
**Curriculum Vitae of
STEPHEN D. GEDNEY**

PRESENT ADDRESS: Department of Electrical Engineering
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EDUCATION:

Ph.D.: Electrical Engineering, University of Illinois at Urbana-Champaign, Illinois, 1991.
M.S.: Electrical Engineering, University of Illinois at Urbana-Champaign, Illinois, 1987.
B.Eng.: Electrical Engineering (Honors), McGill University, Montreal, Quebec, Canada, 1985.

PROFESSIONAL EXPERIENCE:

University of Kentucky	1991 - present
Dept. of Electrical and Computer Engineering	
Professor	7/01 – present
Associate Professor	7/97 – 6/01
Assistant Professor	7/91 – 6/96
Alpha Omega Electromagnetics, LLC	2004/2005
Ellicott City, MD	
Visiting Professor (Sabbatical leave)	
Hughes Research Laboratories (HRL), Malibu CA.	1996, 1997
Visiting Professor	
Jet Propulsion Laboratory	Summers 1992 & 1993
California Institute of Technology, Pasadena, CA	
Summer Faculty Fellow	
University of Illinois	1987 - 1991
Dept. of Electrical and Computer Engineering	
Graduate Research Assistant	
US Army Corp of Engineers	1985 - 1987
Construction Engineering Research Laboratory, Champaign, IL	
Graduate Research Assistant	

HONORS AND AWARDS:

- IEEE Fellow, 2004
- Reese Terry Endowed Professorship, 2002- present
- Visiting Professor, Hughes Research Laboratories, Fall 1996, Summer 1997.
- Tau Beta Pi, Electrical Engineering Outstanding Teacher of the Year Award, 1995-1996.
- NASA/ASEE Summer Faculty Fellow Award, 1992 and 1993
- NSF CAREER Award, 1996-2000
- Harold L. Olesen Award for excellence in undergraduate teaching by a graduate student, 1989-1990

AREAS OF RESEARCH AND SPECIALIZATION:

Computational Electromagnetics, with emphasis in:

- High-order, fast, integral equation solution techniques
- High-order time-dependent methods for the solutions of Maxwell's equations
- Analysis and design of passive microwave circuits, packaging, and antennas
- Parallel computational methods in electromagnetics
- Electromagnetic scattering by complex bodies and periodic structures

PROFESSIONAL AFFILIATIONS:

- Institute of Electrical and Electronics Engineers (IEEE); Member since 1984, SM(97), F(04)
- IEEE Antennas and Propagation Society
- IEEE Microwave Theory and Techniques Society
- IEEE Electromagnetic Compatibility Society

EDITORIAL SERVICES:

- Associate Editor, *IEEE Transactions on Antennas and Propagation* (1997 - 2004)
- Active reviewer for many peer reviewed journals, including IEEE Transactions on Antennas and Propagation, IEEE Transactions on Microwave Theory and Techniques, IEEE Transactions on Electromagnetic Compatibility, IEEE Antennas and Wave Propagation Letters, IEEE Microwave and Wireless Component Letters, IEE Proc. H, Electromagnetics, Radio Science, Journal of Computational Physics

PROFESSIONAL SERVICE:

- Administrative positions
Advisory Committee Member, IEEE Antennas and Propagation Society (2000-2003)
Membership Committee Chairman, IEEE Antennas and Propagation Society (1995 - 2002)
Associate Editor, *IEEE Transactions on Antennas and Propagation* (1997 - 2004)
- Professional Society Services
Session Chair, IEEE Symposium on Antennas and Propagation (1992 – 2005)
Short Course: The Finite Difference Time-Domain Modeling and Applications, ACES Symposium, Monterey, 1997, and IEEE AP Symposium, Atlanta, 1997.

Proposal Reviews, including general NSF proposals, NSF Engineering Research Center programs,

UNIVERSITY SERVICE:

Current Committees:

- Chair, Dept. of ECE Promotion and Tenure Committee (2002 – present)
- Elected Member, Engineering College Faculty Advisory Committee (2003 – present)
- College of Engineering Research Enhancement Committee (2002 – present)
- University of Kentucky Center for Computational Sciences advisory committee (1993 – present)

PUBLICATIONS**REFEREED JOURNAL ARTICLES:**

- [1] Stephen D. Gedney and Raj Mittra, "The use of the FFT for the efficient solution of the problem of electromagnetic scattering by a body of revolution," *IEEE Transactions on Antennas and Propagation*, Vol. TAP-38, pp. 313-322, March 1990. (22)¹
- [2] Stephen D. Gedney and Raj Mittra, "Analysis of the electromagnetic scattering by thick gratings using a combined FEM/MoM technique," *IEEE Transactions on Antennas and Propagation*, vol. AP-39, pp. 1605-1614, November 1991. (25)
- [3] Stephen D. Gedney, Jin-Fa Lee and Raj Mittra, "A combined FEM/MoM approach to analyze the plane wave diffraction by arbitrary gratings," *IEEE Transactions on Microwave Theory and Techniques*, vol. MTT-40, pp. 363-370, February 1992. (36)
- [4] Stephen D. Gedney and Raj Mittra, "Electromagnetic transmission through a inhomogeneously filled slot in a thick conducting screen - arbitrary incidence," *IEEE Transactions on Electromagnetic Compatibility*, vol. 34, pp. 404-415, November 1992. (9)
- [5] Stephen D. Gedney and Jin-Fa Lee, "Mixed element formulation for the efficient solution of electromagnetic scattering problems," *IEEE Transactions on Magnetics*, vol. 29, pp. 1632-1635, March 1993. (0)
- [6] Hassan Hejase, Stephen Gedney, and Keith Whites, "Effect of a finite ground plane on radiated emissions from a circular loop antenna," *IEEE Transactions on Electromagnetic Compatibility*, vol. 36, pp. 364-371, November 1994. (0)
- [7] Xiaoming Lou, Charles D. Smith, Stephen Gedney, Jian Li, and Prasad Kadaba, "On the performance of tubular surface coils in nuclear magnetic resonance imaging and spectroscopy," *IEEE Transactions on Nuclear Science*, vol. 42, pp. 41-47 Feb. 1995. (0)
- [8] Stephen D. Gedney and Faiza Lansing, "A parallel planar generalized Yee-algorithm for the analysis of microwave circuit devices," *International Journal on Numerical Modeling (Electronic Networks, Devices and Fields)*, Vol. 8, pp. 249-264, May-August 1995. (4)
- [9] Stephen D. Gedney and Umesh Navsariwala, "A comparison of the performance of the finite difference time-domain, finite element time-domain, and planar generalized Yee-algorithms on high performance parallel computers," *International Journal on Numerical Modeling (Electronic Networks, Devices and Fields)*, Vol. 8, pp. 265-276, May-August 1995. (5)
- [10] Stephen D. Gedney, Faiza Lansing, and Dan Rascoe, "Full Wave Analysis of Microwave Monolithic Circuit Devices Using a Generalized Yee Algorithm Based on Unstructured Grids," NASA Tech Brief# NPO-19186, NASA/JPL, Pasadena, CA, March 1995.

¹ (*) proceeding each publication indicates the number of citations of the paper as recorded by the ISI Citation Database

- [11] Stephen D. Gedney, "Finite-difference time-domain analysis of microwave circuit devices on high performance vector/parallel computers," *IEEE Transactions on Microwave Theory and Techniques*, vol. 43, pp. 2510-2514, October 1995. (10)
- [12] Stephen D. Gedney and Umesh Navsariwala, "An unconditionally stable implicit finite-element time-domain solution of the vector wave equation," *IEEE Microwave and Guided Wave Letters*, vol. 5, pp. 332-334, October 1995. (55)
- [13] J. A. Roden, C. Paul, B. Smith, and S. D. Gedney, "Finite-Difference Time-Domain Analysis of Lossy Transmission Lines," *IEEE Transactions on Electromagnetic Compatibility*, vol. 38, pp. 15-24, Feb. 1996. (33)
- [14] S. D. Gedney, Faiza Lansing, and Dan Rascoe, "A full-wave analysis of passive monolithic integrated circuit devices using a generalized Yee-algorithm," *IEEE Transactions on Microwave Theory and Techniques*, vol. 44, pp. 1393-1400, August 1996. (20)
- [15] Stephen D. Gedney, "An Anisotropic PML Absorbing Media for FDTD Simulation of Fields in Lossy Dispersive Media," *Electromagnetics*, vol. 16, pp. 399-415, July/August 1996. (100)
- [16] Stephen D. Gedney, "An anisotropic perfectly matched layer absorbing media for the truncation of FDTD Lattices," *IEEE Transactions on Antennas and Propagation*, vol. 44, pp. 1630-1639, December 1996. (303)
- [17] J. Alan Roden and Stephen Gedney, "Efficient Implementation of the Uniaxial Based PML Media in Three-Dimensional Non-orthogonal Coordinates Using the FDTD Technique," *Microwave and Optical Technology Letters*, vol. 14, n. 2, pp. 71-75, February 5, 1997. (27)
- [18] U. Navsariwala, and S. D. Gedney, "An efficient implementation of the finite-element time-domain algorithm on parallel computers using a finite-element tearing and interconnecting algorithm," *Microwave and Optical Technology Letters*, vol. 16, n. 4, pp. 204-208, November 1997. (5)
- [19] J. Alan Roden, Stephen Gedney, Paul Harms, Jim Maloney, Morris Kessler, and Ed Kuster, "Time Domain Analysis of Periodic Structures at Oblique Incidence: Orthogonal and Non-Orthogonal FDTD Implementations," *IEEE Transactions on Microwave Theory and Techniques*, vol. 46, pp. 420-427, April 1998. (31)
- [20] Shashi K. Mazumdar, James E. Lumpp, and Stephen D. Gedney, "Performance Modeling of the Finite-Difference Time-Domain Method on High Performance Parallel Systems," *Applied Computational Electromagnetic Journal*, vol. 13, No. 2, pp. 147-159, 1998. (0)
- [21] X. Lou, S. D. Gedney, and M. Avison, "End Cap Design for Bird Cage Coils in Nuclear Magnetic Resonance Imaging," *IEEE Transactions on Magnetics*, vol. 35, No. 3, pp. 1939 – 1946, May 1999.(0)
- [22] J. Alan Roden and S. D. Gedney, "The efficient implementation of the surface impedance boundary condition in general curvilinear coordinates," *IEEE Transactions on Microwave Theory and Techniques*, vol. 47, pp. 1954-1963, October 1999 (7).
- [23] C. T. Wolfe, U. Navsariwala, and S. D. Gedney "A Parallel Finite-Element Tearing and Interconnecting Algorithm for Solution of the Vector Wave Equation with PML Absorbing

- Medium," *IEEE Transactions on Antennas and Propagation*, vol. 47, pp. 278-284, Feb. 2000. (20)
- [24] S. D. Gedney and J. Alan Roden, "Numerical Stability of non orthogonal FDTD methods," *IEEE Transactions on Antennas and Propagation*, Vol. 48, pp. 231-239, Feb. 2000. (24)
- [25] G. Liu and S. D. Gedney, "High-Order Nyström Solution of the Volume EFIE for TM-Wave Scattering," *Microwave and Optical Technology Letters*, vol. 25, No. 1, pp. 8-11, April 5, 2000. (8)
- [26] G. Liu and S. D. Gedney, "Perfectly Matched Layer Media for an Unconditionally Stable Three-Dimensional ADI-FDTD Method," *IEEE Microwave and Guided Wave Letters*, vol. 10, pp. 261-263, July 2000. (28)
- [27] S. D. Gedney, L. Hamilton, P. Petre, and D. Yap, "Full-Wave CAD Based Design of a Finite Ground CPW Directional Filter," *International Journal of RF and Microwave Computer-Aided Engineering*, Vol. 10, No. 5, pp. 308-318, September 2000. (1)
- [28] J. A. Roden and S. D. Gedney, "Convolutional PML (CPML): An Efficient FDTD Implementation of the CFS-PML for Arbitrary Media," *Microwave and Optical Technology Letters*, vol. 27, No. 5, pp. 334-339, December 5, 2000. (90)
- [29] G. Liu and S. D. Gedney, "High-Order Nyström Solution of the Volume EFIE for TE-Wave Scattering," *Electromagnetics*, vol. 21, pp. 1-14, January-February 2001 (7).
- [30] S. D. Gedney, G. Liu, J. A. Roden, and A. Zhu, "Perfectly Matched Layer Media With CFS For An Unconditionally Stable ADI-FDTD Method," *IEEE Transactions on Antennas and Propagation*, vol. 49, November, 2001. (38)
- [31] S. D. Gedney, "High-Order Method of Moment Solution of the Scattering by Three-Dimensional PEC Bodies using Quadrature Based Point Matching," *Microwave and Optical Technology Letters*, vol. 29, pp. 303-309, June 5, 2001. (7)
- [32] S. D. Gedney, "Comment on "On the Matching Conditions of Different PML Schemes Applied to Multilayer Isotropic Dielectric Media", *Microwave and Optical Technology Letters*, vol. 30, pp. 289-291, August 20, 2001. (1)
- [33] C.T. Wolfe and S. D. Gedney, "Using the MPI Library with Computational Electromagnetic Domain Decomposition Methods," *Applied Computational Electromagnetics Society Newsletter*, Volume 17, no 1, pp 18-26, March 2002.
- [34] Stephen D. Gedney, Aiming Zhu , Wee-Hua Tang, Gang Liu, and Peter Petre , "A Fast, High-Order Quadrature Sampled Pre-Corrected FFT for Electromagnetic Scattering," *Microwave and Optical Technology Letters*, vol. 36, no. 5, pp. 343-349, March 5, 2003. (8)
- [35] S. D. Gedney and C. C. Lu, "High-Order Solution for the Electromagnetic Scattering by Inhomogeneous Dielectric Bodies," *Radio Science*, vol. 38, no. 1, art. no. 1015, 2003. (2)
- [36] G. Liu and S. D. Gedney, "High-Order Moment Method Solution for the Scattering Analysis of Penetrable Bodies," *Electromagnetics*, vol. 23, no. 4, pp. 331-346, 2003. (3)
- [37] S. D. Gedney, "On Deriving a Locally Corrected Nyström Scheme from a Quadrature Sampled Moment Method," *IEEE Transactions on Antennas and Propagation*, vol. 51, no. 9, pp. 2402-2412, Sept. 2003. (18)

- [38] A. Zhu and S. D. Gedney, "A Quadrature Sampled Pre-Corrected FFT for the Electromagnetic Scattering from Inhomogeneous Objects," *IEEE Antennas and Wireless Propagation Letters*, Vol. 2, no. 1, pp. 50-53, 2003.
- [39] S. D. Gedney, "Implementing the Locally Corrected Nyström method," *Applied Computational Electromagnetics Society Newsletter*, Vol. 18, no. 3, pp. 15-27, Nov. 2003.
- [40] Eliane Becache, Peter Petropoulos, and Stephen Gedney, "On the long-time behavior of unsplit Perfectly Matched Layers," *IEEE Transactions on Antennas and Propagation*, Vol. 52, pp. 1335-1342, May 2004. (19)
- [41] S. D. Gedney, A. Zhu, and C. C. Lu, "Study of Mixed-Order Basis Functions for the Locally-Corrected Nyström Method," *IEEE Transactions on Antennas and Propagation*, vol. 52 no. 1, pp. 2996-3004, November 2004. (9)
- [42] A. Zhu, S. D. Gedney, and J. L. Visher, "A study of combined field formulations for material scattering for a locally corrected Nyström discretization," *IEEE Transactions on Antennas and Propagation*, pp. 4111 – 4120, vol. 53, December 2005. (3)
- [43] A. Zhu, R. J. Adams, F. X. Canning, and S. D. Gedney, "Sparse Solution of an Integral Equation Formulation of Scattering from Open PEC Targets," *Microwave and Optical Technology Letters*, pp. 476-480, vol. 48, No. 3, March 2006. (3)
- [44] A. Zhu, R. J. Adams, F. X. Canning, and S. D. Gedney, "Schur Factorization of the Impedance Matrix in a Localizing Basis," *Journal of Electromagnetic Waves and Applications*, vol. 20, pp. 351-362, no. 3, February 2006. (3)
- [45] W.-H Tang and S.D. Gedney, "An Efficient Evaluation of Near Singular Surface Integrals", *Microwave and Optical Technology Letters*, vol. 48, no. 8, pp. 1583 – 1586, Aug. 2006. (1)
- [46] S. D. Gedney, W. H. Tang, R. Hanneman, J. Hannemann, and P. Petre, "Quadrature Sampled Pre-Corrected FFT for the analysis of Circuits in Layered Media," *Electromagnetics*, vol. 27, no. 2, pp. 109 – 122, Feb. – April, 2007
- [47] Charles T. Wolfe, and Stephen Gedney, "Preconditioning the FETI Method for Accelerating the Solution of Large EM Scattering Problems," *IEEE Antennas and Wireless Propagation Letters*, vol. 6, pp. 175-178, 2007. (2)
- [48] W.-H Tang and S.D. Gedney, "An efficient application of the DCIM for Quasi-3D microwave circuits in layered media," *IEEE Transactions on Microwave Theory and Techniques*, vol. 55, no. 8, pp. 1723 - 1729, August 2007.
- [49] Charles T. Wolfe, and Stephen Gedney, "Implementation of a Domain Decomposition Method on a High Performance Parallel Platform for the Solution of Large Electromagnetic Problems," *Electromagnetics*, vol. 27, No. 2-3, pp. 109-122, Feb-Apr. 2007.
- [50] Y. Xu, X., Xu, R. J. Adams, S. D. Gedney, F. X. Canning, "Sparse direct solution of the electric field integral equation using nonoverlapped localizing LOGOS modes," *Microwave and Optical Technology Letters*, Vol. 50, No. 2, pp 303-307, 2008.
- [51] S. D. Gedney, C. Luo, J. A. Roden, R. D. Crawford, B. Guernsey, J. A. Miller, T. Kramer, E. W. Lucas, "The Discontinuous Galerkin Finite-Element Time-Domain Method Solution of Maxwell's Equations," *Applied Computational Electromagnetic Journal*, vol. 23, 2008 (in press).

CITATIONS OF JOURNAL ARTICLES:

Number of Citations per year of the above refereed journal articles recorded by the ISI Web of Knowledge Citation Database:

2008: 94 citations (through 8/08)	2001: 50 citations
2007: 136 citations	2000: 63 citations
2006: 160 citations	1999: 51 citations
2005: 78 citations	1998: 42 citations
2004: 125 citations	1997: 16 citations
2003: 77 citations	1996: 14 citations
2002: 66 citations	1995: 10 citations

BOOK CHAPTERS:

- [1] Stephen D. Gedney, Andrew F. Peterson and Raj Mittra, "The use of MIMD and SIMD hypercubes for the method of moment solution of electromagnetic scattering problems," in *Computational Electromagnetics and Supercomputer Architecture, PIERS, vol. VIII*, T. Cwik, J. Patterson and J. Kong, Ed.. New York, NY: Elsevier Science, Inc., 1993.
- [2] Stephen Gedney and Faiza Lansing, "Explicit Time-Domain Solutions of Maxwell's Equations Using Non-Orthogonal and Unstructured Grids," in *Computational Electrodynamics: The Finite Difference Time Domain Method*, Allen Taflove, Ed., Artech House, Boston, MA, 1995.
- [3] Stephen Gedney and Stephen Barnard, "Efficient FD-TD Algorithms for Vector and Multiprocessor Computers," in *Computational Electrodynamics: The Finite Difference Time Domain Method*, Allen Taflove, Ed., Artech House, Boston, MA, 1995
- [4] Stephen Gedney, "The Computational Performance of the FDTD Algorithm", in *Time Domain Method for Microwave Structures - Analysis and Design*, IEEE Press, Piscataway, NJ. Spring 1998.
- [5] Stephen Gedney, "The Perfectly Matched Layer Absorbing Medium," in *Advances in Computational Electrodynamics: The Finite-Difference Time-Domain Method*, Allen Taflove, Ed., Artech House, Boston, 1998.
- [6] Stephen Gedney, J. Alan Roden, Niel K. Madsen, Alireza H. Mohammadian, William f. Hall, Vijay Shanker, and Chris Rowell, "Explicit Time Domain Solution of Maxwell's Equations via Generalized Grids," in *Advances in Computational Electrodynamics: The Finite-Difference Time-Domain Method*, Allen Taflove, Ed., Artech House, Boston, 1998.
- [7] Stephen Gedney and Allen Taflove, "Perfectly Matched Layer Absorbing Boundary Conditions," in *Computational Electrodynamics: The Finite-Difference Time-Domain Method*, 2nd Edition, Allen Taflove, Ed., Artech House, Boston, 2000.
- [8] Stephen Gedney and Faiza Lansing, "Explicit Time-Domain Solutions of Maxwell's Equations Using Non-Orthogonal and Unstructured Grids," in *Computational*

Electrodynamics: The Finite Difference Time Domain Method, 2nd Edition, Allen Taflove, Ed., Artech House, Boston, MA, 2000.

- [9] S. C. Hagness, A. Taflove, and S. D. Gedney, "Finite-Difference Time-Domain Methods," in *Handbook of Numerical Analysis, Volume XIII: Numerical Methods in Electromagnetics*, W. H. A. Schilders and E. J. W. ter Maten, eds. Amsterdam, The Netherlands: Elsevier Science Publishers, 2005.
- [10] Stephen Gedney, "Perfectly Matched Layer Absorbing Boundary Conditions," in *Computational Electrodynamics: The Finite-Difference Time-Domain Method*, 3rd Edition, Allen Taflove, Ed., Artech House, Boston, 2005.
- [11] Stephen Gedney and Faiza Lansing, "Explicit Time-Domain Solutions of Maxwell's Equations Using Non-Orthogonal and Unstructured Grids," in *Computational Electrodynamics: The Finite Difference Time Domain Method*, 3rd Edition, Allen Taflove, Ed., Artech House, Boston, MA, 2005.

TECHNICAL REPORTS:

- [1] Stephen D. Gedney, "An Anisotropic Perfectly Matched Layer Absorbing Media for the Truncation of FDTD Lattices," Electrical Engineering Technical Report EMG-95-006, Department of Electrical Engineering, University of Kentucky, Lexington, KY, May. 1995.
- [2] Stephen D. Gedney and Faiza Lansing, "An Overview of the Time-Domain Solution of Maxwell's Equations Using Non-Orthogonal and Unstructured Grids," Electrical Engineering Technical Report EMG-95-005, Department of Electrical Engineering, University of Kentucky, Lexington, KY, February. 1995.
- [3] Stephen D. Gedney, "Optimizing the Computational Performance of the FD-TD Method," Electrical Engineering Technical Report EMG-95-004, Department of Electrical Engineering, University of Kentucky, Lexington, KY, February. 1995.
- [4] Norbert Owona and Stephen D. Gedney, "EFIE Treatment of TE and TM Plane Wave Illuminations of Perfectly Conducting Cylinders with PV-WAVE," Electrical Engineering Technical Report EMG-95-003, Department of Electrical Engineering, University of Kentucky, Lexington, KY, February. 1995.
- [5] Stephen D. Gedney and J. Alan Roden, "Applying Berenger's Perfectly Matched Layer (PML) Boundary Condition to FDTD Analyses of Planar Microwave Circuits," Electrical Engineering Technical Report EMG-95-002, Department of Electrical Engineering, University of Kentucky, Lexington, KY, February. 1995.
- [6] Stephen D. Gedney and Umesh Navsariwala, "An Unconditionally Stable Finite Element Time-Domain Solution of the Vector Wave Equation," Electrical Engineering Technical Report EMG-95-001, Department of Electrical Engineering, University of Kentucky, Lexington, KY, Jan. 1995.

- [7] Stephen D. Gedney, "Finite-Difference Time-Domain Analysis of Microwave Circuit Devices on High Performance Parallel Computers," Electrical Engineering Technical Report EE-1-94, University of Kentucky, Lexington, KY 1994.
- [8] Stephen D. Gedney, "Solution of open region electromagnetic scattering problems on hypercube mutiprocessors," Ph.D. dissertation (EMC Technical Lab Report 91-1), University of Illinois, Urbana, Illinois, May 1991.
- [9] Stephen D. Gedney, Andrew F. Peterson and Raj Mittra, "The solution of electromagnetic scattering problems on multiprocessor computers via the method of moments," EMC Lab Technical Report 89-5, Electromagnetic Communications Laboratory, University of Illinois, Urbana, Illinois, September 1989.
- [10] Stephen Gedney, "A study of the parallel-plate EMP simulator and the simulator/obstacle interaction," USA-CERL Technical Report M91/11, December 1990.
- [11] Stephen Douglas Gedney, "A dynamic analysis of the parallel-plate EMP simulator using a wire mesh approximation and the numerical electromagnetics code," USA-CERL Technical Manuscript M-87/15, September 1987.

OTHER REFEREED PUBLICATIONS:

- [1] Stephen D. Gedney, "Mesh partitioning schemes of large unstructured meshes for parallel finite element analysis," *Applied Computational Electromagnetics Society Newsletter*, vol. 10, pp. 40-54, July 1995.
- [2] Stephen D. Gedney, Faiza Lansing, and Dan Rascoe, "Full wave analysis of microwave monolithic circuit devices using a generalized Yee-algorithm based on unstructured grids," Jet Propulsion Laboratory New Technology Report No. 19186/8768, Pasadena, CA, September 1994.
- [3] Stephen D. Gedney, Faiza Lansing, Kathleen Virga, and Tom Kihm, "Explicit time-domain analysis of microwave circuit devices," The Concurrent Supercomputing Consortium Annual Report, 1994-1995, Paul Messina, Ed., 1995.
- [4] Stephen D. Gedney and Faiza Lansing, "Explicit time-domain analysis of microwave circuit devices and antennas," The Concurrent Supercomputing Consortium Annual Report, 1993-1994, Paul Messina, Ed., 1994.
- [5] Faiza Lansing, Stephen D. Gedney, and Edith Huang, "Application of the modified three-dimensional finite-difference time-domain method to the analysis of miniature telecommunication components," The Concurrent Supercomputing Consortium Annual Report, 1991-1992, Paul Messina, Ed., 1992.
- [7] Stephen D. Gedney, and Faiza Lansing, "Explicit Time Domain Analysis of Microwave Circuit Devices and Antennas," The Concurrent Supercomputing Consortium Annual Report, 1993-1994, Paul Messina, Ed., 1994.
- [8] Stephen D. Gedney, "Book Review: The Finite Element Method in Electromagnetics, Jianming Jin, John Wiley and Sons, 1993," *IEEE Antennas and Propagation Society Magazine*, June 1994.

CONFERENCE PROCEEDING (FULL PAPER):

- [1] Stephen Gedney and Raj Mittra, "Analysis of large parallel-plate simulators using the numerical electromagnetics code(NEC)," Proceedings of the Fourth Annual Review of Progress in Applied Computational Electromagnetics, Monterey, CA, March 22-24, 1988.
- [2] Stephen D. Gedney and Raj Mittra, "Field calculations of EMP parallel-plate simulators using a wire mesh approximation and the numerical electromagnetics code," 1986 AP-S International Symposium Digest, vol. 1, pp. 465-468, 1986.
- [3] Stephen Gedney and Raj Mittra, "The use of the FFT for the efficient solution of the problem of electromagnetic scattering by a body of revolution," 1988 AP-S International Symposium Digest, Syracuse NY, vol. I, pp. 92-96, June 1988.
- [4] Stephen D. Gedney and Raj Mittra, "An improved solution of open-region scattering problems using the finite element method," 1989 IEEE AP-S International Symposium Digest, vol. 3, pp. 1632-1635, June 1989
- [5] Stephen D. Gedney and Raj Mittra, "A hybrid method for the solution of the electromagnetic scattering by an inhomogeneously filled trough or slit in a thick conducting screen," IEEE Antennas and Propagation Society Symposium Digest, vol. 4, pp. 1730-1733, May 1990.
- [6] Stephen D. Gedney and Jin-Fa Lee, "A mixed element formulation for the efficient solution of electromagnetic scattering problems," The Fifth IEEE Biennial Conference on Electromagnetic Field Computation, Harvey Mudd College, Claremont, CA, August, 1992.
- [7] Hassan Hejase, Keith Whites and Stephen D. Gedney*, "Comparison between induced EMF and MoM methods in modeling circular loop antennas above finite reflectors," URSI Radio Science Meeting Digest, pg. 201, Chicago, IL, July 1993.
- [8] Stephen D. Gedney and Faiza Lansing, "Full wave analysis of printed microstrip devices using a generalized Yee-algorithm," 1993 IEEE Symposium on Antennas and Propagation Proceedings, Ann Arbor, MI, June 27-July 2, 1993.
- [9] Hassan Hejase and Stephen D. Gedney*, "Effect of a dielectric cover (superstrate) on radiated emissions from arbitrarily shaped printed circuit traces," URSI Radio Science Meeting Digest, pg. 15, Chicago, IL, July 1993.
- [10] Stephen D. Gedney, "A comparison of the performance of finite-difference time-domain, finite element time-domain, and discrete surface integral equation methods on high performance parallel computers," 1994 IEEE Symposium on Antennas and Propagation Digest, Seattle, WA, June 19-24, 1994.
- [11] Stephen D. Gedney and Faiza Lansing, "A parallel discrete surface integral equation method for the analysis of three-dimensional microwave circuit devices with planar symmetry," 1994 IEEE Symposium on Antennas and Propagation Proceedings Digest, Seattle, WA, June 19-24, 1994.
- [12] Stephen D. Gedney, "A rigorous full-wave analysis of electrical interconnects for VLSI packages," Topical Meeting on Electrical Performance of Electronic Packaging, Monterey, CA, November 2-4, 1994.

- [13] Umesh Navsariwala and Stephen D. Gedney, "An Implicit Finite Element Time-Domain Method With Unconditional Stability ," (invited paper) 1995 IEEE Symposium on Antennas and Propagation Digest, Newport Beach, CA June 18-23, 1995.
- [14] U. Navsariwala and S. D. Gedney, "An Unconditionally Stable Parallel Finite Element Time-Domain Algorithm," 1996 IEEE Symposium on Antennas and Propagation, Baltimore, MD, 1996.
- [15] S. D. Gedney, F. Lansing, R. T. Kihm, N. Owona and K. L. Virga, "Simulating "Large" Microwave Circuits With The Parallel Planar Generalized Yee Algorithm," *IEEE Symposium on Microwave Theory and Techniques*. San Francisco, CA: 1996.
- [16] S. D. Gedney, "The Application of the FDTD Method to EMC Analysis," *IEEE Symposium on Electromagnetic Compatibility*. Santa Clara, CA: 1996 (invited paper).
- [17] J. A. Roden, S. D. Gedney, and C. Paul, "The Application of the Non-Orthogonal FDTD Method to the Analysis of Twisted Pair Transmission Lines," *IEEE Symposium on Electromagnetic Compatibility*. Santa Clara, CA: 1996.
- [18] P. H. Harms, A. Roden, J. Maloney, M. Kesler, E. Kuster, and S. D. Gedney, "Numerical Analysis of Periodic Structures Using the Split Field Update Algorithm", *The Thirteenth Annual Review of Progress in Applied Computational Electromagnetics*, Monterey, CA: March 17-21, 1997.
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