmetric Heat Loading," American Association of Mechanical Engineers (ASME), Journal of Electronic Packaging (ASME), *Journal of Electronic Packaging*, Vol 120, pp. 296-301 (1998).
- R. J. Pieper and A. D. Kraus, "Cold Plates with Asymmetric Heat Loading," *International Journal of Microelectronics Packaging*, Vol. 1, pp. 115-129 (1998)
- R. J. Pieper and A. Nassopoulos, "The Eikonal Ray Equations in Optical Fibers," *IEEE Trans. on Education*, vol. 40, no. 2, pp. 139-143(1997)
- R. Pieper, A. Cooper, and G. Pelegris, "Passive Range Estimation Using Dual Baseline Triangulation," *Optical Engineering*, vol. 35, no. 3, pp. 685-692 (1996).
- R. J. Pieper, J. K. Richstein, T.-C. Poon, and D. J. Moore, "Real-Time Histogram Generation Using Active Optical Scanning," *Optics and Laser Technology*, vol. 28, no. 3, pp. 171—178 (1996).
- P. E. Pace, Stephen J. Ying, R. J. Pieper, and J. P. Powers, "Integrated Optical Sigma-Delta Modulators," *Optical Engineering*, vol. 35, no. 7, pp. 1826-1836 (1996)
- P. E. Pace, R. D. Walley, R. J. Pieper, and J. P. Powers, "5-Bit Guided-Wave SNS ADC Transfer Characteristics," *IEE Electronics Letters*, vol. 31, no. 21, pp. 1799-1800 (1995)
- .K. Pendergraft and R. Pieper, "An Exact Solution for a Reflection Coefficient in a Medium Having an Exponential Impedance Profile," *J. Acoustical Society*, vol. 94, no. 1, pp. 580-582 (1993).
- R. J. Pieper, K. Raj, and T.-C. Poon, "A Visibility Dependent Depth of Focus for Incoherent Sinusoidal Sources," *Applied Optics*, vol. 31, no. 7, pp. 977-986 (1992).
- B. D. Duncan, T.-C. Poon, and R. J. Pieper, "Real-Time Nonlinear Image Processing Using an Active Optical Scanning Technique," *Optics and Laser Technology*, vol. 23, no. 1, pp. 19-23 (1991).
- R. Pieper and T.-C. Poon, "Optical Transfer Functions for Defocused Two-Pupil Systems," *J. Modern Optics*, vol. 37, no. 12, pp. 2055-2072 (1990).
- R. Pieper and T.-C. Poon, "System Characterization and Apodized Acousto-Optic Bragg Cells," *J. Opt. Soc. Am. (A)*, vol. 7, pp. 1751-1758 (1990).
- R. Pieper, J. Park, and T.-C. Poon, "A Resolution Dependent Depth of Focus for an Incoherent System," *Applied. Optics*, vol. 27, no. 10, pp. 2040-204 (1988).
- A. Korpel and R. Pieper, "Educational Aspects of Simple Inexpensive Computers in Linear System Analysis," *IEEE Trans. On Education*, vol. E-30, no. 3, pp.151-156 (1987).
- R. Pieper, "A Heuristic Approach to Fiber Optics," *IEEE Trans. On Education*, vol. E-30, no. 2, pp. 77-82 (1987)

- R. Pieper, A. Korpel, and W. Hereman, "Theoretical Extension of the Acousto-Optic Bragg Regime Through the Hamming Apodization of the Sound Field," *J. Opt. Soc. Am.*, vol. 3, no. 10, pp. 1608-1619 (1986).
- R. Pieper and T.-C. Poon, "An Acousto-Optic FM Receiver Demonstrating Some Principles of Modern Signal Processing," *IEEE Trans. On Education*, vol. E-28, no. 1, pp. 11-17 (1985).
- R. Pieper and A. Korpel, "Eikonal Theory of Strong Acousto-Optic Interaction with Curved Wavefronts of Sound," *J. Opt. Soc. Am. A.*, vol. 2, no. 2, pp. 1435-1445 (1985).
- R. Pieper and A. Korpel, "A Comparison of Phased Array Bragg Cells Operating in the Second Order," *Applied Optics*, vol. 23, no. 17, pp. 2921-2934 (1984).
- R. Pieper and A. Korpel, "Image Processing for Extended Depth of Field," *Applied Optics*, vol. 22, no. 10, pp. 1449-1453 (1983)
- R. Pieper and A. Korpel, "A Matrix Formalism for the Analysis of Acousto-Optic Beam-Steering," *Applied Optics*, vol. 22, no. 24, pp. 4073-4081 (1983).
- G. H. Bearman, J. D. Earl, R. J. Pieper, H. H. Harris, and J. J. Leventhal, "Ionic Excitation in Low-Energy Charge-Transfer Collision between He₂ and Some Diatomic Molecules," *Physics Rev. A*, vol. 13, no. 5, pp. 1734-1742, (1976)

Refereed National/International Conferences with Proceedings:

- Ron J. Pieper and Wudyalew T Wondamagegn, "Introducing Angular Plane Wave Spectrum Concepts and Applications in an Undergraduate Communications Course", Presented at the ASEE Annual Conference, Proceedings Paper ID Paper ID #9393, Indianapolis Indiana, June 16 2014
- Nikhil Satyala, Wudyalew Wondmagegn, Ron Pieper and Michael Korn , "Simulation of copper phthalocyanine (CuPc)/fullerene (C60) heterojunction photovoltaic cell with and without electron transport layer (ETL)," MRS Society Proceedings, Volume 1212, *Organic Materials and Devices for Sustainable Energy Systems*, Editors Jiangeng Xue, Russell Holms, Barry Rand, Chihaya Adachi, ISBN 978-1-60511-185-8, p77-82, 2010
- Nikhil Satyala, Wudyalew Wondmagegn, Ron Pieper and Michael Korn , "Simulation of copper phthalocyanine (CuPc)/fullerene (C60) heterojunction photovoltaic cell with and without electron transport layer (ETL)," *Materials Research Society Symposium Proceedings 2009 Fall Conference*, Vol 1212, 1212-S08-18, 2010
- V. Puttagunata, W. T. Wondmagegn and R. J. Pieper, "Quasi static Modeling approach for Metal-Organic Semiconductor-Metal Devices," *Materials Research Society Symposium Proceedings Fall 2008 MRS Conference* , Vol. 1115, 1115-H08-40, 2009.

- W. T. Wondmagegn, and R. J. Pieper, "Impact of Gate Metal Work functions on the device performance of organic thin film transistors," *Materials Research Society Symposium Proceedings*, Vol. 1115, 1115-H05-71, 2009
- M. Shirvaikar, D. Beams and R. Pieper, "Back To Basics: A Student-Tutor Matching Program," *Proceedings of the American Society of Engineering Education Annual Conference, ASEE Annual Meeting*, Chicago, Illinois, June 2006
- Ron. J. Pieper and Sherif Michael. "An Exact Analysis for Freeze Out and Exhaustion in Single Impurity Semiconductors", *ASEE Annual Meeting*, Session 1793, Portland Oregon, June 2005
- Ron J. Pieper and Alfred W. Cooper, "Objective MRTD Measurements Based on the Visibility Model", *Aero-Sense, SPIE's 17th Annual International Symposium on Aerospace Defense Sensing, Simulation and Controls. : Special Session Systems: Design, Analysis, Modeling and Testing*, pp. 196- 201, Orlando Florida, April 21-25, 2003
- R. Pieper and S. Michael, "Analytic Tests for a Robust Numerical Algorithm for Predicting Semiconductor Freeze-out and Exhaustion," *Proceedings of the 2nd International Conference on Simulation, Modeling and Optimization (WSEAS)*, Skiathos, Greece, pp. 3661-3663, Sept.25-28, 2002
- R. Pieper and S. Michael, " Analytic Tests for a Robust Numerical Algorithm for Predicting Semiconductor Freeze-out and Exhaustion," *Recent Advances in Simulation, System Theory and System Engineering*, Editors: N.E. Mastorakis, V. V. Kluev, D. Koruga , ISBN 960-8052-70-X, WSEAS Press pp. 22-26, 2002
- R. Pieper, S. Michael and D. Reeves "Comparison of Analytic and Numerical Models with Commercially Available Simulation Tools for Prediction of Semiconductor Freeze-out and Exhaustion," Invited paper, *Proceedings of the 45 Midwest Symposium on Circuits and Systems*, Tulsa, Oklahoma, Vol I, pp. 40-43. Aug 5-7, 2002
- M. Celik, Y. Kenter, Alf Cooper, and Ron Pieper, "Aliasing effects in Thermal images of four-bar patterns below and above the Nyquist limit", *35th Asilomar Conference on Signals, Systems and Computers*, Pebble Beach CA, pp.1171-1174, Nov 2001
- Sherif Michael and Ron Pieper, " A VLSI Implementation of a Universal Programmable Low Sensitivity Sampled Data Filter", *IEEE International Symposium on Circuits and Systems*, Sydney Australia, pp. 674-677 Vol 4, May 6-9, 2001
- R. Pieper and Sherif Michael " Application of a Robust Algorithm for Predicting Freeze-out and Exhaustion Under a Variety of Nontrivial Conditions", *IEEE International Symposium on Circuits and Systems*, Sydney Australia, 477-480 Vol 2, May 6-9, 2001
- Ron Pieper, Clark Robertson, Nick DeLeo, and Paul Buczynski " A Missile Aim-Point Sensitivity Study Based on the Mosaic Simulation Package", tutorial section for *FIESTACROW 2001*, 19 pages, San Antonio Texas, April 23-25, 2001

- Ron Pieper and Sherif Michael, "A Robust Algorithm for Predicting Freeze out and Exhaustion Under Equilibrium Conditions", *The Second International Conference on Modeling and Simulation of Microsystems*, San Juan Puerto Rico, pp. 87-90, April 19-21, 1999
- R. J. Pieper, S. Michael, "Circuit Modeling to Predict the performance of force-cooled cold plates structures", ISCAS '99, Orlando Florida, *International Symposium on Circuits and Systems*, Volume: 6, pp. 105 -108, 1999
- B. Copeland, R. Pieper C. Robertson and F. Levien, "IR-Signature Dependent Effectiveness of Flare Countermeasures," *Advanced Technology Electronic Defense Systems (ATEDS) 1999 Symposium*, Monterey, CA, March 16-18, 1999
- M. S. Groen, C. Koc, A. W. Cooper, and R. J. Pieper, "A Second Generation Visibility Based Model for Objective/Subjective FLIR MRTD," *1996 Meeting of the IRIS Specialty Group on Passive Sensors*, Paper E2, Naval Postgraduate School, Monterey, CA, vol. 2, pp. 81-96, 1996
- R. J. Pieper and A. D. Kraus, "Cold Plates with Asymmetric Heat Loading, Part I: The Single Stack," *Advances in Electronic Packaging, EEP-Vol-2*, ASME, pp. 865-870, 1995.
- A. D. Kraus and R. J. Pieper, "Cold Plates with Asymmetric Heat Loading, Part II: The Double Stack," *Advances in Electronic Packaging, EEP-Vol-2*, ASME, pp. 871-876, 1995
- P. E. Pace, S. Ying, J. P. Powers, and R. J. Pieper, "Optical Analog-to-Digital Converters for High-Resolution Direct Digitization Antenna Signals," *Photonics Systems for Antenna Applications, PSAA-V*, pp. 412-416, 1995
- P. E. Pace, S. J. Ying, R. J. Pieper, and J. P. Powers, "Optical Sigma-Delta Modulators Using Fiber Lattice Filter Structures," *Asilomar 95*, vol. I, pp.103-107, 1995
- W. Abbot, III, R. Kay, and R. Pieper, "Performance Considerations for the Application of the Lossless Browse and Residual Model," *NASA's 1994 Space and Earth Science Data Compression Workshop*, pp. 43-54, April 1994
- R. J. Pieper and A. W. Cooper, "A Visibility Model for MRTD Prediction," *SPIE Infrared Imaging Systems: Design, Analysis, Modeling and Testing V*, vol. 2224, pp. 258-269, April 1994.
- R. J. Pieper, P. E. Pace, J. P. Powers, R. Van de Veire, C. C. Foster, R. Walley, and H. Yamakoshi, "Feasibility Demonstration of a High-Resolution Integrated Optical Analog-to-Digital Converter," *Photonics Systems for Antenna Applications, PSAA-I*, pp. 323-328, Jan. 1994
- T.-C. Poon and R. J. Pieper, "Real-Time Pattern Recognition by Joint-Fourier Transform Correlation," *SPIE Conference On Manufacturing Automation*, SPIE, vol. 1713, pp. 92-98, Aug. 1992
- R. Pieper and T.-C. Poon, "Frequency-Dependent Optical Beam Distortion Generated by Acousto-Optic Bragg Cells," *SPIE/SPEE Symposium on Electronic Imaging, Beam Deflection and Scanning Technologies*, SPIE, vol. 1454, pp. 324-335, Feb. 1991

- T.-C. Poon and R. J. Pieper, "Novel Approach to Real-Time Joint Fourier Transform Correlation," *15th Congress of the International Commission for Optics, Conference on Optics in Complex Systems*, Federal Republic of Germany, SPIE, vol. 1319, pp. 404-405, Aug. 1990.
- R. J. Pieper and T. C. Poon, "Defocused Optical Transfer Functions for Two-Pupil Systems," *15th Congress of the International Commission for Optics, Conference on Optics and Complex Systems*, Federal Republic of Germany, SPIE, vol. 1319, pp. 641, Aug. 1990.

National Conferences (presentation only without proceedings)

- W. Wondmagegn, I. Mejia , A., H. J. Stiegler, M. A. Quevedo-Lopez, R. J. Pieper, and B. E. Gnade "Performance Comparison of Thin Film Transistors Based Operational Amplifiers", 2014 Flexible & Printed Electronics Conference (Flex Tech Alliance) Phoenix Convention Center, Phoenix Arizona Track B, Feb 6, 2014
- W. Wondmagegn, R. Pieper, N. Satyala, D. Mao, M. Quevedo-Lopez, S. Gowrisanker, H. Stiegler, B. Gnade, "Modeling and Characterization of Ferroelectric Capacitors Based on Poly(vinylidene fluoride-trifluoroethylene)", presented *Materials Research Society (MRS) Symposium Conference, San Francisco April 2011*
- W. Wondmagegn, N. Satyala, H. Jia, M. Quevedo-Lopez, S. Gowrisanker, H. Alshareef, H. Stiegler, U. Bhansali, R. Pieper, B. Gnade, "Characterization of Charge Injection and Transport in Organic Light Emitting Diodes Based on NPB and Alq₃", presented *Materials Research Society (MRS) Symposium Conference, San Francisco April 2011*
- N. Satyala, V. Adusumilli, W. Wondmagegn and R. Pieper, "Simulation of PCBM n-channel Thin Film Transistor," *Flextech 2010: Flexible Electronics & Displays Conference, Phoenix AZ, February, 2010.*
- N. T. Satyala, W. T. Wondmagegn, R. J. Pieper, H. Stiegler, B. E. Gnade and M.A. Quevedo-Lopez, "Simulation Based Performance Comparison of Devices Designed Using Standard Photolithographic and Printing Design Specifications," *Flextech 2010: Flexible Electronics & Displays Conference, Phoenix AZ, February, 2010.*
- M. Korn, S. V. Adusumilli and R. Pieper, "Novel Bibenzo[b]thiophenes With Reduced Bandgaps as Determined by Density Functional Theory (DFT) Calculations," *Materials Research Society (MRS) Symposium Conference, San Francisco CA April 2010.*
- N. Satyala, W. Wondmagegn, R. Pieper, "Simulation modeling and comparison of Pentacene/C₆₀ based bilayer and stacked organic solar cells," *Spring Materials Research Society (MRS) Symposium Conference, (Session H14.28), San Francisco CA, April 2010.*
- Debbie Koslover and Ron Pieper, "Four Order Acousto-Optic Diffraction for Bragg Incident Light" at the *AMS/AMA Annual Meeting, Washington DC, Jan 2009*

- Nikhil Satyala, Wudyalew Wondmagegn and Ron Pieper, "Simulation of copper phthalocyanine (CuPc)/fullerene (C60) heterojunction photovoltaic cell with and without electron transport layer (ETL)," Presented at the Fall 2009 (Session S-8.18) Materials Research Society Conference, Boston, MA, December 2009.
- W. T. Wondmagegn, and R. J. Pieper, "Impact of Gate Metal Work functions on the device performance of organic thin film transistors", (session H-570), *Fall 2008 MRS Annual Meeting*, Boston, MA, December 1-5, 2008
- V. Puttagunata, W.T. Wondmagegn and R. J. Pieper, "Quasi static Modeling approach for Metal-Organic Semiconductor-Metal Devices", (session H840) *Fall 2008 MRS Annual Meeting*, Boston, MA, December 1-5, 2008
- R. J. Pieper, "Considerations Limiting the Resolution of Mach-Zehnder Based Analog to Digital Converters" *1998 Optical Society of America Annual Meeting*, Baltimore, MD, Oct. 1998
- K. Raj and R. J. Pieper, "Geometrical Interpretation for the Validity of the Paraxial Approximation," *Optical Society of America Annual Meeting*, Portland, OR, Sep. 1995.
- J. K. Richstein, R. J. Pieper, C.-M. Ho, A. Lee, and T.-C. Poon, "Real-Time Histogram Generation Via Laser Scanning," *Optical Society of America Annual Meeting*, Toronto, Oct. 1993.
- T.-C. Poon, R. J. Pieper, and S. Hirakawa, "Joint Fourier-Transform Correlation by Optical Heterodyning," *Optical Society of America Annual Meeting*, San Jose, CA, Oct. 1991.
- K. Raj, T.-C. Poon, and R. J. Pieper, "A Visibility Dependent Depth of Focus for Incoherent Sources," *Optical Society of America Annual Meeting*, Boston, MA, Oct. 1990.
- B. D. Duncan, T.-C. Poon, and R. J. Pieper, "Nonlinear Scanning Image Processing," *Optical Society of America Annual Meeting*, Boston, MA, Oct. 1990.
- R. Pieper and T.-C. Poon, "A System Characterization of the Hamming Apodized Acousto-Optic Bragg Cell," *Optical Society of America Annual Meeting*, Orlando, FL, Oct. 1989.
- R. Pieper, J. Park, and T.-C. Poon, "A Resolution Dependent Depth of Focus for an Incoherent System," *Optical Society of America Annual Meeting*, Rochester, NY, Oct. 1987.
- R. Pieper and A. Korpel, "Strong Acousto-Optic Diffraction by a Curved Sound Wavefront," *Optical Society of America Annual Meeting*, San Diego, Oct. 1984

Other Conferences (peer reviewed) with Proceedings:

- M. Rudra and R. Pieper, "Memristor Drift Model Based on Conservation of Mobile Vacancies" 45th IEEE Southeastern Symposium on System Theory, Waco TX, pp 12-16, March 2013,
- N. S. Pasupuleti, R. Pieper, W. Wondmagegn, A.L.Coogan, I. Mejia, A.-Villasenor, Manuel Quevedo-Lopez "Semi Empirical Cadmium Sulfide Transistor Model Combining Grain

- Defects and Semiconductor Thickness Variation”, 45th IEEE Southeastern Symposium on System Theory, Waco Texas, pp 6-11, March 2013
- Bikash Shrestha, Ron Pieper, Wudyalew Wondmagegn Duo Mao, Israel Mejia, Harvey Stiegler, Bruce E Gnade, Manuel Quevedo-Lopez, “A Practical Model to Analytically Characterize the Polarization Hysteresis of Ferroelectric Capacitor”, *Proceedings of the 44th IEEE Southeastern Symposium on System Theory*, pp 40-44, Jacksonville Florida, March 2012.
- Swetha Gazabare, Ron J. Pieper and Wudyalew Wondmagegn “*Observations on Frequency Sensitivity of Memristors*”, *Proceedings of 44th IEEE Southeastern Symposium on System Theory*, pp45-50, Jacksonville Florida, March 2012
- Joshua M. Jemegbe, Ron J. Pieper “*Performance Tests for a Micro-Integrator Algorithm which Reduces the Numerical Butterfly Effect in Time Evolving Nonlinear Systems*”, *Proceedings of the 44th IEEE Southeastern Symposium on System Theory*, pp 237-242, Jacksonville Florida, March 2012
- J. Sigdel, R. Pieper, W. Wondmagegn, V. Puttagunta and N. Satyala, "Fermi-Dirac Analysis and Simulation of an Organic Schottky Diode", Presented SouthEastCon Nashville Tennessee March 19, and in Conference Proceedings of the IEEE *SouthEastCon 2011*, p220-223, 2011
- Bikash Shrestha, Ron Pieper, Wudyalew Wondmagegn, Nikhil Satyala, "Modeling and Characterization for Polarization Hysteresis of Ferroelectric Polymers", Presented SouthEastCon Nashville Tennessee March 19, and in Proceedings of the IEEE *SouthEastCon 2011*, p450-454, 2011
- Swetha Gazabare, Nikhil Satyala, Wudyalew Wondmagegn and Ron J. Pieper, “Observations on Model Based Predictions for Memristor Power Dissipation”, Presented SouthEastCon Nashville Tennessee March 19, and in Proceedings of the *IEEE SouthEastCon 2011*, p224-227, March 2011
- Jiwan Sigdel, Vasu Puttagunta, Ron J. Pieper, Wudyalew T. Wondmagegn and Nikhil T. Satyala., “Quasi-static modeling of an organic Schottky diode with trapped charge,” 42nd IEEE Southeastern Symposium on System Theory, Tyler Texas,, T1A.1, pp. 253-257, March 2010.
- Ron J. . Pieper and Dan J. Blair, “A practical Solution to the numerical butterfly effect in chaotic systems for fast but memory limited computers”,42nd IEEE Southeastern Symposium on System Theory, Tyler Texas, 335-339, March 2010
- Nikhil Satyala, Ron Pieper and Wudyalew Wondmagegn,, “Simulation and Transient Analysis of Organic/Inorganic CMOS Inverter Circuit,” 41st IEEE Southeastern Symposium on System Theory, pp 324-329, Nashville Tenn., March 2009.

- R. Pieper D. Koslover and H. Ndwata, "Combining Phased Array Hamming Sound Apodization Techniques to Improve the Acousto-Optic Diffraction Bandwidth", 41st IEEE Southeastern Symposium on System Theory, page 311-316, Nashville Tenn., March 2009
- R. Pieper and N. Satyala, "Conditions for Gaussian Long Term Manufacturing Processes," 41st IEEE Southeastern Symposium on System Theory, Nashville, pp205-208, March 2009
- R. J. Pieper and Nikhil T. Satyala, "An improved Characterization for Predicting a Capability Index with Dependence on Manufacturing Target Bias", *40th IEEE Southeastern Symposium on System Theory*, New Orleans, pp. 113-117, March 2008
- Daniel Blair and R. J. Pieper "Observations on Message Transmission Using Rossler and Lorenz Chaos systems with PSPICE and MATLAB models", *40th IEEE Southeastern Symposium on System Theory*, pp. 69-73, March 2008
- Justin Fenley and R. Pieper, "A Quartic Solution Covering Freeze-out and Exhaustion Effects in P-Type compensated Semiconductors", *39th IEEE Southeastern Symposium on System Theory*, Macon Georgia, pp. 291-295, March 2007
- Niladri Bose, Mukul Shirvaikar and Ron Pieper, "A Real Time Automatic Sign Interpretation System for Operator Assistance", *38th IEEE Southeastern Symposium on System Theory*, Cookeville Tennessee, pp. 11-15, March 2006
- Ron J. Pieper and Justin Fenley, "A Quartic Solution Covering Freeze-out and Exhaustion Effects in Doubly Doped P-type Equilibrium Semiconductors", *38th IEEE Southeastern Symposium on System Theory*, Cookeville Tennessee, pp.142-146, March 2006
- R. Pieper, M. Shirvaikar, and J. Salvatierra, "A Transmission Line Model for Analysis of Thin Film Optical Filters" *38th IEEE Southeastern Symposium on System Theory*, Cookeville Tennessee, pp. 186-191, March 2006
- Sandeep Dattaprasaad, Ron Pieper, Mukul Shirvaikar "Restoration of Color Images Using Wavelets", *37th IEEE Southeastern Symposium on System Theory*, pp.447-451, March 2005.
- Ioannis Retsas, Ron Pieper, Roberto Cristi, "Watermark Recovery with a DCT Based Scheme Employing Nonuniform Imbedding", *34th IEEE Southeastern Symposium on System Theory*, pp. 157-161, March 2002.
- Ron Pieper, Sherif Michael, Derek Reeves, "Comparison of Analytic and Numerical Models with Commercially Available Tools for the Prediction of Semiconductor Freezeout and Exhaustion" *34th IEEE Southeastern Symposium on System Theory*, pp. 140-145, March 2002.
- R. Pieper and F. Dellsperger (Berne Inst. of Eng and Arch.) "Personal Computer Assisted Tutorial for Smith Charts", *33rd IEEE Southeastern Symposium on System Theory*, Ohio University, Athens Ohio, pp139-144, March 2001

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- M. K. Celik, P. Hays, and R. Pieper, "A Vector Model for Tonal Decomposition and Segmentation of Textures," *22nd IEEE Southeastern Symposium on System Theory*, Cookeville, TN, pp. 338-342, March 1990
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Significant Reports

- R. Pieper and M. Quevedo-Lopez. "Final Executive Report: Center for Organic Semiconductor Modeling and Simulation (COSMOS) 2007-2012" submitted 4/17/2013 to Dr. Eric Forsythe CIV (US), U.S. Army Research Laboratory, Adelphi MD, Contract W911NF-07, April 2013
- P. E. Pace, R. J. Pieper, and J. P. Powers, "High Resolution Direct Digitization of Optical Telemetry of Shipboard Antenna Signals," NPS Technical Report, NPS-EC-96-016, prepared for Space and Naval Warfare Systems Command, Dec. 1994.

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- R. Pieper, "A Review of Developments Which Impact Optical Automatic Target Recognition in FLIR Systems," Report DO 276, Sep. 1987.
- R. J. Pieper, "Bandwidth Analysis of Strong Interaction Acousto-Optic Devices", under advisor Professor Adrian Korpel, University of Iowa, 1984
- R. Pieper, "A Study of Stresses in Silicon", Master's Project under advisor Professor Henry Guckel, University of Wisconsin (Madison). May 1976

Other Publications

T.-C. Poon and R. Pieper, "An Optical FM Receiver," *Ham Radio*, pp. 53-56, Dec. 1983.

Honors and Awards

University of Texas at Tyler, Office of Sponsored Research, "Certificate of Appreciation", Signed by Dr. Arlene Horne (Associate Vice President for Research), Dr. Richard Osborne (Provost and Vice President of Academic Affairs) and Dr. Rodney Mabry (President of the University of Texas at Tyler), February 2008.

Graduate Faculty Membership, signed by Professor Donna Dickerson, Vice Provost and Dean of Graduate Studies, September 2007

Nominee, *Minnie Piper Award* for overall excellence in both teaching and scholarly achievement, 2007

"Best Professor of the Year in acknowledgement of a job well done" awarded by the University of Texas at Tyler, Engineering Student Association, for the academic year 2005-2006. Awarded April 2006

Naval Postgraduate School's, "Certificate of Recognition for Outstanding Instructional Performance in 2000", Signed by R. S. Elster (Provost and Academic Dean), and D. R. Ellison (RADM USN and NPS Superintendent). October 2000

Harry Lynde Bradley Department of Electrical Engineering at Virginia Polytechnic Institute, "Certificate of Distinction", (1985-1990), Signed by the Department of Electrical Engineering Department Head (at that time), Dr. Dan Hodge. May 1990

Graduated Magna-Cum Laude Bachelor of Science, Physics Degree, University of Missouri, St. Louis, 1974

Sponsored Research:

“year 5: Center for Organic Semiconductor Modeling and Simulation” -December 2010, Proposal worked out in collaboration with VP of research and UTD Professor Bruce Gnade at University of Texas at Dallas,. Sponsor Army Research Labs, **\$126,503(funded)**, Contract W911NF-07, December 2012

“Year 4: Center for Organic Semiconductor Modeling and Simulation” -December 2010, Proposal worked out in collaboration with VP of research and UTD Professor Bruce Gnade at University of Texas at Dallas,. Sponsor Army Research Labs, **\$775,000(funded)**, Contract W911NF-07, December 2011

“Year 3: Center for Organic Semiconductor Modeling and Simulation” -May 2009, Proposal worked out in collaboration with VP of research and UTD Professor Bruce Gnade at University of Texas at Dallas,. Sponsor Army Research Labs, **\$1,024,683 (funded)**, Contract W911NF-07, Sept 2010

“Year 2: Center for Organic Semiconductor Modeling and Simulation” -May 2009, Proposal worked out in collaboration with VP of research and UTD Professor Bruce Gnade at University of Texas at Dallas,. Sponsor Army Research Labs, **\$1,044,896 (funded)**, Contract W911NF-07,May 2009

“Year 1: Center for Organic Semiconductor Modeling and Simulation” -May 2009, Proposal worked out in collaboration with VP of research and UTD Professor Bruce Gnade at University of Texas at Dallas,. Sponsor Army Research Labs, **\$1,580,000 (funded)**, Contract W911NF-07,May 2008

“An Exact Mathematical Model for Freeze-Out and Exhaustion in Doubly Doped Semiconductors” , The University of Texas at Tyler Faculty Research Grant, Principal Investigator, Project led to two conference papers and support for a MS research project, **\$4900 (funded)**, d April 2004,

Under Graduate Research Mentoring –

Supported by Louis Stokes Alliances for Minority Participation (LSAMP)

Fabiano Srur, “A Revisit of Classical MOS Analysis: Circuit Based Heuristics Point to Accuracy Issues in Modeling”, Poster Presentation at the LSAMP Conference Fall 2006.

Javier Salvatierra, "Heuristic Analysis of thin film optical filters for Electrical Engineers via the T-line Model", summer 2005, Poster Presentation at the LSAMP Conference Fall 2005, student work also presented as a conference paper-SSST-March 2006

Masters Graduate Student Advising

Naga Surya Pasupuleti "Semi-Empirical Cadmium Sulfide Transistor Model Combining Grain Defects and Semiconductor Thickness Variation", MSEE, University of Texas at Tyler, May 2014

Mukesh Reddy Rudra, "Modeling of titanium Dioxide based memristors with integration of tunnel barrier transport and linear nonlinear drift mechanisms", MSEE, University of Texas at Tyler, May 2014

Bikash Shrestha, "Modeling Polarization and Capacitance Hysteresis of Ferroelectric Capacitors", MSEE, University of Texas at Tyler, May 2012.

Swetha Gazabare, "Investigation of the Electronic Properties of the Memristor Using One Dimensional Drift Models", MSEE, University of Texas at Tyler, May 2012.

Joshua M. Jemegbe, "Using a micro-integrator to eliminate the numerical butterfly effect in nonlinear chaotic partial differential equations", MSEE, University of Texas at Tyler, December 2011

Jiwan Sigdel, "Fermi-Dirac Analysis, Modeling and Simulation of an Organic Schottky Diode with Trapped Charge" MSEE, University of Texas at Tyler, December 2011

Vishnu Adusumilli, "N-Channel organic transistor modeling based on two-dimensional finite element device design and density functional theory," MSEE, University of Texas at Tyler, December 2009.

Hamisi Ndwata, "Combining Phased Array and Hamming Sound Apodization Techniques to Improve the Acousto-Optic Bandwidth", MSEE, University of Texas at Tyler, April 2009

Vasu Puttagunta, "Quasi-Static Modeling Approach for Metal Organic Semiconductor Metal Devices", MSEE, University of Texas at Tyler, April 2009

Daniel Blair, Master of Engineering, University of Texas at Tyler, "Observations on Modeling Chaotic Circuits and Systems with Applications to Secure Communications", Master of Engineering, University of Texas at Tyler, May 2008

Justin Fenley, "A Quartic Solution Covering Freeze-Out and Exhaustion Temperatures in Doubly-Doped Equilibrium Semiconductors", Master of Engineering, University of Texas at Tyler November 2007

- D. Reeves, "Comparison of analytic and numerical models with Commercially Available Simulation Tools for the Prediction of Semiconductor Regimes Freeze-out and Exhaustion" Master of Science in Electrical Engineering, Naval Postgraduate School, Sept 2002.
- Ioannis Retsas, "A DCT-based Image Watermarking Algorithm Robust to Cropping and Compression", Master of Science in Electrical Engineering, Naval Postgraduate School, March 2002
- Boon Lott, "Analysis Characterizing Countermeasure Effectiveness Based on Spirits Tests for the F/A-18E/F", (Secret) Master of Science in Electrical Engineering, Naval Postgraduate School, March 2002
- Mustafa Celik, "Measurements and Modeling Enhancements for the NPS Minimum Resolvable Temperature Difference Model, VISMODII" Master of Science in System Engineering, Naval Postgraduate School, Sept. 2001
- Yucel Kenter, "The NPS Virtual Thermal Image Processing Model", Master of Science in System Engineering, Naval Postgraduate School, Sept. 2001
- Nicholas C. DeLeo, "Infrared Missile Aim-Point Modeling, and Flare Countermeasure Effectiveness" Master Thesis, (Secret)., Naval Postgraduate School, June 2000
- Benjamin W. Copeland, "Comparing the MOSAIC and GTSIMS programs in the infrared signature reduction and countermeasure environment," Master's Thesis, (Secret). Naval Postgraduate School, September 1999
- Alejandro Rodriguez, "A simulation based study yielding a full characterization of the miss distance topological manifold for the F/A-18CD, varying range, angle, wet versus dry conditions and IR signature," Master's Thesis, (Secret).Naval Postgraduate School, September 1999
- Michael Demestihias,, "Simulations to predict the countermeasure effectiveness of pyrophoric type packets deployed from TALD aircraft," Master's Thesis , Naval Postgraduate School, September 1999.
- M.S. Groen, "Development and Validation of a Second Generation Visibility Model for Predicting Minimum Resolvable Temperature Difference for Thermal Imaging Systems, Master of Science in Electrical Engineering and M.S. Physics," Co-Advisor: A. Cooper. Naval Postgraduate School, Dec. 1995
- C. Koc, "Modeling and Experimental Testing for Future Development of the U.S. Army's Night Vision Electro-Optic FLIR 92 Model," Co-Advisor A. Cooper, M.S. System Engineering, Naval Postgraduate School, Dec. 1995.
- K. Muhs, "A Design and Performance Analysis for Hot Primary Heat Exchanger (HPX) using Numerical Analysis," M.S. Space Systems Engineering, Naval Postgraduate School, June 1995.

- J. D. Walley, "A Prototype Encoding Scheme for Electro-Optic Analog-to-Digital Converters," Master of Science in Electrical Engineering , Co-Advisor: P. Pace, Naval Postgraduate School ,June 1995.
- P. J. Reinagel, "Testing of a CMOS VLSI for Real-Time Opto-Electronic Two-Dimensional Histogram Generation," Master of Science in Electrical Engineering,, Co-Advisor: D. Fouts, Naval Postgraduate School, Mar. 1995.
- G. Pelegris, "A Triangulation Method for Passive Ranging," , Master of Science in Electrical Engineering and M.S. Physics, Co-Advisor: A. Cooper, Naval Postgraduate School, June 1994.
- J. Richstein, "VLSI Design of a two-dimensional Histogram Generation Circuit," Co-Advisor: D. Fouts, Master of Science in Electrical Engineering , Naval Postgraduate School, Dec. 1993
- W. Abbott, III, "A Simple, Low Overhead Data Compression Algorithm for Converting Lossy Compression Processes to Lossless," Master of Science in Electrical Engineering , Naval Postgraduate School, Dec. 1993.
- R. Kay, "A Comparison of Some of the Most Current Image Compression Methods," Master of Science in Electrical Engineering ,Naval Postgraduate School, June 1993.
- A. Nassapoulos, "The Three Dimensional Ray Trajectories of the WKB Optical Fiber Modes," Master of Science in Electrical Engineering , Naval Postgraduate School, March 1993.
- T. B. Tay, "Analysis of Free-Flooded Ring Transducers," , Master of Science in Electrical Engineering., Co-Advisors: S. R. Baker and O. B. Wilson, Naval Postgraduate School, March 1993
- R. N. C. Pinto, "Numerical Modeling of a Low Frequency Active Sonar Array," Master of Science in Electrical Engineering , Co-Advisors: S. R. Baker, and O. B. Wilson, Naval Postgraduate School, Jan. 1993
- R. Ugarte, "Modeling for Improved Minimum Resolvable Temperature Difference Measurements," Master of Science in Electrical Engineering, Naval Postgraduate School, Naval Postgraduate School, summer 1991.
- S. Hirakawa, "Temperature Determination Based on Dual Spectral Band Measurements of Photon Emittance," Master of Science in Electrical Engineering ,, summer 1991
- P. Hays, "A Vector Model for the Analysis and Tonal Decomposition of Textures," Master of Science in Electrical Engineering , Virginia Tech , Summer 1990.
- M. K. Celik, Virginia Tech., "Digital Image Segmentation Using Periodic Codings," Master of Science in Electrical Engineering, Summer 1988.
- K. Pendergraft, Virginia Tech, "Frequency Dependent Acoustic Transmission in Nonuniform Materials," Master of Science in Electrical Engineering, Summer 1988.

G. H. Hu, Virginia Tech, "Extending the Depth of Focus Using Digital Image Filtering," Master of Science in Electrical Engineering Spring 1987.