Research Impact

Dr. Hadi's published research on FDTD theory development has a strong impact on the field of computational electromagnetics as evidenced by the number of citations it received so far:

250 citations according to ISI Web of Science

339 citations according to Google Scholar

Highly Cited Journal Articles (Sources: ISI Web of Science/Google Scholar)

H1. **M. F. Hadi** and M. Piket-May, "A Modified FDTD (2,4) Scheme for Modeling Electrically Large Structures With High Phase Accuracy," IEEE Transactions Antennas and Propagation, vol. 45, No. 2, pp. 254—264, February 1997 [116/184 Citations]
H2. **M. F. Hadi** and S. F. Mahmoud, "Optimizing the Compact-FDTD Algorithm for Electrically Large Waveguiding Structures," Progress in Electromagnetics Research, vol. 75, pp. 253—269, 2007 [21/22 Citations]
H3. **M. F. Hadi** and S. F. Mahmoud, "A High-Order Compact-FDTD Algorithm for Electrically Large Waveguide Analysis," IEEE Transactions on Antennas and Propagation, vol. 56, No. 8, pp. 2589—2598, August 2008 [15/18 Citations]
H4. A. M. Shreim and **M. F. Hadi,** "Integral PML Absorbing Boundary Conditions for the High-Order M24 FDTD Algorithm," Progress in Electromagnetics Research, vol. 76, pp. 141—152, 2007 [15/15 Citations]
H5. **M. F. Hadi**, "A Finite Volumes-Based 3-D Low Dispersion FDTD Algorithm," IEEE Transactions on Antennas and Propagation, vol. 55, No. 8, pp. 2287—2293, August 2007 [14/19 Citations]
H6. **M. F. Hadi** and R. K. Dib, "Phase-Matching the Hybrid FV24/S22 FDTD Algorithm," Progress in Electromagnetics Research, vol. 72, pp. 307—323, 2007 [13/13 Citations]
H7. **M. F. Hadi,** "A Versatile Split-Field 1-D Propagator for Perfect FDTD Plane Wave Injection," IEEE Transactions on Antennas and Propagation, vol. 57, No. 9, pp. 2691—2697, September 2009 [10/14 Citations]

Published Journal Articles

J1. **M. F. Hadi**, A. Z. Elsherbeni , R. C. Bollimuntha, and M. J. Piket-May, "Predicting Near-Field Performance for the Stretched-Coordinates PML Absorbing Boundary Conditions in Spherical FDTD," Submitted to IEEE Transactions on Antennas and Propagation, 2018
J2. **M. F. Hadi**, R. C. Bollimuntha, A. Z. Elsherbeni and M. J. Piket-May, "A Spherical FDTD Numerical Dispersion Relation Based on Elemental Spherical Wave Functions," IEEE Antennas and Wireless Propagation Letters, vol. 17, No. 5, pp. 784—788, May 2018
J3. **M. F. Hadi**, A. Z. Elsherbeni, M. J. Piket-May and S. F. Mahmoud "Radial Waves Based Dispersion Analysis of the Body-of Revolution FDTD Method," IEEE Transactions on Antennas and Propagation, vol. 65, No. 2, pp. 721—729, February 2017
J4. R. C. Bollimuntha, **M. F. Hadi**, M. J. Piket-May and A. Z. Elsherbeni, "Dispersion Optimized Plane Wave Sources for Scattering Analysis With Integral Based High Order Finite Difference Time Domain Methods," IET Microwaves, Antennas & Propagation, vol. 10, No. 9, pp. 976—982, June 2016

J5. R. Smith, A. Weiss, R. Bollimuntha, M. Piket-May, **M. F. Hadi** and A. Elsherbeni, "Merging VSim's Model Building and Visualization Tools with Custom FDTD Engines," ACES Express Journal, vol. 1, No. 1, pp. 16—19, January 2016

J6. M. A. Kourah, **M. F. Hadi** and A. S. Al-Zayed, "Extending the Enlarged Cell and Uniformly Stable Techniques to Modeling Curved Conductors in Two-Dimensional High-Order Finite-Difference Time-Domain Algorithms," International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, vol. 26, No. 3, pp. 238—250, May/Jun 2013

J7. **M. F. Hadi** and S. A. Esmaeili, "CUDA Fortran Acceleration for the Finite-Difference Time-Domain Method," Computer Physics Communications, vol. 184, No. 5, pp. 1395—1400, 2013

J8. **M. F. Hadi**, "Simplified Graphical Processor Acceleration of the Standard and High-Order Finite-Difference Time-Domain Algorithms," Electromagnetics, vol. 32, No. 7, pp. 401—410, October 2012

J9. **M. F. Hadi**, "The Case for Higher Computational Density in the Memory-Bound FDTD Method within Multicore Environments," International Journal of Antennas and Propagation, 2012

J10. **M. F. Hadi**, "Near-Field PML Optimization for Low and High Order FDTD Algorithms Using Closed-Form Predictive Equations," IEEE Transactions on Antennas and Propagation, vol. 59, No. 8, pp. 2933—2942, August 2011

J11. B. A. Al-Zohouri and **M. F. Hadi**, "Conformal Modelling of Perfect Conductors in the High-Order M24 Finite-Difference Time-Domain Algorithm," IET Microwaves, Antennas & Propagation, vol. 5, No. 5, pp. 583—587, April, 2011

J12. **M. F. Hadi**, "PML Absorbing Boundary Condition for the Integral-Based High-Order FV24 FDTD Algorithm," International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, vol. 24, No. 1, pp. 2—12, Jan/Feb 2011

J13. **M. F. Hadi** and Naif B. Almutairi, "Discrete Finite-Difference Time Domain Impulse Response Filters for Transparent Field Source Implementations," IET Microwaves, Antennas & Propagation, vol. 4, No. 3, pp. 381—389, March 2010

J14. **M. F. Hadi**, "A Versatile Split-Field 1-D Propagator for Perfect FDTD Plane Wave Injection," IEEE Transactions on Antennas and Propagation, vol. 57, No. 9, pp. 2691—2697, September 2009

J15. **M. F. Hadi**, "Compact Finite Difference Time Domain Absorbing Boundary Conditions for Electrically Large Waveguide Modeling," Electromagnetics, vol. 29, No. 4, pp. 291—302, May 2009

J16. **M. F. Hadi**, "Wide-Angle Absorbing Boundary Conditions for Low and High-Order FDTD Algorithms," Applied Computational Electromagnetics Society Journal, vol. 24, No. 1, pp. 9—15, February 2009

J17. **M. F. Hadi** and S. F. Mahmoud, "A High-Order Compact-FDTD Algorithm for Electrically Large Waveguide Analysis," IEEE Transactions on Antennas and Propagation, vol. 56, No. 8, pp. 2589—2598, August 2008

J18. A. M. Shreim and **M. F. Hadi,** "Integral PML Absorbing Boundary Conditions for the High-Order M24 FDTD Algorithm," Progress in Electromagnetics Research, vol. 76, pp. 141—152, 2007

J19. **M. F. Hadi** and S. F. Mahmoud, "Optimizing the Compact-FDTD Algorithm for Electrically Large Waveguiding Structures," Progress in Electromagnetics Research, vol. 75, pp. 253—269, 2007

J20. **M. F. Hadi** and R. K. Dib, "Phase-Matching the Hybrid FV24/S22 FDTD Algorithm," Progress in Electromagnetics Research, vol. 72, pp. 307—323, 2007

J21. **M. F. Hadi,** "A Finite Volumes-Based 3-D Low Dispersion FDTD Algorithm," IEEE Transactions on Antennas and Propagation, vol. 55, No. 8, pp. 2287—2293, August 2007

J22. **M. F. Hadi** and R. K. Dib, "Eliminating Interface Reflections in Hybrid Low-Dispersion FDTD Algorithms," Applied Computational Electromagnetics Society Journal, vol. 22, No. 3, pp. 306—314, November 2007

J23. **M. F. Hadi** and M. Piket-May, "A Modified FDTD (2,4) Scheme for Modeling Electrically Large Structures With High Phase Accuracy," IEEE Transactions on Antennas and Propagation, vol. 45, No. 2, pp. 254—264, February 1997