

Keith E. Holbert, Ph.D., P.E.
Director, Nuclear Power Generation Program
Associate Professor, School of Electrical, Computer and Energy Engineering

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EDUCATION

Ph.D.	Nuclear Engineering	University of Tennessee	1989
	Dissertation: <i>Comprehensive Signal Validation for Nuclear Power Plants</i> Advisor: Prof. B. R. Upadhyaya		
M.S.	Nuclear Engineering	University of Tennessee	1986
	Thesis: <i>Simplified Six-Point Discrete Fourier Transforms</i> Advisor: Prof. T. W. Kerlin Minor: Measurement and Control Engineering		
B.S.	Nuclear Engineering	University of Tennessee	1984

ACADEMIC EXPERIENCE

1995-Present	<i>Associate Professor</i>	Arizona State University
1997-2004	<i>Associate Chair for Undergraduate Studies</i>	
1989-1995	<i>Assistant Professor</i>	Electrical Engineering Department

Research: Published more than 200 refereed journal and conference papers. Have mentored a total of 39 Ph.D. and M.S. students to graduation. Active funded research projects from industrial and governmental sources. Director of the Radiation Damage Laboratory. Synergistic relationship between research, teaching and service.

Teaching: Co-author of two textbooks. College teaching excellence award; teaching consistently rated excellent by students. Honors College faculty. Faculty advisor for two separate undergraduate student teams placing first in national design competitions. Origination of seven graduate level courses and one undergraduate course, and instruction of twelve other existing undergraduate courses including Internet delivery and live television broadcast to local industry receiving sites.

Service: Founding Director of the Nuclear Power Generation program (2008-2015). Journal associate editor. Nuclear energy presentations to local organizations as well as television and radio interviews and testimony before the Arizona Legislature.

1988-89	<i>Graduate Research Assistant</i>	University of Tennessee
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Development of a comprehensive sensor validation system utilizing diverse signal processing modules in a parallel architecture for nuclear power plants per U.S. Department of Energy contract.

INDUSTRIAL EXPERIENCE

2004-2005 *Visiting Staff Member* Los Alamos National Laboratory

Research into radiation effects on instrumentation and electronics—a one-year sabbatical.

Fall 1996 *Faculty Sabbatical* Motorola, Space and Systems Technology Group

Investigation into spacecraft charging and single event effects in integrated circuits.

Summer 1991 *Faculty Research Appointment* Battelle, Pacific Northwest Laboratory

Conceptual design of a sensor validation circuit as part of an artificial intelligence based decision support system for operations and maintenance monitoring of a U.S. Marine Corps central heating plant.

1983-1988 *Field Test Engineer* Analysis and Measurement Services Corp.

Calibration and response time testing of temperature and pressure sensors using both in-situ and conventional methods, including tests in more than a dozen nuclear power plants. Collection and analysis of reactor noise data for response time, BWR core stability and other information. Employee training and short course preparation. *Quality Assurance Supervisor* in sole charge of maintenance and implementation of total company QA/QC program.

PRINCIPAL AREAS OF TEACHING AND RESEARCH

Teaching: nuclear power engineering, electric power plants, electrical circuits.

Research: process monitoring and diagnostics, noise analysis, sensor fault detection, and radiation effects.

PROFESSIONAL REGISTRATION

Registered Professional Engineer (nuclear) since 1997, Arizona license # 31191

HONORS AND AWARDS

Personal

ASEE Energy Conversion and Conservation Division, *Second Best Paper*, June 2016
Top 5% Teaching Award, Fulton Schools of Engineering, 2012
IEEE Transactions on Education Best Paper award for 2010
Guest Scientist, Los Alamos National Laboratory, 2005-2014
My website was selected as for the "100 Excellent Ivy League Open Courses for Engineers" (toponlineengineeringdegree.com/?page_id=55), May 2009
Honorable Mention Paper Award, ASEE Continuous Improvement in Engineering Education Conference, March 2008
Online Educational Database (<http://oedb.org/>) recognized my Electrical Networks website as one of the "Top 100 Open Courseware Projects", May 16, 2007
Outstanding Faculty Award, IEEE Phoenix Section, February 2007
Nominated for ASU *Last Lecture Series*, 2004
Special Chair Award "for Outstanding Leadership as Chairperson of the Student Activities Committee," IEEE Phoenix Section, 2003
Award from WISE (Women in Science and Engineering) Investments program, 2003
Appreciation Award for recruitment and retention of students, Engineering College, 2002
Nominated for ASU Associated Students *Centennial Professorship*, 2002
IEEE Recognition for service as Facilities Chair for Student Professional Awareness Conference (SPAC), 2002
Special Recognition Award from WISE program, 2002
Nominated by students for Engineering College *Faculty Teaching Award*, 2000
Member of Engineering College "Super Team" for *Boeing Educator Award* Nomination, 1996 and 1997
Teaching Excellence Award from the ASU College of Engineering, 1996-1997
Nominated for CEAS *Young Faculty Teaching Award*, 1992
Faculty Research Appointment at Westinghouse Hanford, 1991
Tau Beta Pi member (Tennessee Alpha, '84)
Department of Energy (DOE) Fellowship, 1985-1986
Institute of Nuclear Power Operations (INPO) Fellowship, 1984-1985
Best Paper Award at four different American Nuclear Society (ANS) Student Conferences (1984, 1985, 1988, 1989)
Phi Kappa Phi honor society member
Gamma Beta Phi honor society member
Phi Eta Sigma honor society member

Students Under My Direction

IEEE Phoenix Section AI Gross Student Scholarship, Samet Arda, 2015
Senior Design Prize, Four-Person Undergraduate Team, School of ECEE, Fall 2012
Senior Design Prize, Four-Person Undergraduate Team, School of ECEE, Fall 2011
Senior Design Prize, Three-Person Undergraduate Team, School of ECEE, Spring 2010
Senior Design Prize, Four-Person Undergraduate Team, School of ECEE, Fall 2009
Third Place, IEEE MicroMouse Competition, Region 6 Southwest Area, April 2008
Senior Design Prize, Four-Person Undergraduate Team, ASU EE Dept., Spring 2003
Second Place Paper Award, IEEE PES Summer Meeting, Rajeev Subramanian, 1996
First Place Paper Award, Western Regional ANS Student Conference, 1992
First Place Team in National ANS Student Design Competition, 1991
First Place Paper Award, Western Regional ANS Student Conference, 1991
First Place Team in National ANS Student Design Competition, 1990

RESEARCH CONTRACT, ENTREPRENEURIAL AND CONSULTING EXPERIENCE

Air Force Research Laboratory
Analysis and Measurement Services Corporation
Arizona Commerce Authority
Arizona Department of Environmental Quality
Arizona Disease Control Research Commission
Arizona Public Service Company
Continental Homes, Inc.
Defense Threat Reduction Agency
Department of Defense
Department of Energy
Desert Research Institute
Electric Power Research Institute
Energy Fuels Nuclear
General Dynamics
Honeywell
Legacy, Inc.
Los Alamos National Laboratory
Medtronic, Inc.; Micro-Rel Division
Motorola Inc., Government and Systems Technology Group
Motorola Inc., Semiconductor Products
NASA (National Aeronautics and Space Administration)
National Science Foundation
Nuclear Regulatory Commission
Office of Naval Research
Power Systems Engineering Research Center
Radiation Monitoring Devices, Inc.
Radiation Safety Engineering
Sandia National Laboratories
Salt River Project
Spectrum Astro Inc.
ST Microwave Corp.
White Electronic Designs

PATENTS

- L. T. Clark, K. C. Mohr, K. E. Holbert, "Total Ionizing Dose Radiation Hardening Using Reverse Body Bias Techniques," U.S. Patent 7,649,216, Jan. 19, 2010.

PUBLICATIONS

Books and Book Chapters

Textbooks

- B.1 R. L. Murray, K. E. Holbert, *Nuclear Energy: An Introduction to the Concepts, Systems, and Applications of Nuclear Processes*, Seventh Edition, Elsevier Butterworth-Heinemann, print book ISBN 978-0-12-416654-7, ebook ISBN 978-0-12-416636-3, 576 pages, 2014.
- Turkish translation by A. H. Yilmaz, A. Aydin, T. Bayram, S. Akkoyun, A. A. Billur, published by Nobel Akademik Yayıncılık, ISBN 978-605-320-174-8, 568 pages, 2015.
 - Japanese translation by T. Yano, H. Sekimoto, and H. Kato, published by Kodansya Company Ltd., ISBN 978-4061565432, 432 pages, 2015.
- B.2 G. G. Karady, K. E. Holbert, *Electrical Energy Conversion and Transport: An interactive computer-based approach*, Second Edition, IEEE Series on Power Engineering, Wiley Interscience, ISBN 978-0-470-93699-3, 854 pages, 2013.
- Chinese translation published by China Machine Press, ISBN 978-7-111-51553-1, 683 pages, 2016.
- B.3 G. G. Karady, K. E. Holbert, *Electrical Energy Conversion and Transport: An interactive computer-based approach*, IEEE Series on Power Engineering, Wiley Interscience, ISBN 0-471-47652-8, 712 pages, 2005.

Book Chapters

- B.4 W. Lepkowski, S. J. Wilk, M. R. Ghajar, M. Goryll, K. Holbert, B. Bakkaloglu, and T. J. Thornton, "Using CMOS-Compatible SOI MESFETs for Power Supply Management," *Extreme Environment Electronics*, CRC Press, 2013, pp. 723-732.
- B.5 K. E. Holbert, "Solar Thermal Electric Power Plants," *Handbook of Renewable Energy Technology*, edited by A. F. Zobaa and R. C. Bansal, World Scientific Publishing Co., 2011, Chapter 10, pp. 225-246, ISBN 978-981-4289-06-1.
- B.6 K. E. Holbert, D. Srinivasan, "Solar Energy Calculations," *Handbook of Renewable Energy Technology*, edited by A. F. Zobaa and R. C. Bansal, World Scientific Publishing Co., 2011, Chapter 8, pp. 189-204, ISBN 978-981-4289-06-1.
- B.7 **K. Lin**, K. E. Holbert, "Pressure Sensing Line Diagnostics in Nuclear Power Plants," *Nuclear Power*, P. V. Tsvetkov, Ed., Sciyo, Rijeka, Croatia, 2010, Chapter 7, pp. 97-122, ISBN 978-953-307-110-7.
- B.8 K. Holbert, M. Albu, F. Mihai, "Online Experimentation with a Spectrum Analyzer in a Signal Processing Virtual Laboratory," *Innovations 2004: World Innovations in Engineering Education and Research*, W. Aung, Ed., published by Begell House Publishing for International Network for Engineering Education and Research (iNEER), Chapter 19, pp. 201-213, ISBN 0-9741252-1-0.
- B.9 K. E. Holbert, A. S. Heger, "Calculus," *Encyclopedia of Electrical and Electronics Engineering*, J. G. Webster, Ed., vol. 2, Wiley & Sons, pp. 722-734, 1999.

PUBLICATIONS

Student and post-doctoral advisees in **bold** (e.g., Committee Chair); other significant mentoring to students in *italics*.

Refereed Archival Journal Articles

- J.1 L. Gao, K. Holbert, S. Yu, "Total Ionizing Dose Effects of Gamma-Ray Radiation on NbOx Based Selector Devices for Crossbar Array Memory," *IEEE Transactions on Nuclear Science*, in press.
- J.2 A. Mahmud, Y. Gonzalez-Velo, H. J. Barnaby, M. N. Kozicki, M. Mitkova, K. E. Holbert, M. Goryll, T. L. Alford, J. L. Taggart, W. Chen, "A Comparative Study on TID Influenced Lateral Diffusion of Group 11 Metals into Ge_xS_{1-x} and Ge_xSe_{1-x} Systems: A Flexible Radiation Sensor Development Perspective," *IEEE Transactions on Nuclear Science*, in press.
- J.3 **T. Zhang**, K. E. Holbert, E. B. Johnson, "Nuclear Weapon Yield, Type, and Spectrum Determination Using Thin Lithium-ion Batteries," *Progress in Nuclear Energy*, submitted.
- J.4 W. Chen, R. Fang, H. J. Barnaby, M. B. Balaban, Y. Gonzalez-Velo, J. L. Taggart, A. Mahmud, K. Holbert, A. H. Edwards, M. N. Kozicki, "Total-Ionizing-Dose Effects on Resistance Stability of Programmable Metallization Cell Based Memory and Selectors," *IEEE Transactions on Nuclear Science*, vol. 64, no. 1, January 2017, pp. 269-276.
- J.5 **A. Dutta**, K. E. Holbert, "Discrimination of Neutron-Gamma Ray Pulses with Pileup using Normalized Cross Correlation and Principal Component Analysis," *IEEE Transactions on Nuclear Science*, vol. 63, no. 6, December 2016, pp. 2764-2771.
- J.6 **B. C. Anderson**, K. E. Holbert, **H. Bowler**, "Design, Construction, and Modeling of a ²⁵²Cf Neutron Irradiator," *Science and Technology of Nuclear Installations*, vol. 2016, Article ID 9012747, 12 pp.
- J.7 **S. E. Arda**, K. E. Holbert, "Nonlinear Dynamic Modeling and Simulation of a Passively Cooled Small Modular Reactor," *Progress in Nuclear Energy*, vol. 91, August 2016, pp. 116-131.
- J.8 A. Mahmud, Y. Gonzalez-Velo, M. Saremi, H. J. Barnaby, M. N. Kozicki, K. E. Holbert, M. Mitkova, T. L. Alford, M. Goryll, W. Yu, D. Mahalanabis, W. Chen, N. Chamele, J. Taggart "Flexible Ag-ChG Radiation Sensors: Limit of Detection and Dynamic Range Optimization through Physical Design Tuning," *IEEE Transactions on Nuclear Science*, vol. 63, no. 4, August 2016, pp. 2137-2144.
- J.9 Y. Gonzalez-Velo, A. Mahmud, W. Chen, J. L. Taggart, H. J. Barnaby, M. N. Kozicki, M. Ailavajhala, K. E. Holbert, M. Mitkova, "Radiation Hardening by Process of CBRAM Resistance Switching Cells," *IEEE Transactions on Nuclear Science*, vol. 63, no. 4, August 2016, pp. 2145-2150.
- J.10 L. Clark, D. Patterson, C. Ramamurthy, K. Holbert, "An Embedded Microprocessor Radiation Hardened by Microarchitecture and Circuits," *IEEE Transactions on Computers*, vol. 65, no. 2, February 2016, pp. 382-395.
- J.11 L. T. Clark, K. E. Holbert, J. W. Adams, H. Navale, **B. C. Anderson**, "Evaluation of 1.5-T Cell Flash Memory Total Ionizing Dose Response," *IEEE Transactions on Nuclear Science*, vol. 62, no. 6, December 2015, pp. 2431-2439.
- J.12 W. Chen, H. J. Barnaby, M. N. Kozicki, A. H. Edwards, Y. Gonzalez-Velo, R. Fang, K. E. Holbert, S. Yu, W. Yu, "A Study of Gamma-Ray Exposure of Cu-SiO₂ Programmable Metallization Cells," *IEEE Transactions on Nuclear Science*, vol. 62, no. 6, December 2015, pp. 2404-2411.

- J.13 **S. E. Arda**, K. E. Holbert, "A Dynamic Model of a Passively Cooled Small Modular Reactor for Controller Design Purposes," *Nuclear Engineering and Design*, vol. 289, August 2015, pp. 218-230.
- J.14 E. B. Johnson, C. Whitney, K. E. Holbert, **T. Zhang**, **T. Stannard**, **A. Christie**, **P. Harper**, **B. Anderson**, J. F. Christian, "Activation Analysis Study on Li-Ion Batteries for Nuclear Forensic Applications," *Nuclear Instruments and Methods in Physics Research A*, vol. 784, June 2015, pp. 430-437.
- J.15 P. Dandamudi, A. Mahmud, Y. Gonzalez-Velo, M. N. Kozicki, H. J. Barnaby, B. Roos, T. L. Alford, M. Ailavajhala, M. Mitkova, K. E. Holbert, "Flexible Sensors Based on Radiation-Induced Diffusion of Ag in Chalcogenide Glass," *IEEE Transactions on Nuclear Science*, vol. 61, no. 6, December 2014, pp. 3432-3437.
- J.16 J. L. Taggart, Y. Gonzalez-Velo, D. Mahalanabis, A. Mahmud, H. J. Barnaby, M. N. Kozicki, K. E. Holbert, M. Mitkova, K. Wolf, E. Deionno, A. L. White, "Ionizing Radiation Effects on Nonvolatile Memory Properties of Programmable Metallization Cells," *IEEE Transactions on Nuclear Science*, vol. 61, no. 6, December 2014, pp. 2985-2990.
- J.17 P. Dandamudi, M. N. Kozicki, H. J. Barnaby, Y. Gonzalez-Velo, K. E. Holbert, "Total Ionizing Dose Tolerance of Ag-Ge₄₀S₆₀ based Programmable Metallization Cells," *IEEE Transactions on Nuclear Science*, vol. 61, no. 4, August 2014, pp. 1726-1731.
- J.18 K. E. Holbert, L. L. Grable, A. Overbay, B. Nzekwe, "FREEDM Precollege Programs: Inspiring Generation Y to Pursue Careers in the Electric Power Industry," *IEEE Transactions on Power Systems*, vol. 29, no. 4, July 2014, pp. 1888-1895.
- J.19 R. Fang, Y. Gonzalez Velo, W. Chen, K. E. Holbert, M. N. Kozicki, H. Barnaby, S. Yu, "Total Ionizing Dose Effect of γ -Ray Radiation on the Switching Characteristics and Filament Stability of HfOx Resistive Random Access Memory," *Applied Physics Letters*, vol. 104, no. 18, article 183507, 5 pp., May 2014.
- J.20 Y. Gonzalez-Velo, H. J. Barnaby, M. N. Kozicki, C. Gopalan, K. Holbert, "Total Ionizing Dose Retention Capability of Conductive Bridging Random Access Memory," *IEEE Electron Device Letters*, vol. 35, no. 2, February 2014, pp. 205-207.
- J.21 M. S. Ailavajhala, Y. Gonzalez-Velo, C. Poweleit, H. Barnaby, M. N. Kozicki, K. Holbert, D. P. Butt, M. Mitkova, "Gamma Radiation Induced Effects in Floppy and Rigid Ge-Containing Chalcogenide Thin Films," *Journal of Applied Physics*, vol. 115, no. 4, article 043502, 9 pp., Jan. 2014.
- J.22 Y. Gonzalez-Velo, H. J. Barnaby, M. N. Kozicki, P. Dandamudi, A. Chandran, K. E. Holbert, M. Mitkova, M. Ailavajhala, "Total-Ionizing-Dose Effects on the Resistance Switching Characteristics of Chalcogenide Programmable Metallization Cells," *IEEE Transactions on Nuclear Science*, vol. 60, no. 6, Dec. 2013, pp. 4563-4569.
- J.23 P. Dandamudi, M. N. Kozicki, H. J. Barnaby, Y. Gonzalez-Velo, M. Mitkova, K. E. Holbert, M. Ailavajhala, W. Yu, "Sensors Based on Radiation-Induced Diffusion of Silver in Germanium Selenide Glasses," *IEEE Transactions on Nuclear Science*, vol. 60, no. 6, Dec. 2013, pp. 4257-4264.
- J.24 A. R. Indluru; K. E Holbert, T. L Alford, "Gamma Radiation Effects on Indium-Zinc Oxide Thin-Film Transistors," *Thin Solid Films*, vol. 539, July 2013, pp. 342-344.
- J.25 E. B. Johnson, C. Whitney, X. J. Chen, C. J. Stapels, K. E. Holbert, **A. Kaczmarowski**, **T. Stannard**, J. F. Christian, "Li-Ion Batteries Used as Ubiquitous Neutron Sensors for Nuclear Forensics," *IEEE Transactions on Nuclear Science*, vol. 60, no. 2, April 2013, pp. 644-651.
- J.26 **T. Zhang**, K. E. Holbert, "Frequency Domain Comparison of Multi-lump and Distributed Parameter Models for Pressurized Water Reactor Cores," *American Journal of Energy Research*, vol. 1, no. 1, pp. 17-24, March 2013.
- J.27 Y. Gonzalez-Velo, H. J. Barnaby, A. Chandran, D. R. Oleksy, P. Dandamudi, M. N. Kozicki, K. E. Holbert, M. Mitkova, M. Ailavajhala, P. Chen, "Effects of Cobalt-60 Gamma-

- Rays on Ge-Se Chalcogenide Glasses and Ag/Ge-Se Test Structures," *IEEE Transactions on Nuclear Science*, vol. 59, no. 6, pp. 3093-3100, Dec. 2012.
- J.28 K. E. Holbert, **K. Lin**, "Nuclear Power Plant Instrumentation Fault Detection Using Fuzzy Logic," *Science and Technology of Nuclear Installations*, vol. 2012, Article ID 421070, 11 pages, September 2012.
- J.29 S. Chellappa, L. T. Clark, K. E. Holbert, "A 90-nm Radiation Hardened Clock Spine," *IEEE Transactions on Nuclear Science*, vol. 59, no. 4, pp. 1020-1026, August 2012.
- J.30 L. T. Clark, D. W. Patterson, N. D. Hindman, K. E. Holbert, S. Maurya, S. M. Guertin, "A Dual Mode Redundant Approach for Microprocessor Soft Error Hardness," *IEEE Transactions on Nuclear Science*, vol. 58, no. 6, pp. 3018-3025, December 2011.
- J.31 N. D. Hindman, L. T. Clark, D. W. Patterson, K. E. Holbert, "Fully Automated, Testable Design of Fine-grained Triple Mode Redundant Logic," *IEEE Transactions on Nuclear Science*, vol. 58, no. 6, pp. 3046-3052, December 2011.
- J.32 **W. Xin**, K. E. Holbert, L. T. Clark, "Single Event Upset Mitigation Techniques for FPGAs Utilized in Nuclear Power Plant Digital Instrumentation and Control," *Nuclear Engineering and Design*, vol. 241, no. 8, pp. 3317-3324, August 2011.
- J.33 I. S. Esqueda, H. J. Barnaby, K. E. Holbert, Y. Boulghassoul, "Modeling Inter-Device Leakage in 90 nm Bulk CMOS Devices," *IEEE Transactions on Nuclear Science*, vol. 58, no. 3, pp. 793-799, June 2011.
- J.34 **** E. H. Lee**, A. Indluru, D. R. Allee, L. T. Clark, K. E. Holbert, T. L. Alford, "Effects of Gamma Irradiation and Electrical Stress on a-Si:H Thin-Film Transistors for Flexible Electronics and Displays," *IEEE Journal of Display Technology*, vol. 7, no. 6, pp. 325-329, June 2011. (** Invited paper)
- J.35 I. S. Esqueda, H. J. Barnaby, K. E. Holbert, F. El-Mamouni, R. D. Schrimpf, "Modeling of Ionizing Radiation-Induced Degradation in Multiple Gate Field Effect Transistors," *IEEE Transactions on Nuclear Science*, vol. 58, no. 2, pp. 499-505, April 2011.
- J.36 G. J. Schlenvogt, H. J. Barnaby, I. Sanchez Esqueda, K. E. Holbert, J. Wilkinson, S. Morrison, L. Tyler, "Failure Analysis and Radiation Enabled Circuit Simulation of a Dual Charge Pump Circuit," *IEEE Transactions on Nuclear Science*, vol. 57, no. 6, pp. 3609-3614, December 2010.
- J.37 X. Yao, L. T. Clark, D. W. Patterson, K. E. Holbert, "A 90 nm Bulk CMOS Radiation Hardened by Design Cache Memory," *IEEE Transactions on Nuclear Science*, vol. 57, no. 4, pp. 2089-2097, August 2010.
- J.38 **K. Lin**, K. E. Holbert, "Void Diagnostics in Liquid-filled Pressure Sensing Lines," *Progress in Nuclear Energy*, vol. 52, no. 5, pp. 503-511, July 2010.
- J.39 X. Yao, L. T. Clark, S. Chellappa, K. E. Holbert, N. D. Hindman, "Design and Experimental Validation of Radiation Hardened by Design SRAM Cells," *IEEE Transactions on Nuclear Science*, vol. 57, no. 1, pp. 258-265, February 2010.
- J.40 L. T. Clark, K. E. Nielsen, K. E. Holbert, "Radiation Hardened By Design Digital I/O for High SEE and TID Immunity," *IEEE Transactions on Nuclear Science*, vol. 56, no. 6, pp. 3408-3414, December 2009.
- J.41 X. J. Chen, H. J. Barnaby, P. Adell, R. L. Pease, B. Vermeire, K. E. Holbert, "Modeling the Dose Rate Response and the Effects of Hydrogen in Bipolar Technologies," *IEEE Transactions on Nuclear Science*, vol. 56, no. 6, pp. 3196-3202, December 2009.
- J.42 D. R. Hughart, R. D. Schrimpf, D. M. Fleetwood, X. J. Chen, H. J. Barnaby, K. E. Holbert, R. L. Pease, D. G. Platteter, B. R. Tuttle, and S. T. Pantelides, "The Effects of Aging and Hydrogen on the Radiation Response of Gated Lateral PNP Bipolar Transistors," *IEEE Transactions on Nuclear Science*, vol. 56, no. 6, pp. 3361-3366, December 2009.
- J.43 K. E. Holbert, G. G. Karady, **S. G. Adhikari**, M. L. Dyer, "Magnetic Fields Produced by Underground Residential Distribution System," *IEEE Transactions on Power Delivery*, vol. 24, no. 3, pp. 1616-1622, July 2009.

- J.44 **K. Lin**, K. E. Holbert, "Applying the Equivalent Pi Circuit to the Modeling of Hydraulic Pressurized Lines," *Mathematics and Computers in Simulation*, vol. 79, no. 7, pp. 2064-2075, March 2009.
- J.45 ** K. E. Holbert, G. G. Karady, "Strategies, Challenges and Prospects for Active Learning in the Computer-Based Classroom," *IEEE Transactions on Education*, vol. 52, no. 1, pp. 31-38, Feb. 2009. (** Best paper award)
- J.46 **K. Lin**, K. E. Holbert, "Blockage Diagnostics for Nuclear Power Plant Pressure Transmitter Sensing Lines," *Nuclear Engineering and Design*, vol. 239, no. 2, pp. 365-372, February 2009.
- J.47 K. E. Holbert, A. S. Heger, **D. M. Geschke**, **R. M. Stewart**, "Prediction of Corning InfiniCor 300 Optical Fiber Attenuation at Low Gamma Dose Rates," *IEEE Transactions on Nuclear Science*, vol. 55, no. 6, pp. 3515-3522, December 2008.
- J.48 X. J. Chen, H. J. Barnaby, B. Vermeire, K. E. Holbert, D. Wright, R. L. Pease, R. D. Schrimpf, D. M. Fleetwood, S. T. Pantelides, M. R. Shaneyfelt, P. Adell, "Post-Irradiation Annealing Mechanisms of Defects Generated in Hydrogenated Bipolar Oxides," *IEEE Transactions on Nuclear Science*, vol. 55, no. 6, pp. 3032-3038, December 2008.
- J.49 R. L. Pease, P. C. Adell, B. G. Rax, X. J. Chen, H. J. Barnaby, K. E. Holbert, H. P. Hjalmarson, "The Effects of Hydrogen on the Enhanced Low Dose Rate Sensitivity (ELDRS) of Bipolar Linear Circuits," *IEEE Transactions on Nuclear Science*, vol. 55, no. 6, pp. 3169-3173, December 2008.
- J.50 X. Yao, N. Hindman, L. T. Clark, K. E. Holbert, D. R. Alexander, W. M. Shedd, "The Impact of Total Ionizing Dose on Unhardened SRAM Cell Margins," *IEEE Transactions on Nuclear Science*, vol. 55, no. 6, pp. 3280-3287, December 2008.
- J.51 **V. Ananthanarayanan**, K. E. Holbert, "Power System Sensor Failure Detection, Isolation and Characterization Using Fuzzy Logic," *International Journal of Engineering Intelligent Systems for Electrical Engineering and Communications*, vol. 16, no. 3, pp. 165-176, September 2008.
- J.52 K. E. Holbert, S. S. McCreedy, A. S. Heger, "Performance of Commercial Off-the-Shelf Sensors in a Pulsed Reactor Simulation of the Hostile Environment," *Journal of Radiation Effects, Research and Engineering*, vol. 17, no. 1-A, pp. 1-22, 2008.
- J.53 K. C. Mohr, L. T. Clark, K. E. Holbert, "A 130-nm RHBD SRAM With High Speed SET and Area Efficient TID Mitigation," *IEEE Transactions on Nuclear Science*, vol. 54, no. 6, pp. 2092-2099, Dec. 2007.
- J.54 L. T. Clark, K. C. Mohr, K. E. Holbert, X. Yao, J. Knudsen, H. Shah, "Optimizing Radiation Hard by Design SRAM Cells," *IEEE Transactions on Nuclear Science*, vol. 54, no. 6, pp. 2028-2036, Dec. 2007.
- J.55 M. McLain, H. J. Barnaby, K. E. Holbert, R. D. Schrimpf, H. Shah, A. Amort, M. Baze, J. Wert, "Enhanced TID Susceptibility in Sub-100 nm Bulk CMOS I/O Transistors and Circuits," *IEEE Transactions on Nuclear Science*, vol. 54, no. 6, pp. 2210-2217, Dec. 2007.
- J.56 X. J. Chen, H. J. Barnaby, B. Vermeire, K. Holbert, D. Wright, R. L. Pease, G. Dunham, D. G. Platteter, J. Seiler, S. McClure, P. Adell, "Mechanisms of Enhanced Radiation-Induced Degradation Due to Excess Molecular Hydrogen in Bipolar Oxides," *IEEE Transactions on Nuclear Science*, vol. 54, no. 6, pp. 1913-1919, Dec. 2007.
- J.57 K. Park, M. Canonico, G. K. Celler, M. Seacrist, J. Chan, J. Gelpy, K. E. Holbert, S. Nakagawa, M. Tajima, D. K. Schroder, "Effects of High-Temperature Anneals and ⁶⁰Co Gamma-ray Irradiation on Strained Silicon on Insulator," *Journal of Applied Physics*, vol. 102, 074507, Oct. 2007.
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