

RESUME

NAME: Andreas A. Neuber

TITLE: AT&T Distinguished Professor of Electrical and Computer Engineering
Associate Director, Ctr. for Pulsed Power & Power Electronics

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Lubbock, Texas 79409, Ph.: (806) 742-1250, FAX: (806) 742-1281
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EDUCATION: Dr.-Eng. ME, Technical University of Darmstadt, Germany, 1996
Dipl. Phys. (M.S. Physics), Technical University of Darmstadt, Germany, 1990

PROFESSIONAL: Fellow of the Institute of Electrical and Electronics Engineers (IEEE)
Within IEEE Member of:
Dielectrics and Electrical Insulation Society, Nuclear and Plasma Science Society
Member of the Optical Society of America (OSA)
Member of the American Society for Engineering Education (ASEE)
Member of the German Society of Physics (DPG)
Member of the International Society of Explosives Engineers (ISEE)
Professional Engineer, licensed in Texas since January 31st, 2003.

EMPLOYMENT:

Distinguished AT&T Professor of E&CE, Texas Tech University	Sept. 2011
Professor, Texas Tech University, Lubbock, TX	Sept. 2008
Associate Professor, Texas Tech University, Lubbock, TX	Sept. 2003 - Aug. 2008
Assistant Professor, Texas Tech University, Lubbock, TX	Jan. 2000 - Aug. 2003
Research Assistant Professor, Texas Tech University, Lubbock, Texas	1998-1999
Visiting Assistant Professor, Texas Tech University, Lubbock, Texas	1997-1998
Post Doc. Research Assoc., Texas Tech University, Lubbock, Texas	1996-1997
Senior Researcher, Technical University of Darmstadt, Germany	1990-1996

EXPERTISE: Dielectric Surface Flashover in Vacuum and Atmospheric Pressure, High Power Microwave Breakdown, Pulsed Power Technology, Gas Discharges, Explosive-Driven Pulsed Power, High Voltage and High Current Design, Optical Emission Spectroscopy, Non-linear Laser Spectroscopy.

CONSULTING: Shearers of Lubbock, 2012 - present
MicroZAP, 2010 - present
HEM Technologies, 2010 - present
External Readiness Review Member for the DOE through Los Alamos, 2003 – 2011
Gas processing for Lynntech, Inc., 2007
Computational and Analysis Work for Microwave Sciences, 2002 – 2003.
Member External Review Committee, IGC-Superpower, Schenectady, NY, 2002.
CRDF review panel member, 2002 - present
RF Discharge for Lighting for Federal Mogul, 2001-2002.
Fault Current Limiter Failure Assessment, for Los Alamos National Laboratory, 2001.
HPM Pulsed Power Technology for FMV, Sweden, 2000

SPONSORED RESEARCH: Research Funds: 70 grant proposals written with 34 grants funded totaling a \$8.3 M share of \$22.8 M total with \$6.4 M generated F&A Costs.

AWARDS/HONORS:

- Fellow of the Institute of Electrical and Electronics Engineers, 2012
- IEEE William Dunbar Award for “*Continuing Contributions to High Voltage Research, Technology, and Engineering Education*”, 2010
- Outstanding Researcher, 2009, College of Engineering, Texas Tech University
- Whitacre Research Award 2008, COE, Texas Tech University
- 24 invited presentations at workshops and conferences
- 3 invited contributions to refereed journals, 2 plenary presentations

AWARDS/HONORS (ctd.):

- Medal for “*outstanding contribution to the high energy density physics and for promotion of international cooperation*”, Novosibirsk, Russia, 2008
- Cum Laude Doctorate

MISC: Professional Engineer (#91312) licensed in Texas and

Fellow of the Institute of Electrical and Electronics Engineers (IEEE).

INVITED/ PLENARY PRESENTATIONS:

1. “*Stand-Alone Pulsed Power Generator for HPM Generation*,” International Conference on Plasma Science, Edinburgh, Scotland, July 8-12, 2012
2. “*Pulsed Power Technology*”, CI workshop, FBI, Dallas, TX, 2012
3. “*Compact Pulsed Power – Dielectric Breakdown*,” GE Global Research Center, Niskayuna, NY, 2011
4. “*High Power Microwaves – Issues and Challenges*”, Penn State University, 2011
5. “*Pulsed Power*”, L3 Industries, Williamsport, PA, 2011
6. “*Energy Storage Technology*,” Pulsed Power School 2010, Mianyang, China, June 2010
7. “*Compact Pulsed Power*,” Pulsed Power School 2010, Mianyang, China, June 2010
8. “*Surface Flashover*,” Pulsed Power School 2010, Mianyang, China, July 2010
9. “*Shortpulse Breakdown*,” Pulsed Power School 2010, Mianyang, China, July 2010
10. “*COMSED 1 – A Compact, Gigawatt Class Microwave Source Utilizing Helical Flux Compression Generator Based Pulsed Power*,” 2010 IEEE International Power Modulator and High Voltage Conference, May 23 - 27, 2010 in Atlanta, GA. (*invited presentation*, with A. Young, M. Elsayed, J. Korn, J. Walter, S. Holt, J. Dickens, M. Kristiansen, L. Altgilbers)
11. “*Dielectric Surface Flashover under Pulsed RF and Unipolar Excitation*,” Tsinghua University, Beijing, China, July 2009.
12. “*Devices of pulsed power and high power microwaves and their insulation*”, Xi’an Jiaotong University, China, July 2009.
13. “*Energy Storage and Compact Pulsed Power*,” National Institute of Nuclear Technology, NINT, Xi’an, China, July 2009.
14. “*Effects of UV Illumination on Surface Flashover under Pulsed Unipolar Excitation*,” IEEE Pulsed Power and Plasma Science Conference, Albuquerque, NM June 17-22, 2007 (*invited presentation* , with J. T. Krile, H. G. Krompholz)
15. “*Dielectric Surface Flashover under Pulsed Unipolar and RF Excitation*,” DPG Frühjahrstagung des AMOP, Düsseldorf, March 19-23, 2007, Germany (*plenary presentation; travel, accommodation paid by organizer*)
16. “*Dielectric Surface Flashover under Pulsed RF and Unipolar Excitation*,” MIT, Plasma Science and Fusion Center, Seminar, Feb. 2007
17. “*Dielectric Surface Flashover at Atmospheric Conditions under High Power Microwave Excitation*,” APS conference, 2006 48th Annual Meeting of the Division of Plasma Physics, October 30-November 3, 2006, Meeting Id: DPP06, Philadelphia, PA.
18. “*Pulsed Power Research at Texas Tech University*”, 1st Euro-Asian Pulsed Power Conference, Sept. 18 -22, 2006, Chengdu, China (*plenary presentation*, with M. Kristiansen, J. Dickens)
19. “*Dielectric Surface Flashover Research at Texas Tech University*,” 1st Euro-Asian Pulsed Power Conference, Sept. 18 -22, 2006, Chengdu, China (with H. Krompholz, J. Dickens, M. Kristiansen)
20. “*High Power Microwave Breakdown Limits of Dielectric/Gas Interfaces*,” presented at the International COE Forum on Pulsed Power Science, November 13, 2005 in Kumamoto, Japan (*travel, accommodation paid by organizer*)
21. “*Explosive Pulsed Power, Developments and Modeling*,” invited presentation at the Directed Energy Weapons II Conference, 7th to 8th June 2004, The Hatton, London, United Kingdom (*travel paid by organizer*).
22. “*Advanced Compact Pulsed Power for DEW*,” presented at the annual conference on Directed Energy Weapons and Laser Development, Jan. 18-19, 2005, Washington DC.

23. “*Compact Pulsed Power*,” invited presentation at the 5th International Symposium on Pulsed Power and Plasma Applications, Oct. 18-20, Chan-Won, Korea, p. 10-15, 2004. (with M. Kristiansen, J. Dickens, H. Krompholz, M. Giesselmann, J. Mankowski, L. Hatfield)
24. “*Compact Pulsed Power*,” invited presentation at the *MegaGauss X*, Berlin, Germany, July 18 -23, 2004. (with M. Kristiansen, J. Dickens, M. Giesselmann, and S. Shkuratov)
25. “High Power Microwave Breakdown of Dielectric Interfaces,” invited presentation at the Workshop on High Gradient RF, Argonne National Laboratory, IL, Oct. 7-9, 2003.
26. “*Pulsed Power at Texas Tech University*,” invited lecture (*paid travel and accommodation*) at the University of Nagaoka, Japan, March 2002.
27. “*Dielectric/Gas Interface Breakdown Caused by High Power Microwaves*,” invited presentation at the 13th International Conference on High-Power Particle Beams, June 25-30, 2000, Nagaoka, Japan. (with D. Hemmert, H. Krompholz, L.L Hatfield, and M. Kristiansen)
28. “*The Role of Outgassing in Surface Flashover under Vacuum*,” invited presentation *12th IEEE Int. Pulsed Power Conference*, Monterey, CA, 1999 (with J. Dickens, H. Krompholz, and M. Kristiansen)

GRADUATE STUDENT ACCOMPLISHMENTS:

- George Laity was awarded the 2012 graduate directed energy scholarship from the Directed Energy Professional Society.
- Sterling Beeson, doctoral student received a scholarship from the Science, Mathematics And Research for Transformation (SMART) Scholarship for Service Program from the Department of Defense.
- George Laity, doctoral student, received the Tom Burkes Outstanding Graduate Student Award at the 2012 International Power Modulator and High Voltage Conference.
- Jonathan Foster received the international IEEE Outstanding Pulsed Power Student Award for 2011.
- Jacob Stephens and Andrew Fierro, received a NPSC (national physical science consortium) graduate student fellowship, a first at Texas Tech University, in 2011. The fellowship is continuing until graduation.
- George Laity, received the 2011 Lawrence F. Skibbie Graduate Scholarship from National Defense Industrial Society.
- Jonathan Foster, received a National Defense Science and Engineering Graduate Fellowship, 2010 until graduation.
- George Laity, has been selected as a NASA/Texas Space Grant Consortium Fellow for the 2010-2011 academic year. Mr. Laity also received a national 2010 graduate fellowship from the Directed Energy Professional Society.
- Two graduate students gave *invited* presentations at the 27th Power Modulator Symposium and 2006 High Voltage Workshop May 14-18, 2006, Washington DC.
- Andrew Young (PhD student EE) received the Art Gunther IEEE Outstanding Pulsed Power Student Award for 2009.
- Gregory Edmiston (PhD EE) received the IEEE Outstanding Pulsed Power Student Award for 2007.
- Michael Butcher (PhD EE) received the IEEE Outstanding Pulsed Power Student Award for 2005.
- John T. Krile (PhD EE) received the Tom Burkes Outstanding Graduate Student Award at the 27th Power Modulator Conference in 2006.
- Brian Palmer, undergraduate student, placed third in the Region 5 IEEE paper contest in 2005. Gregory Edmiston (PhD student) won the student paper award at the 2007 IEEE Pulsed Power and Plasma Science conference.
- Thomas Holt (PhD EE) received the IEEE Outstanding Pulsed Power Student Award for 2003 for his research as MS EE.

AUTHORSHIP:

Books and Book Chapters

- *Explosively Driven Pulsed Power, Helical Magnetic Flux Compression Generators*, Edtr. A. Neuber, Springer Verlag, August 2005 (ISBN 3-540-26051-X).
(Dr. Neuber co-authored 7 chapters of this book)
- Digest of Technical Papers of the 14th IEEE International Pulsed Power Conference, Dallas, TX, June 2003, Edtrs. Michael Giesselmann and Andreas Neuber, 1466 pages, ISBN 0.7803.7915.2, 2003
- A. Neuber, L. Laurent, Y. Y. Lau, and H. Krompholz, "Windows and RF Breakdown," Chapter 10 (pages 325-375) in *High-Power Microwave Sources and Technologies*, R. J. Barker and E. Schamiloglu, Editors, IEEE Press 2001, ISBN 0.7803-6006-0.
(Dr. Neuber was the coordinator and chapter editor (chapter master) as listed on book page xvii.)

Patents

- D. Stull, A. Neuber, T. Brashears, M. Brashears, C. Alvarado, J. Brooks, D. Sharbutt, "Microwave Disinfection and Sterilization," United States Patent Application 20110014331, Jan 20th 2011.
- D. Stull, A. Neuber "Microwave Disinfection Slotted Radiator," United States Patent Application 29426161, July 2nd 2012.

Publications, peer reviewed (80 total)

1. P. J. Ford, S. R. Beeson, H. G. Krompholz, and Andreas A. Neuber, "A finite-difference time-domain simulation of high power microwave generated plasma at atmospheric pressures," *Phys. Plasmas* 19, 073503 (2012).
2. J. Stephens and A. Neuber, "Electric field enhanced conductivity in strongly coupled dense metal Plasma," *Phys. Plasmas* 19, 060702 (2012).
3. S. Beeson and A. Neuber, "Design and Testing of Multi-Standard Waveguide Couplers," *Rev. Sci. Instrum.* 83, 034702 (2012).
4. J. Stephens, W. Mischke, A. Neuber, "The Impact of Wire Environment on Electro-Explosive Fuse Performance", to be published in *IEEE Trans. Plasma Sci.* (2012).
5. J. Stephens, A. Neuber, and M. Kristiansen, "Experimental and Theoretical Evaluation of Surface Coated Exploding Wires," *Phys. Plasmas* 19, 032702 (2012).
6. J.-W. Bragg, J. Dickens, and A. Neuber, "Investigation into the Temperature Dependence of Ferrimagnetic Nonlinear Transmission Lines," *IEEE Trans. Plasma Sci.* 99, pp. 1-5 (2012).
7. M. Elsayed, A. Neuber, J. Dickens, J. Walter, M. Kristiansen, and L. Altgilbers, "An Explosively Driven High Power Microwave Pulsed Power System," *Rev. Sci. Instrum.* 83, 024705 (2012).
8. J. Foster, H. Krompholz, and A. Neuber, "Statistical analysis of high power microwave breakdown surface flashover delay times in nitrogen with metallic field enhancements," *Phys. Plasmas* 18, 113505, (2011).
9. J. Krile and A. Neuber, "Modeling statistical variations in high power microwave breakdown," *Appl. Phys. Lett.* 98, 211502, (2011).
10. S. Beeson, P. Ford, J. Foster, H. Krompholz, and A. Neuber, "Imaging of Pressure-Dependent High-Power Microwave Surface Flashover," *IEEE Transactions on Plasma Science* 39, 2600-2601, (2011).
11. G. Laity, A. Fierro, L. Hatfield, J. Dickens, and A. Neuber, "Spatially Resolved Vacuum UV Spectral Imaging of Pulsed Atmospheric Flashover," *IEEE Transactions on Plasma Science* 39, 2122-2123, (2011).
12. J. Foster, H. Krompholz, A. Neuber, "Investigation of the Delay Time Distribution of High Power Microwave Surface Flashover," *Physics of Plasmas* 18, 013502 (2011).
13. J. Foster, S. Beeson, H. Krompholz, A. Neuber, "Rapid Formation of Dielectric Surface Flashover due to Pulsed High Power Microwave Excitation," *IEEE Transactions on Dielectrics and Electrical Insulation* 18, pp. 964-970 (2011).
14. G. Laity, A. Neuber, A. Fierro, L. Hatfield, "Phenomenology of Streamer Propagation during Pulsed Dielectric Surface Flashover," *IEEE Transactions on Dielectrics and Electrical Insulation* 18, pp. 946-953, (2011).

Publications, peer reviewed (continued)

15. J. Parson, J. Dickens, J. Walter, A. Neuber, "Pulsed magnetic field excitation sensitivity of match-type electric blasting caps," Review of Scientific Instruments 81, pp. 105115-105115-7 (2010).
16. G. Laity, A. Neuber, G. Rogers, K. Frank, "System for Time Resolved Spectral Studies of Pulsed Atmospheric Discharges in the Visible to VUV Range," Review of Scientific Instruments, 81, 083103 (2010).
17. A. Young, A. Neuber, M. Kristiansen, "Modeling and Simulation of Simple Flux-Trapping FCGs Utilizing PSpice Software," IEEE Trans. on Plasma Sci. 38, 1794 – 1802 (2010).
18. T. Rogers, A. Neuber, G. Laity, K. Frank, J. Dickens, "VUV Emission and Streamer Formation in Pulsed Dielectric Surface Flashover at Atmospheric Pressure," IEEE Trans. on Plasma Sci. 38, pp. 2764 – 2770, (2010).
19. E. J. Matthews, M. Kristiansen, A. A. Neuber, "Capacitor Evaluation for Compact Pulsed Power," IEEE Transaction on Plasma Science 38, 500-508 (2010)
20. D. Bolyard, J. Krile, A. Neuber, M. Kristiansen, "Simulation of Compact Explosively-Driven Ferroelectric Generators," IEEE Trans. on Plasma Sci. 38, 1008 – 1014 (2010)
21. J. Krile, L. McQuage, G. Edmiston, J. Walter, A. Neuber, "Short Pulse High Power Microwave Surface Flashover at 3 GHz," IEEE Trans. on Plasma Sci. 37, pp. 2139-2145 (2009)
22. C. Davis, A. Neuber, A. Young, J. Walter, J. Dickens, M. Kristiansen, "Optimization of an FCG Based High Power Microwave System using Nonexplosive Pulsed Power," IEEE Trans. on Plasma Science, 37, 2321- 2327 (Sept. 2009)
23. J. Foster, M. Thomas, A. A. Neuber, "Variation of the statistical and formative time lags of high power microwave surface flashover utilizing a superimposed DC electric field," J. Appl. Phys. 106, pp. 063310-063310-4 (2009).
24. L.L. Altgilbers, A.H. Stults, M. Kristiansen, A. Neuber, J. Dickens, A. Young, T. Holt, M. Elsayed, R. Curry, K. O'Connor, J. Baird, S. Shkuratov, B. Freeman, D. Hemmert, F. Rose, Z. Shotts, Z. Roberts, W. Hackenberger, E. Alberta, M. Rader, A. Dougherty, "Recent Advances in Explosive Pulsed Power," Journal of Directed Energy, 3, 1-43 (2009)
25. Y. Hidaka, E. M. Choi, I. Mastovsky, M. A. Shapiro, J. R. Sirigiri, and R. J. Temkin, G. F. Edmiston, A. A. Neuber, and Y. Oda, "Plasma Structures Observed in Gas Breakdown Using a 1.5-MW, 110-GHz Pulsed Gyrotron", Phys. Plasmas 16, 055702 (2009).
26. A. Neuber, J. Krile, G. Rogers, H. Krompholz, "Impact of Volume Breakdown on Surface Flashover in High Pressure SF₆," Acta Physica Polonica 115, 995-997 (2008)
27. M. Elsayed, M. Kristiansen, A. Neuber, "Fast-charging compact seed source for magnetic flux compression generators", Rev. Sci. Instrum. 79, 124702, 2008
28. J. Foster, G. Edmiston, M. Thomas, A. Neuber, "High Power Microwave Switching Utilizing A Waveguide Spark Gap," Rev. Sci. Instrum. 79, 114701 (2008).
29. J.E. Chaparro, W. Justis, H.G. Krompholz, L.L. Hatfield, A. A. Neuber, "Breakdown Delay Times for Subnanosecond Gas Discharges at Pressures Below One Atmosphere," IEEE Transactions on Plasma Science 36, 2505 – 2511 (2008).
30. D. W. Belt, J. J. Mankowski, A. A. Neuber, J.C. Dickens, M. Kristiansen, "Utilization of a Nonexplosive Test Bed for Flux-Compression-Generator Electroexplosive Opening Switches," IEEE Transactions on Plasma Science 36, 2684 – 2690, (2008).
31. T. Holt, A. Young, M. Elsayed, J. Walter, A. Neuber, and M. Kristiansen, "Images From the Development of a High-Power Microwave System," IEEE Transactions on Plasma Science 36, 1414-1415 (2008).
32. D. R. McCauley, D. W. Belt, J. J. Mankowski, J. C. Dickens, A. A. Neuber, and M. Kristiansen, "Compact Electro-Explosive Fuses for Explosive Driven Pulsed Power," IEEE Transactions on Plasma Science 36, 2691 - 2699 (2008)
33. G. Edmiston, J. Krile, A. Neuber, "Imaging of High Power Microwave Induced Surface Flashover on a Corrugated Dielectric Window," IEEE Transactions on Plasma Science 36, 946 - 947 (2008).
34. J. Krile, A. Neuber, R. Vela, "High Current Surface Flashover in a High Pressure SF₆ Environment," IEEE Transactions on Plasma Science 36, 934 - 935 (2008).
35. G. F. Edmiston, A. A. Neuber, H. G. Krompholz, J. T. Krile, "Seed Electron Production from O⁻ Ions under High Power Microwave Excitation," J. Appl. Phys. 103, 063303 (2008).
36. J. T. Krile, A. A. Neuber, H. G. Krompholz, "Effects of UV Illumination on Surface Flashover under Pulsed Excitation," IEEE Transactions on Plasma Science 36, 332 - 340 (2008)
37. J. T. Krile, R. Vela, A. A. Neuber, and H. G. Krompholz, "Pulsed Dielectric Surface Flashover in an SF₆ Environment," IEEE Transactions on Plasma Science 35, pp. 1580-1587 (2007)

Publications, peer reviewed (continued)

38. J. T. Krile, R. Vela, A. A. Neuber, and H. G. Krompholz, "Spectral Analysis of Pulsed Volume Breakdown in SF₆ at High Pressures," IEEE Transactions on Plasma Science 35, pp. 1163-1169 (2007)
39. G. Edmiston, A. Neuber, L. McQuage, J. Krile, H. Krompholz, J. Dickens, "Contributing Factors to Window Flashover Under Pulsed High Power Microwave Excitation at High Altitude," IEEE Transactions on Dielectrics and Electrical Insulation 14, pp. 783-789 (2007)
40. K. Morales, J. Krile, A. Neuber, and H. Krompholz, "Dielectric Surface Flashover at Atmospheric Conditions with Unipolar Pulsed Voltage Excitation," IEEE Transactions on Dielectrics and Electrical Insulation 14, pp. 774-782 (2007)
41. A. Neuber, J. T. Krile, G. F. Edmiston, H. G. Krompholz, "Dielectric Surface Flashover at Atmospheric Conditions under High Power Microwave Excitation," Phys. Plasmas 14, 057102 (2007) (invited).
42. E. Crull, H. Krompholz, A. Neuber, and L. Hatfield, "Pulsed Gas Breakdown With High Overvoltages in Argon and Air," *Ultra-Wideband Short-Pulse Electromagnetics 7*, F. Sabbath, Ed., Springer, NY, 2007, pp. 409-414.
43. A.A. Neuber, G.F. Edmiston, J.T. Krile, H. Krompholz, J.C. Dickens, M. Kristiansen, "Interface Breakdown During High Power Microwave Transmission," IEEE Transactions on Magnetics vol. 43, 496, 2007
44. D. Belt, J. Mankowski, A. Neuber, J. Dickens, M. Kristiansen, "Design and implementation of a flux compression generator non-explosive test bed for electro-explosive fuses," Rev. Sci. Instrum. vol. 77, 094702-1..7, 2006.
45. John T. Krile, Andreas A. Neuber, Hermann G. Krompholz, and Thomas L. Gibson, "Monte Carlo simulation of HPM window breakdown at atmospheric conditions," Applied Physics Letters vol. 89, 201501 (2006).
46. H. Krompholz, L. L. Hatfield, A. A. Neuber, K.P. Kohl, J.E. Chaparro, Han-Yong Ryu, "Phenomenology of subnanosecond gas discharges at pressures below one atmosphere," IEEE Trans. Plasma Sci, vol. 34, pp. 927 – 936, 2006
47. G. Edmiston, J. Krile, A. Neuber, J. Dickens, and H. Krompholz, "High Power Microwave Surface Flashover of a Gas-Dielectric Interface at 90 to 760 Torr," IEEE Transactions on Plasma Science, vol. 34, pp. 1782-1788, 2006.
48. K. P. Morales, J. T. Krile, A. A. Neuber, and H. G. Krompholz, "Pulsed Dielectric Surface Flashover in Nitrogen at Atmospheric Conditions," IEEE Transactions on Dielectrics and Electrical Insulation, vol. 13, pp. 803 – 809, 2006.
49. J. Krile, G. Edmiston, K. Morales, A. Neuber, H. Krompholz, and M. Kristiansen, "Similarities Of Dielectric Surface Flashover at Atmospheric Conditions for Pulsed Unipolar and RF Excitation," Laser Physics in Special Issue "Plasma, Beams, and Lasers" Dedicated to Professor Gennady A. Mesyats on his 70th Birth Anniversary, vol. 16, pp. 194-201, 2006.
50. M. Butcher, A. Neuber, M. Cevallos, J. Dickens, H. Krompholz "Conduction and Breakdown Mechanisms in Transformer Oil", IEEE Trans on Plasma Sci, vol. 34, pp. 467-475, 2006.
51. Y. J. Chen, A. A. Neuber, J. Mankowski, J. C. Dickens, M. Kristiansen, R. Gale "Design and Optimization of a Compact, Repetitive, HPM System," Rev. Sci. Instrum. vol. 76, 104703-1..8 (2005)
52. J. Qian, R. P. Joshi, J. Kolb, and K. H. Schoenbach, J. Dickens, A. Neuber, M. Butcher, M. Cevallos, and H. Krompholz, E. Schamiloglu and J. Gaudet, "Microbubble-based model analysis of liquid breakdown initiation by a submicrosecond pulse," J. Appl. Phys. 97, 113304, 2005.
53. J. Krile, A. Neuber, J. Dickens, H. Krompholz, "DC and Pulsed Dielectric Surface Flashover at Atmospheric Pressure," IEEE Transactions on Plasma Sci., vol. 33, pp. 1149-1154, 2005.
54. J. Krile, A. Neuber, J. Dickens, H. Krompholz, "Imaging of Dielectric Surface Flashover in Atmospheric Conditions," IEEE Transactions on Plasma Science, vol. 33, pp. 270-271, 2005.
55. M. Cevallos, M. Butcher, J. Dickens, A. Neuber, H. Krompholz, "Imaging of Negative Polarity DC Breakdown Streamer Expansion in Transformer Oil due to Variations in Background Pressure", IEEE Transactions on Plasma Science, vol. 33, 494-495, 2005.
56. J. A. Gaudet, R. J. Barker, C.J. Buchenauer, C. Christodoulou, J. Dickens, M. A. Gunderson, R. P. Joshi, H. G. Krompholz, J. F. Kolb, A. Kuthi, M. Laroussi, A. Neuber, W. Nunnally, E. Schamiloglou, K. H. Schoenbach, J. S. Tyo, and R.J. Vidmar, "Research Issues in Developing Compact Pulsed Power for High Peak Power Applications on Mobile Platforms," Proceedings of the IEEE, vol. 92, pp. 1144-1165, 2004. (Invited Paper)
57. A. Neuber and J. Dickens, "Magnetic Flux Compression Generators," Proceedings of the IEEE, vol. 92, pp. 1205-1215, 2004. (Invited Paper)

Publications, peer reviewed (continued)

58. E. Schamiloglou, R. J. Barker, M. Gunderson, and A. A. Neuber, "Scanning the Technology," Proceedings of the IEEE, vol. 92, pp. 1014-1020, 2004.
59. J.-C. Hernandez, A. Neuber, J. Dickens, and M. Kristiansen, "Quantification of Ohmic and Intrinsic Flux Losses in Helical Flux Compression Generators," IEEE Transactions, Special Issue on Pulsed Power Science and Technology in the IEEE Transactions of Plasma Science, vol. 32, 1902-1907, 2004.
60. John T. Krile, Andreas A. Neuber, James C. Dickens, and Hermann G. Krompholz, "DC Flashover of a Dielectric Surface in Atmospheric Conditions," Special Issue on Pulsed Power Science and Technology in the IEEE Transactions of Plasma Science, vol. 32, 1828-1834, 2004.
61. Andreas A. Neuber, Juan-Carlos Hernández, James C. Dickens, Magne Kristiansen, "Helical MFCG For Driving A High Inductance Load," Electromagnetic Phenomena, vol. 3, pp. 397-404, (2003).
62. A. Neuber, T. Holt, J. Dickens, and M. Kristiansen, "Thermodynamic State Of The Magnetic Flux Compression Generator Volume," IEEE Trans. on Plasma Science, vol. 30, 1659-1664 (2002).
63. M. Giesselmann, T. Heeren, A. Neuber, J. Walter, and M. Kristiansen, "High-speed Optical Diagnostic of an Exploding Wire Fuse," Special Issue of Imaging in Plasma Science, IEEE Trans. on Plasma Science, vol. 30, 100-101 (2002).
64. J. Mankowski, D. Hemmert, A. Neuber, and H. Krompholz, "Field Enhanced Microwave Breakdown in a Plasma Limiter," Special Issue of Imaging in Plasma Science, IEEE Transaction of Plasma Science, vol. 30, 102-103 (2002).
65. A. Neuber, L. Laurent, Y. Y. Lau, and H. Krompholz, "Windows and RF Breakdown," Chapter 10 (pages 325-375) in *High-Power Microwave Sources and Technologies*, R. J. Barker and E. Schamiloglu, Editors, IEEE Press 2001, ISBN 0.7803-6006-0.
66. A. Neuber, J. Dickens, M. Giesselmann, M. Kristiansen, B. Freeman, D. Dorsey, P. Worsey, J. Baird, and M. Schmidt, "Studies on a Helical Magnetic Flux Compression Generator," SAE Transactions, Journal of Aerospace, vol. 109, pp. 865-869, 2000 (*This Transactions volume was published in 2001 and "...contains the best 135 technical papers of all those presented in 2000."*).
67. A. Neuber, J. Dickens, J. B. Cornette, K. Jamison, R. Parkinson, M. Giesselmann, P. Worsey, J. Baird, M. Schmidt, and M. Kristiansen, "Electrical Behavior of a Simple Helical Flux Compression Generator for Code Benchmarking," IEEE Trans. on Plasma Science, vol. 29, 573-581 (2001).
68. A. Neuber, J. Dickens, H. Krompholz, and M. Kristiansen, "The Role of Outgassing in Surface Flashover under Vacuum," IEEE Trans. on Plasma Science, vol. 28, 1593-1598 (2000).
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277. M. Butcher, A. Neuber, H. Krompholz, L. L. Hatfield, and M. Kristiansen: Surface Flashover of Dielectrics Immersed in Super-Cooled Liquid Nitrogen. *12th IEEE Int. Pulsed Power Conference*, pp. 450-453, Monterey, CA (1999)
278. A. Neuber, J. Dickens, H. Krompholz, and M. Kristiansen: Optical Diagnostics on Helical Flux Compression Generators. *12th IEEE Int. Pulsed Power Conference*, pp. 632-635, Monterey, CA (1999)
279. A. Neuber, J. Dickens, H. Krompholz, and M. Kristiansen: The Role of Outgassing in Surface Flashover under Vacuum. *12th IEEE Int. Pulsed Power Conference*, pp. 441-445, Monterey, CA (1999), *invited*.
280. A. Neuber, M. Butcher, H. Krompholz, and L. L. Hatfield: Dielectric Surface Flashover in Vacuum at (100 K). *XVIIIth International Symposium on Discharges and Insulation in Vacuum*, Eindhoven (1998), pp. 815-818.
281. A. Neuber, J. Dickens, D. Hemmert, H. Krompholz, L. L. Hatfield, and M. Kristiansen: Breakdown of Dielectric/Vacuum Interfaces caused by High Power Microwaves. Presented at the *IEEE International Conference on Plasma Science* (1998)
282. Valfells, A.; Ang, L.K.; Lau, Y.Y.; Gilgenbach, R.M.; Kishek, R.A.; Verboncoeur, J.; Neuber, A.; Krompholz, H.; Hatfield, L.L, "A theory of RF window failure," 1999 IEEE International Conference on Plasma Science, 20-24 June 1999, page 105.
283. A. Neuber, H. Krompholz, and L. L. Hatfield: Dielectric Surface Flashover in Vacuum at Cryogenic Temperature (100 K). *Annual Report of the Conference on Electrical Insulation and Dielectric Phenomena*, Minneapolis (1997), pp. 575-578.
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287. A. Neuber, "Laser induced fluorescence spectroscopy of turbulent diffusion flames Ph.D. Dissertation," August 1996, Darmstadt, Germany.
288. A. Neuber, G. Krieger, M. Tacke, E. Hassel, and J. Janicka: In Situ Measurement of Nitric Oxide in Turbulent Diffusion Flames, VDI- Verlag, Forschung im Ingenieurwesen, Engineering Research (1996)
289. E.P. Hassel, G. Früchtel, F. Lipp, A. Neuber, and J. Janicka: Velocity, Concentration and Temperature measurements in turbulent H₂/N₂-Air Diffusion Flames for Numerical Flame Modeling. *Eighth International Symposium on Transport Phenomena in Combustion*, San Francisco (1995)
290. T.C. Cheng, G. Früchtel, A. Neuber, F. Lipp, E.P. Hassel, and J. Janicka: Experimental Data Base for Numerical Simulation of Turbulent Diffusion Flames. VDI- Verlag, Forschung im Ingenieurwesen, Engineering Research 61:165-171 (1995)
291. J.W. Hartick, A. Neuber, E.P. Hassel, and J. Janicka: Modeling Turbulence-Radiation Interaction in Confined Diffusion Flames. *Eighth International Symposium on Transport Phenomena in Combustion*, San Francisco (1995)
292. J.W. Hartick, A. Neuber, G. Früchtel, E.P. Hassel and J. Janicka: Turbulence-Radiation Interaction in Confined Combustion Systems. VDI-Verlag, Forschung im Ingenieurwesen, Engineering Research 61, 67-74 (1995)
293. A. Neuber, E. Hassel, and J. Janicka: Comparison of Turbulent Diffusion Flame Temperatures and Re-Stress Model Prediction. *Third International Symposium on Special Topics in Chemical Propulsion, Non Intrusive Combustion Diagnostics*, Scheveningen, May 1993, p.120-125

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294. A. Neuber, J.W. Hartick, and E.P. Hassel: CARS Temperature Measurement in a Turbulent Natural GAS Diffusion Flame Compared to Theoretical Predictions. *Proceedings of the XIII International Conference on Raman Spectroscopy*, Würzburg (1993), p. 256-357
295. E. Hassel, F. Lipp, and A. Neuber: Multichannel Raman Scattering: Comparison of an Intensified Linear Diode Array and an ICCD Detector. VDI-Verlag, *Forschung im Ingenieurwesen* 58, 50-53 (1992)

TEACHING SERVICE:

- Mentor for Howard Hughes Medical Institute for undergraduate student at Texas Tech, 2012 (the first undergrad student in engineering sponsored by the HHMI at TTU).
- Lecturer at the “Pulsed Power Short Course”, January 5-7, 2011, in Lubbock, TX.
- Lecturer at the “Pulsed Power School”, June 27th- July 3rd 2010, in Mianyang, PR China.
- Lecturer at National Institute of Nuclear Technology, NINT, July 2009, Xi’an, PR China
- Lecturer at Tsinghua University, July 2009, Beijing PR China.
- Invited Speaker at the Pulsed Power Review for DOD, Arlington, VA, 25-26 June 2009
- Lecturer at the “Pulsed Power Short Course”, January 6-8, 2009, in Lubbock, TX.
- TTU, Clark Scholar mentor for gifted high school students (2007, 2005, 2003, 2002).
- Discussion Panel Member on "High Power Microwaves: Where is it going?" at the 2007 International IEEE Pulsed Power and Plasma Science Conference, Albuquerque, NM June 17-22, 2007 along with four other experts in the field from National/DOD Laboratories, Industry, and Funding Agencies. This international conference is *the* major conference in the field with participant numbers between 600 and 1,000 from more than 20 countries.
- Invited seminar presenter at MIT, Plasma Science and Fusion Center, Feb 15th-16th, 2007, Boston, MA.
- Lecturer at the “Pulsed Power Short Course”, January 9-12, 2007, in Lubbock, TX.
- Lecturer at the “Pulsed Power Short Course”, January 10-13, 2006, in Lubbock, TX.
- Lecturer at High Power Microwave Workshop, August 2005, at FOI in Sweden.
- Lecturer at the “Pulsed Power Short Course”, August 23-26, 2004 in Lubbock, TX.
- Lecturer at the “Pulsed Power Short Course” with 38 international participants, January 6-9, 2004 in Lubbock, TX.
- Lecturer at the “Pulsed Power Short Course” with 44 international participants, January 7-10, 2002 in Lubbock, TX.
- LECTURED UPON INVITATION ABOUT CURRENT TTU PULSED POWER RESEARCH AT THE UNIVERSITY OF NAGAOKA, JAPAN, MARCH 2002.
- TTU, COE Bridge program advisor for incoming freshmen.
- Lecturer at the “Explosively-Driven HPM” short course with 28 participants from NAVAIR, September 16-17, 2002 in China Lake, CA.
- Lecturer at the Pulsed Power Technology Workshop October 30, 2000, preceding the SAE Power Systems Conference Mission Valley Marriott Hotel, San Diego, CA.

PROFESSIONAL SERVICE:

- Member of the Pulsed Power Science & Technology Committee (PPS&T) of the IEEE Nuclear & Plasma Sciences Society (NPSS), 2007 – present. Serving as Student Advocate from 2009 to present.
- Steering committee member for the International Mega-Gauss conference, 2005-present.
- IEEE International Power Modulator and High Voltage Conference technical program committee member, 2012.
- Guest Editor for the IEEE Transactions on Plasma Science Special Issue on Power Modulators and Repetitive Pulsed Power, August 2011.
- IEEE International Power Modulator and High Voltage Conference technical program committee member, session chair for HV Dielectric Breakdown, 2010.
- Technical program committee member for the 3rd Euro-Asian Pulsed Power Conference, Korea, Jeju Island, Oct 10-14, 2010.
- Lecturer for Pulsed Power Short Courses held at TTU in Spring '02, Spring '04, Summer '04, Spring '06, Spring '07, Spring '09, and Spring '11 with international participant groups.

- Power Modulator Conference technical program committee member, topic organizer for HV Components & Dielectric Breakdown, 2006.
- Served as Session Chair at the 27th Power Modulator Symposium and 2006 High Voltage Workshop May 14-18, 2006, Washington, DC.
- Lecturer at High Power Microwave Workshop at FOI in Sweden, Aug. 2005.
- Reviewer for numerous Journals and Research proposals such as IEEE Transactions on Plasma Science, Journal of Applied Physics, and Physical Review/Physical Review Letters, Review of Scientific Instruments, Reviewer for research proposals for NSF
- Review Panel member for the CRDF, 2002 - 2008
- Committee member of the International Scientific Committee for the XIV International Conference of Gas Discharges and their Applications, Sept. 1st – 6th, Liverpool, UK, 2002.
- Served as Session Organizer and Chair for “Insulation & Breakdown” at the IEEE International Pulsed Power Plasma Science Conference, June 17 – June 22, 2001 in Las Vegas, NA.
- Organized the Explosive Handling and Safety Short Course in August 15-16, 2000 at Texas Tech University given by Dr. Paul Worsey, University of Missouri in Rolla (20 participants).
- Served as Session Organizer and Chair for “Insulation & Breakdown” at the IEEE International Pulsed Power Plasma Science Conference, June 17 – June 22, 2001 in Las Vegas, NA.
- Lecturer at the Pulsed Power Technology Workshop October 30, 2000, preceding the SAE Power Systems Conference Mission Valley Marriott Hotel, San Diego, CA.
- Served as Session Chair for “Vacuum Electronics/Microwave Systems” at the IEEE International Conference on Plasma Science, June 4-7, 2000 in New Orleans, LA.
- Served as Session Chair for “Diagnostic and Computational Systems” at the 12th IEEE International Pulsed Power Conference, June 27 – June 30, 1999 in Monterey, CA.
- Guest Editor for the IEEE Transactions on Plasma Science Special Issue on Power Modulators and Repetitive Pulsed Power, August 2005.
- Served as Technical Program Chair for the 14th IEEE International Pulsed Power Conference, Dallas, TX, June 15 – 18, 2003. (600 attendees from 20 countries)
- Served as Technical Program Co-Chair for the International Power Modulator Conference, held in Hollywood, CA, June 30 – July 3, 2002 (150 attendees).
- Consulting for private companies and national labs:
 - o Shearers of Lubbock, 2012 - present
 - o E-controls, 2012 - present
 - o MicroZAP, 2010 - present
 - o HEM Technologies, 2010 - present
 - o External Readiness Review Member for the DOE through Los Alamos, 2003 – 2010
 - o Gas processing for Lynntech, Inc., 2007
 - o Computational and Analysis Work for Microwave Sciences, 2002 – 2003.
 - o Member External Review Committee, IGC-Superpower, Schenectady, NY, 2002.
 - o RF Discharge for Lighting for Federal Mogul, 2001-2002.
 - o Fault Current Limiter Failure Assessment, for Los Alamos National Laboratory, 2001.
 - o HPM Pulsed Power Technology for FMV (Swedish Defense Department), 2000
- Served on the Discussion Panel on "High Power Microwaves: Where is it going?" at the 2007 International IEEE Pulsed Power and Plasma Science Conference, Albuquerque, NM June 17-22, 2007 along with four other experts in the field from National/DOD Laboratories, Industry, and Funding Agencies. This international conference is *the* major conference in the field with participant numbers between 600 and 1,000 from more than 20 countries.