

Dan Jiao
February/2024

Name: Dan Jiao

Professional Experiences:

Oct. 2001 - Dec. 2003	Sr. CAD Engineer (Grade 7), Intel Corporation, Santa Clara, CA
Jan. 2004 - Dec. 2004	Staff Engineer (Grade 8), Intel Corporation, Santa Clara, CA, (Very Early Promotion)
Jan. 2005 - Sept. 2005	Sr. Staff Engineer (Grade 9), Intel Corporation, Santa Clara, CA, (Very Early Promotion)
Jan. 2004 - Sept. 2005	Corporate-Wide Consultant on Electromagnetics and High-frequency Computer Aided Design, Intel Corporation, Santa Clara, CA
Sept. 2005 - Aug. 2009	Assistant Professor , School of Electrical and Computer Engineering (ECE), Purdue University
Aug. 2009 - Aug. 2013	Associate Professor with tenure , School of Electrical and Computer Engineering, Purdue University
Aug. 2013 -	Full Professor , School of Electrical and Computer Engineering, Purdue University
Jan. 2018 - July 2020	Director of Graduate Admissions, School of ECE, Purdue University
July 2020 -	Associate Head for Resource Planning and Management, Elmore Family School of Electrical and Computer Engineering, Purdue University
July 2022 -	Synopsys Professor (named professorship)

Education:

<i>Degree</i>	<i>Date</i>	<i>School</i>
PhD	Oct. 2001	Univ. of Illinois at Urbana-Champaign
PhD Student	1996-1998	University of Science and Technology of China, P. R. China
MSEE	July 1996	Anhui University, P. R. China Graduation with the Highest Honor
BSEE	July 1993	Anhui University, P. R. China Graduation with the Highest Honor Exempted from Graduate Entrance Exam

Professional and Honorary Society Memberships:

Fellow of Institute of Electrical and Electronics Engineering (**IEEE**)

Member of the following societies:

- IEEE Antennas and Propagation (AP) Society
- IEEE Microwave Theory and Techniques (MTT) Society
- IEEE Council on Electronic Design Automation
- IEEE Components, Packaging, and Manufacturing Technology
- Society of Industrial and Applied Mathematics (SIAM)
- IEEE Women in Engineering

Honors and Awards:

- [1] The Applied Computational Electromagnetics Society (ACES) Computational Electromagnetics Award 2022

This award honors career achievements and substantial, major contributions in the field of computational electromagnetics. One recipient each year, considered as the ACES's highest award.

- [2] IEEE MTT-Society Distinguished Microwave Lecturer (DML) Selection Committee 2022-
- [3] IEEE MTT Inter-Society Distinguished Lecturer (ISDL) Selection Committee 2022-
- [4] Guest Editor, Special Issue on "Women in Computational Physics," the *IEEE Journal on Multiscale and Multiphysics Computational Techniques* (J-MMCT) 2022
- [5] IEEE MTT-Society Distinguished Microwave Lecturer 2020

One of the three selected (<https://mtt.org/distinguished-microwave-lecturers/>), for the term of 2021-2023. The IEEE Microwave Theory and Techniques Society (MTT-S) each year carefully selects a group of Distinguished Microwave Lecturers (DMLs) who are internationally recognized experts and technical leaders in their fields within the Society. The DMLs are available to present talks to local chapters world-wide and serve as ambassadors for the Society.

- [6] Intel's 2019 Outstanding Researcher Award 2019

Annually, Intel recognizes the exceptional contributions made through Intel university-sponsored research with Outstanding Researcher Awards. These distinguished researchers and technologists have been nominated and selected by Intel's Corporate Research Council (CRC) and the Strategic Research Sector (SRC) committee.

In selecting the award winners, careful consideration is given to the fundamental insights, industrial relevance, technical difficulty, communications and potential student hiring associated with a candidate's research program. Prof. Jiao is one of the 7 recipients.

[7] Conference General Chair, *IEEE MTT-S International Conference on Numerical Electromagnetic and Multiphysics Modeling and Optimization* (NEMO), Boston, USA, May 2019. 2019

[8] Chair of WIE (Women in Engineering) of the IEEE AP-S (Antennas and Propagation Society) 2019

[9] Appointed to Tatsuo Itoh Prize (IEEE MWCL Best Paper) committee 2019, 2020, 2021, 2022

[10] Selected to IEEE Fellows Committee of the IEEE AP-S (Antennas and Propagation Society) 2018, 2021, 2022, 2023

This Committee selects new IEEE Fellows for AP-S society

[11] Chair of the Best Paper Awards Committee of the IEEE AP-S 2018

This Committee selects Best Transactions Papers published in the last year

[12] Chair of WIE (Women in Engineering) of the IEEE AP-S (Antennas and Propagation Society) 2018

[13] Chair of WIE (Women in Engineering) of the IEEE AP-S (Antennas and Propagation Society) 2017

[14] Selected to the IEEE AP-S (Antennas and Propagation Society) Fellows Committee 2016

This Committee selects new IEEE Fellows for AP-S society.

[15] Elevated to IEEE Fellow Nov. 2015

For contributions to computational electromagnetics.

[16] ELATE Fellow May 2014

Prof. Jiao was among the 21 women faculty selected across the country as the 2014-2015 Fellow of ELATE (Executive Leadership in Academic Technology and Engineering) at Drexel, a national leadership program for women in the academic STEM fields.

- [17] Sergei A. Schelkunoff Best Paper Award of the IEEE Antennas and Propagation Society 2013

The Sergei A. Schelkunoff Prize Paper Award is presented to the author of the BEST PAPER published in the *IEEE Transactions on Antennas and Propagation* during the previous year. This paper is titled “Explicit Time-Domain Finite-Element Method Stabilized for an Arbitrarily Large Time Step,” published in the *IEEE Transactions on Antennas and Propagation*, vol. 60, no. 11, pp. 5240-5250, Nov. 2012, authored by Qing He, Houle Gan, and Prof. Dan Jiao. Qing He and Houle Gan are Prof. Jiao’s Ph.D. students.

- [18] University Faculty Scholar 2013

University Faculty Scholars at Purdue are select associate and full professors who have been in that rank for no more than five years and are on an accelerated path toward academic distinction. University Faculty Scholars receive additional funding to support their research.

- [19] Chosen for National Academy of Engineering’s 2011 US Frontiers of Engineering symposium 2011

Prof. Jiao was among the 85 of the nation’s brightest young engineers selected to take part in the National Academy of Engineering’s (NAE) 17th annual US Frontiers of Engineering symposium. The participants — engineers ages 30 to 45 who are performing exceptional engineering research and technical work in industry, academia, and government — were nominated by fellow engineers or organizations and chosen from approximately 315 applicants.

- [20] IEEE Transactions on Advanced Packaging 2010 BEST PAPER AWARD Finalist 2010

Prof. Jiao’s paper was one of the three finalists. The paper was titled “A Theoretically Rigorous Full-Wave Finite-Element-Based Solution of Maxwell’s Equations from DC to High Frequencies,” published in *the IEEE Trans. Advanced Packaging*, vol. 33, no. 4, pp. 1043-1050, 2010. It was nominated for fundamentally resolving the low-frequency breakdown problem in 3-D full-wave solvers.

- [21] Ruth and Joel Spira Outstanding Teaching Award 2010

Bestowed by School of Electrical and Computer Engineering at Purdue University

- [22] NSF CAREER Award 2008

- The proposal was titled “From $O(N)$ to $O(M)$: Scalable Algorithms for Large Scale Electromagnetics-Based Analysis and Design of Next Generation VLSI Circuits.”
- [23] DARPA Young Faculty Award Finalist 2007
- One of the 50 young faculty members selected throughout the United States. This is the second time Prof. Jiao was selected.
- The proposal was titled “Breaking the $O(N)$ Barrier: Scalable Algorithms for Large-Scale Electromagnetics-Based Analysis and Design of Next Generation Military Microsystems.”
- [24] One of the two Purdue Nominees for the Packard Fellowship for Science and Engineering 2007
- Every year, the Packard Foundation invites the presidents of 50 universities to nominate two young professors each from their institutions.
- [25] ONR Award through Young Investigator Program 2006
- Ranked top 20 nationally. The proposal was titled “A fast and high-capacity electromagnetic solution for high-frequency mixed-signal IC design.”
- [26] DARPA Young Faculty Award Finalist 2006
- One of the 50 young faculty members selected throughout the United States. The competition was carried out in three rounds. There were 50 members who were selected into the final round
- The proposal was titled “Co-Design Technologies for Ultra Large-Scale Integration (CODE-for-ULSI).”
- [27] Jack and Cathie Kozik Faculty Start-up Award, 2006
- Recognize one outstanding new faculty at Purdue ECE.
- [28] BEST PAPER AWARD, DTTC 2004
- D. Jiao, J. Kim, and C. Dai, “BroadSpice: Generic Broadband SPICE Model of High-Speed Circuits,” *2004 Intel Design and Test Technology Conference (DTTC)* (This is the premium conference at Intel, which is held once a year).
- [29] Intel Technology Computer Aided Design (TCAD) Divisional Achievement Award 2004

- For the development of interconnect modeling application platform
- [30] Intel Logic Technology Development (LTD) Divisional Achievement Recognition Award 2003
- In recognition of her excellent work on the industry-leading BroadSpice modeling/simulation capability
- [31] Intel TCAD Divisional Achievement Award 2003
- For the development of innovative full-wave solvers for high frequency IC design
- [32] Paper Ranked No. 1, SISPAD 2003
- D. Jiao, M. Mazumder, S. Chakravarty, C. Dai, M. J Kobrinsky, M. C Harmes, and S. List, "A Novel Technique for Full-wave Modeling of Large-Scale Three-Dimensional High-Speed On/Off-chip Interconnect Structures." This paper was ranked No. 1 among all the papers submitted to *2003 International Conference on Simulation of Semiconductor Processes and Devices*. In this conference, a score was given by the review panel to every paper submitted to this conference.
- [33] Intel LTD Team Quality Award 2002
- For her outstanding contribution to the development of the measurement capability and simulation tools for high frequency on-chip cross-talk
- [34] Intel Hero Award (the tenth recipient Intel-wide) 2002
- For the timely and accurate two- and three-dimensional full-wave simulations, bestowed by Intel's Components Research
- [35] Raj Mittra Outstanding Research Award, UIUC 2000
- Recognize the best graduate student researcher in Electromagnetics area, Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign
- [36] Research Achievement Award, Anhui Province, P. R. China 1998
- [37] Graduation with the Highest Honor, Anhui University 1996
- [38] Excellent Graduate Student Award, Anhui University

1995-1996, 1994-1995

[39] Exempted from the Graduate Entrance Examination, Anhui University 1993

Only 1 student was selected out of each department.

[40] Graduation with the Highest Honor, Anhui University 1993

[41] Highest Undergraduate Scholarship, ranked No. 1 in Dept. of Electronic Engineering each semester during undergraduate years, Anhui University 1989-1993

Honors and Awards with Students

[1] [CADENCE'S DIVERSITY IN TECHNOLOGY SCHOLARSHIP](#) (Student: Vinicius Cabral Do Nascimento, Advisor: D. Jiao) Nov. 2023

[2] HONORABLE MENTION AWARD (Student: Vinicius Cabral Do Nascimento, Advisor: D. Jiao), *the 2023 IEEE International Symposium on Antennas and Propagation*. July 2023

This paper is titled "Patch-Based Perfectly Matched Layer Scheme in Three-Dimensional Unstructured Meshes." Student received a \$2000 stipend.

[3] HONORABLE MENTION AWARD (Student: Shuzhan Sun, Advisor: D. Jiao), *the 2022 IEEE International Symposium on Antennas and Propagation*. July 2022

This paper is titled "Stability Control of Unsymmetrical Time-Domain Methods," Awarded a stipend of \$1500.

[4] BEST Student Paper Award Finalist (Student: S. Sun, Advisor: D. Jiao), *2021 IEEE Antennas and Propagation Symposium (AP-S)* Dec. 2021

This paper is titled "Split-Field Domain Decomposition Algorithm with Fast Convergence for Electromagnetic Analysis," awarded a stipend of \$1600. One of the eleven finalists.

[5] HONORABLE MENTION AWARD (Student: Y. Wang, Advisor: D. Jiao), *the 2021 IEEE International Symposium on Antennas and Propagation*. Dec. 2021

This paper is titled "A One-Stage $O(N \log N)$ Algorithm for Generating Nested Low-Rank Representation of Electrically Large Volume Integral Equations." Awarded a stipend of \$1500.

- [6] BEST Student Paper Award Finalist (Student: L. Xue, Advisor: D. Jiao), 2020 IEEE Antennas and Propagation Symposium (AP-S)
July 2020

This paper is titled “Fast Method for Accelerating Convergence in Iterative Solution of Frequency-Domain Partial Differential Equation Methods.” One of 10 papers selected as finalists, and awarded a stipend of \$1600.

- [7] HONORABLE MENTION AWARD (Student: C. Yang, Advisor: D. Jiao), *the 2020 IEEE International Symposium on Antennas and Propagation*.
July 2020

This paper is titled “Nested Reduction Algorithm for Generating H²-Matrix Representation of Electrically Large Surface Integral Operators from FMM.” A stipend of \$1500.

- [8] BEST Student Paper Award Finalist (Student: L. Xue, Advisor: D. Jiao), IEEE International Microwave Symposium (IMS) Symposium.
June 2019

This paper is titled “Rapid Inverse Modeling of Integrated Circuit Layout in Both Frequency and Time Domain,” the 2019 IEEE International Microwave Symposium (IMS) held in Boston, MA.

- [9] BEST Student Paper Award Finalist (Student: S. Sun, Advisor: D. Jiao), *the 2019 IEEE International Symposium on Antennas and Propagation*.
July 2019

This paper is titled “Multiphysics Modeling of Crosstalk Effect in Graphene-Encapsulated Cu Nano-Interconnects,” *the 2019 IEEE International Symposium on Antennas and Propagation*, held in July 2019, Atlanta, GA.

- [10] HONORABLE MENTION AWARD (Student: M. Ma, Advisor: D. Jiao), *the 2018 IEEE International Symposium on Antennas and Propagation*.
July 2018

This paper is titled “Accuracy Controlled H²-Matrix-Matrix Product in Linear Complexity and Its Applications,” *the 2018 IEEE International Symposium on Antennas and Propagation*, held in July 2018, Boston, MA.

- [11] HONORABLE MENTION AWARD (Student: M. Ma, Advisor: D. Jiao), *the 2018 IEEE International Symposium on Antennas and Propagation*.
July 2018

This paper is titled “Symmetric Positive Semi-Definite FDTD Subgridding Algorithm in Both Space and Time,” *the 2018 IEEE International Symposium on Antennas and Propagation*, held in July 2018, Boston, MA.

- [12] Cadence's Women in Technology Scholarship (Student: M. Ma, Advisor: D. Jiao). 2018

Cadence Women in Tech Scholarship winners are selected to receive a \$5,000 scholarship. Winners must demonstrate a strong academic record and exemplify leadership and demonstrate passion in technology.

- [13] IEEE Region 4 Outstanding Student Award (Student: Michael Hayashi, Advisor: D. Jiao) 2018

The “IEEE Region 4 Outstanding Student” Award recognizes one student who has exhibited exceptional performance both as a student and as a young professional through his or her contributions to the Institute, their university and membership in Region 4.

- [14] HONORABLE MENTION AWARD (Student: M. Ma, Advisor: D. Jiao), *the 2016 IEEE International Symposium on Antennas and Propagation*. June 2016

This paper is titled “New HSS-Factorization and Inversion Algorithms with Exact Arithmetic for Efficient Direct Solution of Large-Scale Volume Integral Equations,” *the 2016 IEEE International Symposium on Antennas and Propagation*, held in June 26 to July 1, 2016, Fajardo, Puerto Rico.

- [15] BEST Student Paper Award Finalist (Student: J. Yan, Advisor: D. Jiao), IEEE International Microwave Symposium (IMS) Symposium. May 2016

This paper is titled “Explicit and Unconditionally Stable FDTD Method Without Eigenvalue Solutions,” the 2016 IEEE International Microwave Symposium (IMS) held in San Francisco, CA, May 22-27, 2016.

- [16] BEST Student Paper Award, 2nd Place winner, (Student: M. Ma, Advisor: D. Jiao), ACES 2016 conference. Mar. 2016

This paper is titled “HSS-Matrix Based Fast Direct Volume Integral Equation Solver for Electrodynamics Analysis,” the IEEE International Conference on Wireless Information Technology and Systems (ICWITS) and Applied Computational Electromagnetics (ACES), held in Honolulu, Hawaii in March 13-17, 2016.

- [17] BEST Student Paper Award, 2nd Place winner, (Student: B. Zhou, Advisor: D. Jiao), ACES 2015 conference. Mar. 2015

This paper is titled “Direct Finite Element Solver of Linear Complexity for Analyzing Electrically Large Problems,” the 31th International Review of Progress in Applied Computational Electromagnetics (ACES 2015) Conference, held in Williamsburg, VA in March 22-26.

- [18] BEST Student Paper Award Finalist (Student: M. Gaffar, Advisor: D. Jiao), IEEE International Microwave Symposium (IMS) Symposium. May 2015

This paper is titled “An Alternative Method for Making an Explicit FDTD Unconditionally Stable.”

- [19] Two BEST Paper Award Finalists, 2015 IEEE Symposium on Electromagnetic Compatibility and Signal Integrity Mar. 2015

One is titled “Method for Accurate and Efficient Signaling Analysis of Nonlinear Circuits” authored by Prof. Jiao and student Jianfang Zhu; the other is titled “Fast Structure-Aware Direct Time-Domain Finite Element Solver for Large-Scale On-Die Power Grid Simulation” authored by student Woochan Lee and Prof. Jiao.

- [20] BEST PAPER IN SESSION AWARD, (Student: B. Zhou, Advisor: D. Jiao), TECHCON 2014 conference. Sept. 2014

This best paper of chip-package co-design session is entitled “Linear (Optimal) Complexity Direct Full-Wave Solution of Full-Package Problems Involving over 10 Million Unknowns on a Single Computer.” TECHCON is the annual research conference held by SRC (Semiconductor Research Corporation). The technical papers selected represent a summary of the best research in SRC’s portfolio across all SRC’s research programs. Best Paper in Session awards are selected based on technical content, perceived value, technology transfer, and presentation.

- [21] BEST STUDENT PAPER AWARD Finalist (Student: S. Omar, Advisor: D. Jiao), the 2014 IEEE International Symposium on Antennas and Propagation (AP-S), the premium conference in Electromagnetics July 2014

S. Omar and D. Jiao, “An $O(N)$ Direct Volume IE Solver with a Rank-Minimized H^2 -Representation for Large-Scale 3-D Circuit Extraction in Inhomogeneous Materials.” Ranked the highest among all student papers in Computational electromagnetics.

- [22] BEST STUDENT PAPER AWARD Finalist (Student: S. Omar, Advisor: D. Jiao), IEEE International Microwave Symposium (IMS), the premium conference in Microwave June 2014

S. Omar and D. Jiao, "A Linear Complexity H^2 -matrix Based Direct Volume Integral Solver for Broadband 3-D Circuit Extraction in Inhomogeneous Materials."

- [23] BEST STUDENT PAPER AWARD Finalist, (Student: B. Zhou, Advisor: D. Jiao), *the 2013 IEEE International Symposium on Antennas and Propagation* 2013

B. Zhou and D. Jiao, "A Linear Complexity Direct Finite Element Solver for Large-Scale 3-D Electromagnetic Analysis."

- [24] BEST STUDENT PAPER AWARD Finalist, (Student: M. Gaffar, Advisor: D. Jiao), *the 2013 IEEE International Microwave Symposium (IMS)*, 2013

M. Gaffar and D. Jiao, "An Explicit and Unconditionally Stable FDTD Method for 3-D Electromagnetic Analysis."

- [25] BEST STUDENT PAPER AWARD (Student: Q. He, Advisor: D. Jiao), *the 2012 International Workshop on Finite Elements for Microwave Engineering (FEM2012)* 2012

This paper was titled "An Explicit and Unconditionally Stable Time-Domain Finite-Element Method of Linear Complexity."

- [26] BEST STUDENT PAPER AWARD Finalist (Student: W. Chai, Advisor: D. Jiao), *the 2012 International Annual Review of Progress in Applied Computational Electromagnetics (ACES)*, the premium conference in Computational Electromagnetics 2012

The paper was titled "A Theoretical Study on the Rank of the Integral Operators for Large-Scale Electrodynamics Analysis."

- [27] THREE HONORABLE MENTION AWARDS (Students: B. Zhou, F. Sheng, and W. Chai, Advisor: D. Jiao), *the 2012 IEEE International Symposium on Antennas and Propagation* 2012

B. Zhou and D. Jiao, "A Fast Direct Finite Element Solver for Large-Scale 3-D Electromagnetic Analysis."

F. Sheng and D. Jiao, "A Minimal Order Model from Zero to High Frequencies and Its Fast Generation for Finite-Element Based 3-D Electromagnetic Analysis."

W. Chai and D. Jiao, "A Fast H^2 -Based Integral Equation Solver with an Optimized H^2 -Partition and Minimized Rank for Large-Scale Electromagnetic Analysis."

- [28] BEST STUDENT PAPER AWARD Finalist (Student: Q. He, Advisor: D. Jiao), *the 2011 IEEE International Symposium on Antennas and Propagation*, the premium conference in Electromagnetics 2011

The paper was titled "An Explicit Time-Domain Finite-Element Method that is Unconditionally Stable." It was ranked the 4th in the final competition, the highest rank among papers in Computational Electromagnetics.

- [27] BEST STUDENT PAPER AWARD (Student: H. Liu, Advisor: D. Jiao), 2nd Place winner, *the 2011 International Annual Review of Progress in Applied Computational Electromagnetics (ACES)* 2011

The paper was titled "Layered H-Matrix Based LU factorization of Significantly Reduced Complexity for Direct Finite-Element-Based Computation of Large-Scale Electromagnetic Problems."

- [28] HONORABLE MENTION AWARD (Student: W. Chai, Advisor: D. Jiao), *the 2011 IEEE International Symposium on Antennas and Propagation* 2011

The paper was titled "An H^2 -Based Direct Integral Equation Solver of Linear Complexity for Full-Wave Extraction of 3-D Structures in Multiple Dielectrics."

- [29] IEEE Antennas and Propagation Society Doctoral Research Award (Student: W. Chai, Advisor: D. Jiao) 2010

For work titled "Beyond $O(M \log M)$ —An H^2 -Matrix Framework for Reducing the Complexity of Computational Electromagnetic Methods."

- [30] BEST STUDENT PAPER AWARD Finalist (Student: J. Zhu, Advisor: D. Jiao), *the 2010 IEEE International Symposium on Antennas and Propagation* 2010

The paper was titled "A Theoretically Rigorous Solution for Fundamentally Eliminating the Low-Frequency Breakdown Problem in Finite-Element-Based Full-Wave Analysis."

- [31] HONORABLE MENTION AWARD (Student: W. Chai, Advisor: D. Jiao), *the 2010 IEEE International Symposium on Antennas and Propagation* 2010

The paper was titled “A Complexity-Reduced H-Matrix Based Direct Integral Equation Solver with Prescribed Accuracy for Large-Scale Electrodynamical Analysis.

- [32] IEEE Antennas and Propagation Society Doctoral Research Award
(Student: H. Gan, Advisor: D. Jiao) 2009

One of the three recipients selected throughout the world for 2008-2009.

- [33] BEST STUDENT PAPER AWARD NOMINATION (Student: W. Chai, Advisor: D. Jiao), *the 2009 International Annual Review of Progress in Applied Computational Electromagnetics (ACES)* 2009

Honorable Mention Paper and Travel Support Award, (Student: J. Lee, Advisor: D. Jiao), *the 2008 IEEE International Symposium on Antennas and Propagation* 2008

Professional Society Activities:

Session Organizer and Chair, “New Challenges and Opportunities in Computational Electromagnetics,” *Progress in Electromagnetics Research Symposium, 2007.*

Session Chair, “Finite Element Method and Applications,” *2007 IEEE International Symposium on Antennas and Propagation.*

Technical Program Committee Member, *IEEE International Symposium on Antennas and Propagation* (the premium conference in Electromagnetics), 2008.

Session Organizer and Chair, “On-Chip Electromagnetics,” *2008 IEEE International Symposium on Antennas and Propagation.*

Session Chair, “Materials and Periodic Structures,” *The 9th Int. Workshop on Finite Elements for Microwave Engineering, Bonn, Germany, May 2008.*

Invited NSF Review Panelist, 2008

Invited NSF Career Review Panelist, 2009

Session Organizer and Chair, “Computational Electromagnetic Methods of Significantly Reduced Complexity for High-Speed IC Design,” *the 25th International Annual Review of Progress in Applied Computational Electromagnetics (ACES 2009)*

Invited Single Guest Editor for the special issue of *the IEEE Transactions on Advanced Packaging* titled “Recent Progress in Electrical Modeling and Simulation of High-Speed Integrated Circuits and Packages,” no. 4, 2010.

Associate Editor of the *IEEE Transactions on Advanced Packaging*, 2009-2011

Session Chair, “Finite Element Techniques and Domain Decomposition,” 2009 *IEEE International Symposium on Antennas and Propagation*.

Session Chair, “Preconditioning and Fast Methods II,” 2009 *IEEE International Symposium on Antennas and Propagation*.

Session Organizer and Chair, “Advanced Finite Element Methods for Circuit Modeling,” *the 10th Int. Workshop on Finite Elements for Microwave Engineering*, Oct 12th-13th, 2010, Meredith, NH, USA.

Invited NSF Review Panelist, 2010

Session Chair, “Fast Integral Equation Solution Schemes,” 2010 *IEEE International Symposium on Antennas and Propagation*.

Session Chair, “Modeling and Simulation,” *the IEEE 19th Conference on Electrical Performance of Electronic Packaging and Systems (EPEPS)*, 2010

External thesis evaluator, University of Hong Kong, 2008

External thesis evaluator, National University of Singapore, 2010

External proposal evaluator, Portugal Electrical Engineering Evaluation, 2010

Technical Program Committee Member, *the IEEE Electrical Design of Advanced Packaging & Systems Symposium (EDAPS)*, 2011

Workshop organizer, “H²-matrix based linear-complexity integral-equation solvers for large-scale electromagnetic analysis,” 2011 *International Annual Review of Progress in Applied Computational Electromagnetics*

Session Organizer and Chair, “Electrical Analysis of Electronic Packages,” *the ASME 2011 Pacific Rim Technical Conference and Exhibition on Packaging and Integration of Electron and Photonic Systems, MEMS and NEMS*.

Invited NSF Review Panelist, 2011

Session Chair, “Time-Domain Finite Element Method,” *the 2011 IEEE International Symposium on Antennas and Propagation*, July, 2011

Session Chair, "Model reduction and accelerated extraction," *the 48th ACM/EDAC/IEEE Design Automation Conference (DAC)*, June, 2011

Session Chair, "Jitter Modeling and Analysis," *the IEEE 20th Conference on Electrical Performance of Electronic Packaging and Systems*, Oct. 2011.

Session Chair, "Signal Integrity," *the IEEE Electrical Design of Advanced Packaging & Systems Symposium (EDAPS)*, Dec. 2011.

Technical Program Committee Member, *the 49th ACM/EDAC/IEEE Design Automation Conference (DAC)*, 2012, the premium conference in electronic design automation

Technical Program Committee Member, *the IEEE International Microwave Symposium (IMS)*, 2012, the premium conference in microwave

Associate Editor, *IEEE Trans. on Components, Packaging, and Manufacturing Technology*, 2011-

Invited NSF workshop participant, NSF Workshop on Micro, Nano, Bio Systems, March 2012

Session Chair, "Direct Matrix Solvers in CEM: PDEs and IEs," *the 2012 International Annual Review of Progress in Applied Computational Electromagnetics (ACES)*, April 2012.

Session Organizer and Chair, "FEM methods for the analysis and design of integrated circuits," *the 11th International Workshop on Finite Elements for Microwave Engineering*, June 2012.

Session Chair, "Integral Equation Solvers for Large and Multi-Scale Problems," *the 2012 IEEE International Symposium on Antennas and Propagation*, July 2012.

Session Chair, "Fast Methods," *the 2012 IEEE International Symposium on Antennas and Propagation*, July 2012.

Student Paper Competition Judge, *the 2012 IEEE International Microwave Symposium (IMS)*, June 2012.

Technical Program Committee Member, *the 50th ACM/EDAC/IEEE Design Automation Conference (DAC)*, 2013, the premium conference in electronic design automation

Technical Program Committee Member, *the IEEE International Microwave Symposium (IMS)*, 2013, the premium conference in microwave

- Technical Program Committee Member, *IEEE International Symposium on Antennas and Propagation*, 2013, the premium conference in Electromagnetics
- Technical Program Committee Member, *IEEE MTT International Microwave & RF Conference (IMaRC)*, 2013, premier annual international meeting in India for microwave theory and practice
- Session Chair, “Well-Conditioned Integral Equation Formulations,” *the IEEE International Symposium on Antennas and Propagation*, July 2013.
- Session Chair, “Advanced Frequency- and Time-Domain Finite Element Methods,” *the IEEE International Symposium on Antennas and Propagation*, July 2013.
- Session Chair, “Electromagnetics,” *the IEEE 22th Conference on Electrical Performance of Electronic Packaging and Systems (EPEPS)*, 2013.
- Steering Committee Member, *the first IEEE International Conference on Signal and Power Integrity (SIPI)*, 2014.
- Technical Program Committee, Vice-Chair for the Frequency- and Time-Domain Methods subcommittee, *the IEEE International Microwave Symposium (IMS)*, 2014, the premium conference in microwave
- Technical Program Committee, *IEEE International Conference on Numerical Electromagnetic Modeling and Optimization (NEMO)*, 2014.
- Technical Program Committee Member, *the 51th ACM/EDAC/IEEE Design Automation Conference (DAC)*, 2014, the premium conference in electronic design automation
- Technical Program Committee Member, *IEEE International Symposium on Antennas and Propagation*, 2014.
- NSF Review Panelist, 2014
- Technical Program Committee Member, *the 12th Int. Workshop on Finite Elements for Microwave Engineering*, 2014.
- Session Chair, Algebraic and Kernel-Dependent Solvers for Integral Equations, *IEEE International Symposium on Antennas and Propagation*, 2014
- Session Chair, Fast Integral Equation Solvers, *IEEE International Symposium on Antennas and Propagation*, 2014.

Session Chair, Time-Domain Finite Element and Discontinuous Galerkin Methods, *IEEE International Symposium on Antennas and Propagation*, 2014.

Session Chair, Advanced Methods for the Analysis and Design of High-Speed Interconnect, Packaging, and Printed Circuit Board Structures, *IEEE International Microwave Symposium (IMS)*, 2014.

Session Chair and Organizer, Fast Direct Solvers, the *12th Int. Workshop on Finite Elements for Microwave Engineering*, 2014.

Technical Program Committee, Vice Chair, Subcommittee of Time- and Frequency-domain EM analysis techniques, *IEEE International Microwave Symposium (IMS)*, 2015.

Technical Program Committee Member, *IEEE International Symposium on Antennas and Propagation*, 2015.

Chair, Subcommittee of Numerical Modeling and Simulation Techniques, Technical Program Committee, *IEEE International Conference on Electromagnetic Compatibility and Signal Integrity*, 2015.

Technical Program Committee, Member, *IEEE International Conference on Numerical Electromagnetic Modeling and Optimization (NEMO)*, 2015.

Technical Program Committee, Member, *Computational Electromagnetics International Workshop (CEM'15)*, 2015.

Session Chair, *Computational Electromagnetics International Workshop (CEM'15)*, July 2015.

Session Chair, Novel Finite Element and Domain Decomposition Methods, *IEEE International Symposium on Antennas and Propagation*, July 2015.

Session Chair, FDTD Methods, *IEEE International Symposium on Antennas and Propagation*, July 2015.

Session Chair, Integral Equations for Anisotropic and Inhomogeneous Objects in Frequency and Time Domain, *IEEE International Symposium on Antennas and Propagation*, July 2015.

Session Chair, Advanced Finite Element Methods, *IEEE International Symposium on Antennas and Propagation*, July 2015.

Session Chair and Organizer, Emerging Fast Time-Domain Methods, *IEEE MTT-S International Conference on Numerical Electromagnetic and Multiphysics Modeling and Optimization (NEMO)*, Aug. 2015.

Session Chair, Recent Advances in Computational Electromagnetics and Its Application, *International Conference on Electromagnetics in Advanced Applications (ICEAA)*, Sept. 2015.

NSF Review Panelist, 2016

Technical Program Committee, Chair, Subcommittee of Time- and Frequency Domain EM Analysis Techniques, *IEEE International Microwave Symposium (IMS)*, 2016.

Technical Program Committee Member, *IEEE International Symposium on Antennas and Propagation*, 2016.

Session Chair, Advances in Finite Element-Based Methods, *IEEE International Symposium on Antennas and Propagation*, June 2016.

Session Chair, Fast and Stable Integral Equation Solvers, *IEEE International Symposium on Antennas and Propagation*, June 2016.

Scientific Committee Member, *13th International Workshop on Finite Elements for Microwave Engineering*, 2016.

Chair, Subcommittee of Numerical Modeling and Simulation Techniques, Technical Program Committee, *IEEE International Conference on Electromagnetic Compatibility and Signal Integrity*, 2016.

Technical Program Committee Member, *IEEE International Conference on Computational Electromagnetics (ICCEM)*, 2016.

Technical Program Committee, Co-Chair, SC-1 Computational Electromagnetics, *Progress in Electromagnetics Research Symposium (PIERS)*, 2016.

Best Paper Award Judge, *Progress in Electromagnetics Research Symposium (PIERS)*, 2016.

Invited Tutorial, "Low-Complexity Direct Solvers," *IEEE International Conference on Wireless Information Technology and Systems (ICWITS) and Applied Computational Electromagnetics (ACES)*, 2016.

Keynote Speaker, "Recent Progress on Optimal-Complexity Direct Solvers," *IEEE International Conference on Computational Electromagnetics (ICCEM)*, 2017.

Three NSF Panels, 2017

Technical Program Committee, Chair, Subcommittee of Time- and Frequency Domain EM Analysis Techniques, *IEEE International Microwave Symposium (IMS)*, 2017.

Technical Program Committee Member, *IEEE International Symposium on Antennas and Propagation*, 2017.

Session Chair, Advances in Finite Element-Based Methods, *IEEE International Symposium on Antennas and Propagation*, July 2017.

Session Chair, FDTD Advances, *IEEE International Symposium on Antennas and Propagation*, July 2017.

Session Chair, Advances in Numerical Techniques for Microwave Engineering, *IEEE International Microwave (IMS)*, June 2017.

Technical Program Committee, Member, *Computational Electromagnetics International Workshop (CEM'17)*, 2017.

Technical Program Committee, Co-Chair, SC-1 Computational Electromagnetics, *Progress in Electromagnetics Research Symposium (PIERS)*, 2017.

Technical Program Committee Subcommittee Chair on CAD for RF/analog, 2017 IEEE/ACM International Conference on Computer-Aided Design (ICCAD), 2017.

Session Chair, Novel EM Theory and Numerical Methods, *International Applied Computational Electromagnetics Society (ACES) Symposium*, Aug. 2017.

Student Paper Competition Judge, *International Applied Computational Electromagnetics Society (ACES) Symposium*, Aug. 2017.

One of the five judges, ICEAA -IEEE AWPL Young Scientist Best Paper AWARD, Sept. 2017.

Technical Program Committee, Co-Chair, Subcommittee of Time- and Frequency Domain EM Analysis Techniques, *IEEE International Microwave Symposium (IMS)*, 2018

NSF Panelist, 2018

Technical Program Committee, Track Chair, CAD for Analog/Mixed-Signal/RF and Multi-Domain Modeling, *2018 IEEE/ACM International Conference on Computer-Aided Design (ICCAD)*, 2018.

Technical Program Committee Member, *IEEE International Symposium on Antennas and Propagation*, 2018.

Session Chair, “Fast Integral Equation Solvers,” *IEEE International Symposium on Antennas and Propagation*, July 2018.

Session Chair, “Hybrid Methods,” *IEEE International Symposium on Antennas and Propagation*, July 2018.

Session Chair, “Recent Advances in the Finite Element Method,” *IEEE International Symposium on Antennas and Propagation*, July 2018.

Student Paper Competition Chair, *International Applied Computational Electromagnetics Society (ACES) Symposium*, Aug. 2018, China.

Member of IEEE Fellows Committee of the IEEE AP-S (Antennas and Propagation Society), 2017-2018

Chair of the Best Paper Awards Committee of the IEEE AP-S, 2018-2019

Chair of WIE (Women in Engineering) of the IEEE AP-S, 2018-2020

Member, 2019 Tatsuo Itoh Prize (IEEE MWCL Best Paper) committee
Conference General Chair, *IEEE MTT-S International Conference on Numerical Electromagnetic and Multiphysics Modeling and Optimization (NEMO)*, Boston, USA, May 2019.

Keynote Speaker, “Accuracy Controlled H²-Arithmetic for the Development of Next Generation Fast Electromagnetic Solvers”, *International Applied Computational Electromagnetics Society Symposium (ACES 2019)*, Nanjing, China.

Session Chair, “Integral Equation Methods II,” *IEEE International Symposium on Antennas and Propagation*, July 2019.

Session Chair, “Finite Element Methods,” *IEEE International Symposium on Antennas and Propagation*, July 2019.

Session Chair, “Computational Electromagnetics II,” *IEEE International Symposium on Antennas and Propagation*, July 2019.

Session Chair, “Modeling Techniques for Electromagnetics,” IEEE Conf. CEM, Feb. 2019.

Session Chair, “Fast and Efficient Methods in Computational Electromagnetics,” IEEE Conf. CEM, Feb. 2019.

Technical Program Committee, Subcommittee of Time- and Frequency Domain EM Analysis Techniques, *IEEE International Microwave Symposium (IMS)*, 2019

MTT-1: Field Theory and Computational EM, Committee Member, 2019-

Technical Program Committee, Chair of SC-1, Subcommittee of Field Analysis and Guided Wave, *IEEE International Microwave Symposium (IMS)*, 2020

Technical Program Committee, Chair, Track of Computational & Numerical Techniques, *IEEE International Symposium on Antennas and Propagation*, 2020

Member, 2020 Tatsuo Itoh Prize (IEEE MWCL Best Paper) committee

Session Chair, "Fast Methods," *IEEE International Symposium on Antennas and Propagation*, July 2020.

Session Chair, "Finite Element Methods," *IEEE International Symposium on Antennas and Propagation*, July 2020.

Session Chair, "Novel Components, Waveguides, and Methods for Radiating Structures," *IEEE International Microwave Symposium (IMS)*, 2020

Invited Tutorial, "Accuracy Controlled H²-Arithmetic for the Development of Next Generation Fast Electromagnetic Solvers," *the 36th International Review of Progress in Applied Computational Electromagnetics Conference (ACES 2020)*.

Invited Speaker, "Fast Solvers for Electromagnetics-Based Analysis and Design of Integrated Circuits and Systems," *IEEE AP/MTTS Chicago Chapter*, 2020.

Distinguished Speaker

- IEEE RWW2021 and MTT-S winter Technical meeting, 1/18/2021
- IEEE MTT-S Guadalajara Chapter, Mexico, 3/17/2021
- IEEE Benelux AP/MTT Chapter, 3/11/2021
- IEEE North Jersey MTT USA, 3/23/2021
- IEEE MTT-S student branch chapter at the Advanced Radar Research Center (ARRC) at the University of Oklahoma, 4/9/2021
- IEEE MTTS SBC JADAVPUR UNIVERSITY India 4/10/2021
- IEEE Serbia and Montenegro MTT-S Chapter, 10/22/2021
- IEEE New Hampshire Joint MTT/APS chapter, 11/3/2021
- IEEE MTT/AP Orlando Chapter, 12/9/2021
- IEEE Spain Chapter, 1/27/2022
- IEEE Toronto Chapter, 2/25/2022
- IEEE MTT Webinar, 8/9/2022
- IEEE Malaysia AP/MTT/EMC Joint Chapter, 8/13/2022
- IEEE Shanghai Section Chapter, 11/21/2022

Technical Program Committee, Chair of SC-1, Subcommittee of Field Analysis and Guided Wave, *IEEE International Microwave Symposium (IMS)*, 2021

Member, 2021 Tatsuo Itoh Prize (IEEE MWCL Best Paper) Committee

IEEE Fellow Selection Committee of AP Society, 2022

Guest Editor, Special Issue on “Women in Computational Physics,” the *IEEE Journal on Multiscale and Multiphysics Computational Techniques (IEEE J-MMCT)* 2022

Member, 2022 Tatsuo Itoh Prize (IEEE MWCL Best Paper) Committee

Technical Program Committee, Subcommittee of Nonlinear Circuit and System, *IEEE International Microwave Symposium (IMS)*, 2022

NSF Career Panel, 2022

The University of Hong Kong Doctoral Thesis External Evaluator, 2022

Natural Sciences and Engineering Research Council of Canada grants review, 2022

Technical Program Committee, Subcommittee of Field analysis, guided waves, and computational EM, *IEEE International Microwave Symposium (IMS)*, 2023

Organizer, AI/ML Day in the 2023 *IEEE International Microwave Symposium (IMS)*

IEEE Fellow Selection Committee of AP Society, 2023

Invited Tutorial, “Fast Direct Solvers in Computational Electromagnetics,” *International Review of Progress in Applied Computational Electromagnetics*, Monterey, CA, Mar. 2023.

Keynote Speaker, “Computational Techniques and Design Automation for Semiconductors,” *2023 IEEE MTT-S International Conference on Numerical Electromagnetic and Multiphysics Modeling and Optimization (NEMO)*, Manitoba, Canada, 2023.

Technical Program Committee, *IEEE International Microwave Symposium (IMS)*, 2023

Member, 2023 Tatsuo Itoh Prize (IEEE MWCL Best Paper) committee

Master's Thesis Supervision Completed:

Jongwon Lee Dec. 2007, "A Linear-Time Eigenvalue Solver for Solving Large-Scale Wave Propagation Problems in Inhomogeneously Filled Waveguides."

Ph.D. Thesis Supervision Completed:

Houle Gan May 2010, "Time-Domain Finite-Element Reduction-Recovery Methods for Large-Scale Electromagnetics-Based Analysis and Design of Next Generation Integrated Circuits."

Jongwon Lee November 2010, "Linear-Complexity Complex-Valued Eigenvalue Solvers for Electromagnetics-Based Analysis and Design of High-Speed Integrated Circuits."

Jianfang Zhu July 2011, "On the Elimination of Low-Frequency Breakdown Problem and the Development of Fast Solvers for Finite-Element-Based Analysis of High-Speed ICs."

Haixin Liu Jan. 2012, "H-Matrix Based Fast Direct Finite-Element Methods for Large-Scale Electromagnetic Analysis."

Wenwen Chai Feb. 2012, "Linear-Complexity Integral-Equation Based Methods for Large-Scale Electromagnetic Analysis."

Feng Sheng Feb. 2012, "Fast Algorithms for Frequency-Domain Finite Element Based Analysis of Integrated Circuits and Packages."

Duo Chen June 2012, "Time-Domain Orthogonal Finite-Element Reduction-Recovery (OrFE-RR) Method for Electromagnetics-Based Analysis of Very Large Scale Integrated Circuit and Package Problems."

Qing He Nov. 2012, "An Electromagnetics-Based Circuit Simulator of Linear Complexity, Linear Speedup, and Unconditional Stability."

Saad Omar April 2014, "Fast Direct Volume Integral Equation Solvers for Large-Scale General Electromagnetic Analysis."

Bangda Zhou	Aug. 2015, “Linear Complexity Direct Finite Element Solvers for General Electromagnetic Forward Analysis and Inverse Design.”
Md Gaffar	Feb. 2016, “Explicit and Unconditionally Stable Finite Difference Time Domain Methods for General Electromagnetic Analysis.”
Woochan Lee	Sept. 2016, “Fast Time- and Frequency-Domain Finite-Element Methods for Electromagnetic Analysis.”
Jin Yan	Dec. 2016, “Matrix-Free Time-Domain Methods for General Electromagnetic Analysis.”
Kaiyuan Zeng	May 2019, “Accurate and Efficient Methods for Multiscale and Multiphysics Analysis.”
Miaomiao Ma	Aug. 2019, “Accuracy Explicitly Controlled H^2 -Matrix Arithmetic in Linear Complexity and Fast Direct Solutions for Large-Scale Electromagnetic Analysis.”
Li Xue	Sept. 2020, “Rapid Modeling and Simulation Methods for Large-Scale and Circuit-Intuitive Electromagnetic Analysis of Integrated Circuits and Systems.”
Chang Yang	Sept. 2021, “Fast Algorithms for Generating Minimal Rank H^2 -Matrix for Electrically Large Surface Integral Operators.”
Shuzhan Sun	Oct. 2021, “Multiphysics and Large-Scale Modeling and Simulation Methods for Advanced Integrated Circuit Design.”
Yifan Wang	July 2022, “Fast algorithms for Compressing Electrically Large Volume Integral Equations and Applications of Integral Equation Methods in Thermal and Quantum Engineering.”

PhD Thesis Students Currently Being Supervised:

Vinicius Nascimento	PhD (Prelim 08/2023)
Sanjeev Khare	MS/PhD, New Hire 08/2021
Boyuan Zhang	PhD, Fall 2018, co-advise with Weng Chew

Ivan Okhmatovskii	PhD, Fall 2020, co-advise with Weng Chew
Runwei Zhou	PhD, Fall 2022, New Hire
Gjorgji Vitanov	MS/PhD, Fall 2022, New Hire
Hongyang Liu	PhD, Spring 2023, New Hire

Master Student Supervised:

Skanda Kotethota	Master (2018)
Zhangchao Wei	Master (2021)
Saad Omar	Master (2011), PhD (2014)
Sanjeev Khare	Master (Dec. 2023)

PostDocs Supervised:

Yanpu Zhao	Dec. 2014 – Dec. 2015
Ping Li	Dec. 2015 – Dec. 2016
Yuhang Dou	Feb. 2020 – May 2022
Anlan Liu	Fall 2024 –

Visiting Scholars and PhD Students Supervised:

Yu Zhao	PhD Student (2017 – 2018)
Xunwang Dang	PhD Student (2017 – 2018)
Yi Wang	Visiting Faculty (2018 – 2019)
Ning Xu	PhD Student (2018 – 2020)

School Committee Activities:

Committee:	Graduate Committee
Activity:	Chair, 2015 – 2017
Committee:	Graduate Admission Committee
Activity:	Member, 2005 –
Activity:	Director, 2018 – 2020

Committee: Curriculum Committee
 Activity: Member, 2007 – 2010

Committee: ECE Head Search Committee
 Activity: Member, 2009 – 2010

Committee: ECE Ph.D. Qualify Exam Committee
 Activity: Member, 2011 – 2014

Area: FO Area
 Role: Chair, 2011 – 2014

Office: ECE Graduate Admissions
 Role: Director, Jan. 2018 – July 2020
 Leading and coordinating ECE graduate admissions of 2000+ on-campus and on-line students

Committee: ECE Power Area Faculty Search
 Activity: Member, 2020

Committee: ECE Computational EM Faculty Search
 Activity: Member, 2020

Committee: ECE FO Area MDH Faculty Search
 Activity: Chair, 2021

Committee: ECE UFS (University Faculty Scholar) and RS (Rising Star)
 Activity: Member, 2021 -

Committee: ECE Professor of Practice Search Committee
 Activity: Member, 2023 -

Engineering-Wide Committee Activities:

Committee: College of Engineering Strategic Plan, Professional Development Team
 Activity: Member: Aug. 2009 – Oct. 2009

Community: Engineering-wide New Faculty Community
 Role: Co-Chair, 2011 – 2014

Research Book Contributions and Books Published:

- [1] J. Zhu and D. Jiao, "Solution to the low-frequency breakdown problem in computational electromagnetics," Chapter 8 in the *Computational Electromagnetics: Recent Advances and Engineering Applications* edited by Raj Mittra. Springer, 2013, pp. 259-316.
- [2] D. Jiao and J. M. Jin, "Asymptotic waveform evaluation for broadband calculations," Chapter 15 in the *Fast and Efficient Algorithms in Computational Electromagnetics* edited by W. C. Chew, J. M. Jin, E. Michielssen, and J. M. Song. Norwood, MA: Artech House, 2001, pp. 699-727.
- [3] D. Jiao and J. M. Jin, "Finite element analysis in time domain," Chapter 12 in *The Finite Element Method in Electromagnetics*, New York: John Wiley & Sons, 2nd edition, 2002, pp. 529-584.

Serial Journal Articles:

Published Journal Articles

- [1] D. Jiao, W. L. Zhi, and X. L. Wu, "Study on the Traditional and Modified Prony Method for Extracting Poles from Electromagnetic Transient Responses," *Journal of Anhui University*, no. 4, pp. 27-34, Dec. 1993.
- [2] X. L. Wu, D. Jiao, W. L. Zhi, and Z. Q. Peng, "A Method for Singularity Extraction from Targets' Transient Responses via Spline Functions and Rational Approximation," *Journal of China University of Science and Technology*, vol. 26, no. 4, pp. 528-533, Dec. 1996. (First Tier in China)
- [3] X. L. Wu, D. Jiao, and S. J. Xu, "Application of Wavelet Transform for Removing High-Frequency Noise from Targets' Late-Time Transient Responses," *Chinese Journal of Electronics (English version of Acta Electronic Sinica)*, vol. 6, no. 3, pp. 82-86, July 1997. (First Tier in China)
- [4] X. L. Wu, D. Jiao, and F. Biao, "New Algorithm for Calculating Poles of a Thin Wire Scatterer by FFT Method," *Journal of Southeast University*, vol. 27, no. 5, pp. 109-113, Sept. 1997.
- [5] X. L. Wu, D. Jiao, W. L. Zhi, and P. Z. Qiu, "A New Algorithm for Calculating Natural Frequencies of Scattering Objects," *Chinese Journal of Electronics (English version of Acta Electronic Sinica)*, vol. 7, no. 2, pp. 205-209, April 1998. (First Tier in China)

- [6] D. Jiao, S. J. Xu, X. L. Wu, S. X. Li, "Recovery of Signal from Transient Responses Contaminated by Gaussian White Noise Based on Orthogonal Bases of Compactly Supported Wavelets in Frequency Domain," *Chinese Journal of Electronics (Acta Electronic Sinica)*, vol. 27, no. 6, pp. 120-122, June 1999. (First Tier in China)
- [7] D. Jiao, S. J. Xu, and X. L. Wu, "New Algorithm for Natural Frequency Extraction," *Progress in Natural Science*, China, vol. 9, no. 7, pp. 545-552, July 1999. (First Tier in China)
- [8] D. Jiao, X. Y. Zhu, and J. M. Jin, "Fast and Accurate Frequency-Sweep Calculations Using Asymptotic Waveform Evaluation and Combined-Field Integral Equation," *Radio Science*, vol. 34, no. 5, pp. 1055-1063, Sept.-Oct. 1999.
- [9] F. Ling, D. Jiao, and J. M. Jin, "Efficient Electromagnetic Modeling of Microstrip Structures in Multilayer Media," *IEEE Trans. Microwave Theory Tech.*, vol. 47, no. 9, pp. 1810-1818, Sept. 1999.
- [10] D. Jiao and J. M. Jin, "Fast Frequency-Sweep Analysis of RF Coils for MRI," *IEEE Trans. Biomed. Eng.*, vol. 46, no. 11, pp. 1387-1390, Nov. 1999.
- [11] D. Jiao and J. M. Jin, "Fast Frequency-Sweep Analysis of Cavity-Backed Microstrip Patch Antennas," *Microwave Opt. Tech. Lett.*, vol. 22, no. 6, pp. 389-393, Sept. 1999.
- [12] D. Jiao and J. M. Jin, "Fast Frequency-Sweep Analysis of Microstrip Antennas on a Dispersive Substrate," *Electron. Lett.*, vol. 35, no. 14, pp. 1122-1123, July 1999.
- [13] D. Jiao and J. M. Jin, "Asymptotic Waveform Evaluation for Scattering by a Dispersive Dielectric Object," *Microwave Opt. Tech. Lett.*, vol. 24, no. 4, pp. 232-234, Feb. 2000.
- [14] D. Jiao, J. M. Jin, and J. S. Shang, "Characteristic-Based Finite-Volume Time-Domain Method for Scattering by Coated Objects," *Electromagnetics*, vol. 20, no. 3, pp. 257-268, May-June 2000.
- [15] D. Jiao, J. M. Jin, and J. S. Shang, "Characteristic-Based Time-Domain Method for Antenna Analysis," *Radio Science*, vol. 36, no. 1, pp. 1-8, Jan./Feb. 2001.
- [16] D. Jiao, M. Lu, E. Michielssen, and J. M. Jin, "A Fast Time-Domain Finite Element-Boundary Integral Method for Electromagnetic Transient Analysis," *IEEE Trans. Antennas Propagat.*, vol. 49, no. 10, pp. 1453-1461, Oct. 2001.

- [17] D. Jiao and J. M. Jin, "Time-Domain Finite-Element Modeling of Dispersive Medium," *IEEE Microwave Wireless Components Letters*, vol. 11, pp. 220-223, May 2001.
- [18] D. Jiao, A. Erigin, B. Shanker, E. Michielssen, and J. M. Jin, "A Fast Higher-Order Time-Domain Finite Element-Boundary Integral Method for 3D Electromagnetic Transient Analysis," *IEEE Trans. Antennas Propagat.*, vol. 50, no. 9, pp. 1192-1202, Sept. 2002.
- [19] D. Jiao and J. M. Jin, "A General Approach for the Stability Analysis of Time-Domain Finite Element Method," *IEEE Trans. Antennas Propagat.*, vol. 50, no. 11, pp. 1624-1632, Nov. 2002.
- [20] D. Jiao and J. M. Jin, "An Effective Algorithm for Implementing Perfectly Matched Layers in Time-Domain Finite-Element Simulation of Open-Region EM Problems," *IEEE Trans. Antennas Propagat.*, vol. 50, no. 11, pp. 1615-1623, Nov. 2002.
- [21] D. Jiao and J. M. Jin, "Time-Domain Finite Element Simulation of Cavity-Backed Microstrip Patch Antennas," *Microwave Opt. Tech. Lett.*, vol. 32, no. 4, pp. 251-254, Feb. 2002.
- [22] D. Jiao and J. M. Jin, "Three-Dimensional Orthogonal Vector Basis Functions for Time-Domain Finite Element Solution of Vector Wave Equations," *IEEE Trans. Antennas Propagat.*, vol. 51, no. 1, pp. 59-66, Jan. 2003.
- [23] D. Jiao, J. M. Jin, E. Michielssen, and D. Riley, "Time-Domain Finite-Element Simulation of Three-Dimensional Scattering and Radiation Problems Using Perfectly Matched Layers," *IEEE Trans. Antennas Propagat.*, vol. 51, no. 2, pp. 296-305, Feb. 2003.
- [24] M. J. Kobrinsky, S. Chakravarty, D. Jiao, M. C. Harmes, S. List, and M. Mazumder, "Experimental Validation of Crosstalk Simulations for On-Chip Interconnects Using S-Parameters," *IEEE Transactions on Advanced Packaging*, vol. 28, no. 1, pp. 57-62, Feb. 2005.
- [25] D. Jiao, S. Chakravarty, and Changhong Dai, "A Layered Finite-Element Method for Electromagnetic Analysis of Large-Scale High-Frequency Integrated Circuits," *IEEE Trans. Antennas Propagat.*, vol. 55, no. 2, pp. 422-432, Feb. 2007.
- [26] H. Gan and D. Jiao, "A Time-Domain Layered Finite Element Reduction Recovery (LAFE-RR) Method for High-Frequency VLSI Design," *IEEE Trans. Antennas Propagat.*, vol. 55, no. 12, pp. 3620-3629, Dec. 2007.

- [27] D. Jiao, "A Recovery Algorithm for Frequency-Domain Layered Finite Element Analysis of Large-Scale High-Frequency Integrated Circuits," *IEEE Microwave and wireless components letters*, vol. 17, no. 8, pp. 553-555, Aug. 2007.
- [28] D. Jiao, Joong-Ho Kim, and Jiangqi He, "Efficient Full-Wave Characterization of Discrete high-Density Multi-Terminal Decoupling Capacitors for High-Speed Digital Systems," *IEEE Transactions on Advanced Packaging*, vol. 31, no. 1, pp. 154-162, Feb. 2008.
- [29] H. Gan and D. Jiao, "An Alternative Analytical Reduction Scheme in the Time-Domain Layered Finite Element Reduction Recovery Method for High-Frequency VLSI Design," *Microwave and Optical Technology Letters*, vol. 50, no. 9, pp. 2337-2341, Sept. 2008.
- [30] H. Gan and D. Jiao, "A Recovery Algorithm of Linear Complexity in the Time-Domain Layered Finite Element Reduction Recovery (LAFERR) Method for Large-Scale Electromagnetic Analysis of High-Speed ICs," *IEEE Trans. on Advanced Packaging*, vol. 31, no. 3, pp. 612-618, Aug. 2008.
- [31] J. Zhu and D. Jiao, "A Unified Finite-Element Solution from Zero Frequency to Microwave Frequencies for Full-Wave Modeling of Large-Scale Three-Dimensional On-Chip Interconnect Structures," *IEEE Trans. Advanced Packaging*, vol. 31, no. 4, pp. 873-881, Nov. 2008.
- [32] D. Jiao, J. Zhu, and S. Chakravarthy, "A Fast Frequency-Domain Eigenvalue-Based Method for Full-Wave Modeling of Large-Scale Three-Dimensional On-Chip Interconnect Structures," *IEEE Trans. Advanced Packaging*, vol. 31, no. 4, pp. 890-899, Nov. 2008.
- [33] H. Gan and D. Jiao, "A Fast-Marching Time-Domain Layered Finite-Element Reduction-Recovery Method for High-Frequency VLSI Design," *IEEE Trans. Antennas Propagat.*, vol. 57, no. 2, pp. 577-581, Feb. 2009.
- [34] F. Sheng and D. Jiao, "Fast Reduction Algorithms in the Frequency-Domain Layered Finite Element Method for the Electromagnetic Analysis of Large-Scale High-Frequency Integrated Circuits," *IEEE Trans. Advanced Packaging*, vol. 33, no. 1, pp. 266-275, Feb. 2010.
- [35] H. Gan and D. Jiao, "Hierarchical Finite Element Reduction Recovery Method for Large-Scale Transient Analysis of High-Speed Integrated Circuits," *IEEE Trans. Advanced Packaging*, vol. 33, no. 1, pp. 276-284, Feb. 2010.

- [36] D. Chen and D. Jiao, "Time-Domain Orthogonal Finite-Element Reduction-Recovery (OrFE-RR) Method for Electromagnetics-Based Analysis of Large-Scale Integrated Circuit and Package Problems," *IEEE Transactions on Computer Aided Design of Integrated Circuits and Systems*, vol. 28, no. 8, pp. 1138-1149, Aug. 2009.
- [37] W. Chai and D. Jiao, "An H^2 -Matrix-Based Integral-Equation Solver of Reduced Complexity and Controlled Accuracy for Solving Electrodynamical Problems," *IEEE Trans. Antennas Propagat.*, vol. 57, no. 10, pp. 3147-3159, Oct. 2009.
- [38] J. Lee, V. Balakrishnan, C.-K. Koh, and D. Jiao, "A Linear-Time Complex-Valued Eigenvalue Solver for Electromagnetic Analysis of Large-Scale On-Chip Interconnect Structures," *IEEE Trans. MTT*, vol. 57, no. 8, pp. 2021-2029, Aug. 2009.
- [39] F. Sheng, H. Gan, and D. Jiao, "Fast Iterative Solution Algorithms in the Frequency-Domain Layered Finite Element Method for Analyzing Integrated Circuits," *IEEE Trans. Advanced Packaging*, vol. 33, no. 2, pp. 524-533, 2010.
- [40] J. Lee, V. Balakrishnan, C.-K. Koh, and D. Jiao, "From $O(k^2N)$ to $O(M)$: A Fast Complex-Valued Eigenvalue Solver For Large-Scale On-Chip Interconnect Analysis," *IEEE Trans. MTT*, vol. 57, no. 12, pp. 3219-3228, Dec. 2009.
- [41] W. Chai and D. Jiao, "H- and H^2 -Matrix-Based Fast Integral-Equation Solvers for Large-Scale Electromagnetic Analysis," *IET Microwaves, Antennas & Propagation*, vol. 4, no. 10, pp. 1583-1596, Oct. 2010. (**INVITED PAPER**).
- [42] W. Chai and D. Jiao, "An LU Decomposition Based Direct Integral Equation Solver of Linear Complexity and Higher-Order Accuracy for Large-Scale Interconnect Extraction," *IEEE Trans. Advanced Packaging*, vol. 33, no. 4, pp. 794-803, Nov. 2010 (**INVITED PAPER**).
- [43] J. Zhu and D. Jiao, "Eliminating the Low-Frequency Breakdown Problem in 3-D Full-Wave Finite-Element-Based Analysis of Integrated Circuits," *IEEE Trans. MTT*, vol. 58, no. 10, pp. 2633-2645, Oct. 2010.
- [44] Q. He and D. Jiao, "Fast Electromagnetics-Based Co-Simulation of Linear Network and Nonlinear Circuits for the Analysis of High-Speed Integrated Circuits," *IEEE Trans. MTT*, vol. 58, no. 12, pp. 3677-3687, Dec. 2010.

- [45] H. Liu and D. Jiao, "Existence of H-matrix Representations of the Inverse Finite-Element Matrix of Electrodynamical Problems and H-Based Fast Direct Finite-Element Solvers," *IEEE Trans. MTT*, vol. 58, no. 12, pp. 3697-3709, Dec. 2010.
- [46] J. Zhu and D. Jiao, "A Theoretically Rigorous Full-Wave Finite-Element-Based Solution of Maxwell's Equations from DC to High Frequencies," *IEEE Trans. Advanced Packaging*, vol. 33, no. 4, pp. 1043-1050, Nov. 2010.
- [47] D. Chen, D. Jiao, and C. Koh, "Parallel Time-Domain Finite-Element Simulator of Linear Speedup and Electromagnetic Accuracy for the Simulation of Die-Package Interaction," *IEEE Trans. on Components, Packaging, and Manufacturing Technology*, vol. 1, no. 5, pp. 752-760, May 2011.
- [48] W. Chai and D. Jiao, "Dense Matrix Inversion of Linear Complexity for Integral-Equation Based 3-D Capacitance Extraction," *IEEE Trans. MTT*, vol. 59, no. 10, pp. 2404-2421, Oct. 2011.
- [49] J. Lee, D. Chen, V. Balakrishnan, C.-K. Koh, and D. Jiao, "A Quadratic Eigenvalue Solver of Linear Complexity for 3-D Electromagnetics-Based Analysis of Large-Scale Integrated Circuits," *IEEE Transactions on Computer Aided Design of Integrated Circuits and Systems*, vol. 31, no. 3, pp. 380-390, Mar. 2012.
- [50] J. Zhu and D. Jiao, "A Rigorous Solution to the Low-Frequency Breakdown in Full-Wave Finite-Element-Based Analysis of General Problems Involving Inhomogeneous Lossless/Lossy Dielectrics and Non-ideal Conductors," *IEEE Trans. MTT*, vol. 59, no. 12, pp. 3294-3306, Dec. 2011.
- [51] W. Chai and D. Jiao, "Direct Matrix Solution of Linear Complexity for Surface Integral-Equation Based Impedance Extraction of Complicated 3-D Structures," *Proceedings of the IEEE*, special issue on "Large Scale Electromagnetic Computation for Modeling and Applications," vol. 101, no. 2, pp. 372-388, Feb. 2013. (**INVITED PAPER**).
- [52] Q. He, D. Chen, and D. Jiao, "From Layout Directly to Simulation: A First-Principle Guided Circuit Simulator of Linear Complexity and Its Efficient Parallelization," *IEEE Trans. on Components, Packaging, and Manufacturing Technology*, vol. 2, no. 4, pp. 687 - 699, April 2012. (**Ranked No. 1 among the top 25 most frequently accessed articles of this journal in 2013.**)

- [53] J. Zhu and D. Jiao, "A Fast Full-Wave Solution that Eliminates the Low-Frequency Breakdown Problem in a Reduced System of Order One," *IEEE Trans. on Components, Packaging, and Manufacturing Technology*, vol. 2, no. 11, pp. 1871 - 1881, 2012.
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- [175] M. Ma and D. Jiao, "New HSS-Factorization and Inversion Algorithms with Exact Arithmetic for Efficient Direct Solution of Large-Scale Volume Integral Equations," *Progress In Electromagnetics Research Symposium (PIERS)*, Aug. 2016. **(INVITED)**
- [176] M. Ma and D. Jiao, "Exact-Arithmetic HSS-Inversion Algorithm for Fast Direct Solution of Electrically Large Volume Integral Equations," *International Conference on Electromagnetics in Advanced Applications (ICEAA)*, Sept. 2016. **(INVITED)**
- [177] J. Yan and D. Jiao, "A Symmetric Positive Semi-Definite FDTD Subgridding Algorithm for Arbitrary Grid Ratios with Uncompromised Accuracy," *IEEE International Microwave Symposium (IMS)*, June 2017.
- [178] P. Li and D. Jiao, "A Direct Synthesis Algorithm Having a Broad Range of Validity for Electromagnetic Design," *IEEE International Symposium on Antennas and Propagation*, July 2017.

- [179] Y. Zhao, D. Jiao, and J. Mao, "Hybrid Cross Approximation for Electric Field Integral Equation Based Scattering Analysis," *IEEE International Symposium on Antennas and Propagation*, July 2017.
- [180] J. Yan and D. Jiao, "A General Approach to Ensuring the Stability of Unsymmetrical FDTD Subgridding Schemes," *IEEE International Symposium on Antennas and Propagation*, July 2017.
- [181] J. Yan and D. Jiao, "Matrix-Free Time-Domain Method for Thermal Analysis in Unstructured Meshes," *IEEE International Symposium on Antennas and Propagation*, July 2017.
- [182] J. Yan and D. Jiao, "A Symmetric Positive Semi-definite 3-D FDTD Subgridding Algorithm for Arbitrary Grid Settings without Compromising Accuracy," *IEEE International Symposium on Antennas and Propagation*, July 2017.
- [183] M. Ma and D. Jiao, "Accuracy Directly Controlled Fast Direct Solutions of General H^2 -Matrices," *IEEE International Symposium on Antennas and Propagation*, July 2017.
- [184] K. Zeng and D. Jiao, "Frequency-Domain Method Having a Diagonal Mass Matrix in Arbitrary Unstructured Meshes for Efficient Electromagnetic Analysis," *IEEE International Symposium on Antennas and Propagation*, July 2017.
- [185] L. Xue and D. Jiao, "Analytical Method for Finding the Nullspace of Stiffness Matrix in the Finite Element Method," *IEEE International Symposium on Antennas and Propagation*, July 2017.
- [186] M. Ma and D. Jiao, "Accuracy Directly Controlled Fast Direct Solution of General H^2 -Matrices and Resulting Fast Direct Volume Integral Equation Solvers," the 2017 International Annual Review of Progress in Applied Computational Electromagnetics (ACES) in China, Aug. 2017.
- [187] M. Ma and D. Jiao, "Accuracy Directly Controlled Fast Direct Solutions of General H^2 -Matrices and Its Application to Electrically Large Electromagnetic Analysis," *International Conference on Electromagnetics in Advanced Applications (ICEAA)*, Sept. 2017. **(INVITED)**
- [188] M. Ma and D. Jiao, "Linear-Complexity Direct Integral Equation Solver with Explicit Accuracy Control for Large-Scale Interconnect Extraction," *International Annual Review of Progress in Applied Computational Electromagnetics (ACES)*, Mar. 2018. **(INVITED)**

- [189] L. Xue and D. Jiao, "Fast and Rigorous Method for Solving Low-Frequency Breakdown in Full-Wave Finite-Element-Based Solution of General Lossy Problems," *International Annual Review of Progress in Applied Computational Electromagnetics (ACES)*, Mar. 2018. **(INVITED)**
- [190] K. Zeng and D. Jiao, "Matrix-Free Method for Maxwell-Thermal Co-Simulation in Unstructured Meshes," *IEEE International Microwave Symposium (IMS)*, June 2018.
- [191] M. Ma and D. Jiao, "Accuracy Controlled Direct Integral Equation Solver of Linear Complexity with Change of Basis for Large-Scale Interconnect Extraction," *IEEE International Microwave Symposium (IMS)*, June 2018.
- [192] C. Yang and D. Jiao, "Method for Generating a Minimal-Rank H^2 -Matrix from FMM for Electrically Large Analysis," *IEEE International Symposium on Antennas and Propagation*, July 2018.
- [193] S. Sun and D. Jiao, "Multiphysics Simulation of High-Speed Graphene-Based Interconnects in Time Domain," *IEEE International Symposium on Antennas and Propagation*, July 2018.
- [194] M. Ma and D. Jiao, "Accuracy Controlled H^2 -Matrix-Matrix Product in Linear Complexity and Its Applications," *IEEE International Symposium on Antennas and Propagation*, July 2018. **(HONORABLE MENTION AWARD, \$1500 STIPEND)**
- [195] L. Xue and D. Jiao, "Fast FDTD Method for Large-Scale Layout Extraction and Analysis of Integrated Circuits," *IEEE International Symposium on Antennas and Propagation*, July 2018.
- [196] K. Zeng and D. Jiao, "Symmetric Positive Semi-Definite FDTD Subgridding Algorithm in Both Space and Time," *IEEE International Symposium on Antennas and Propagation*, July 2018. **(HONORABLE MENTION AWARD, \$1500 STIPEND)**
- [197] K. Zeng and D. Jiao, "Explicit and Unconditionally Stable FDTD with Analytical Method for Identifying Unstable Modes," *IEEE International Symposium on Antennas and Propagation*, July 2018.
- [198] L. Xue and D. Jiao, "Broadband and Sparse Finite-Element Formulation Free of Low-Frequency Breakdown," *IEEE International Symposium on Antennas and Propagation*, July 2018.
- [199] S. Sun and D. Jiao, "Transient Multiphysics Simulation of High-Speed Graphene-Based Interconnects," *PIERS 2018*, Aug. 2018. **(INVITED)**

- [200] M. Ma and D. Jiao, "Accuracy Controlled \mathcal{H}^2 Matrix-Matrix Product in Linear Complexity," *PIERS 2018*, Aug. 2018. (**INVITED**)
- [201] M. Ma and D. Jiao, "Direct Solution of General H^2 -Matrix with Controlled Accuracy and Change of Cluster Bases for Large-Scale Electromagnetic Analysis," *IEEE International Conference on Numerical Electromagnetic Modeling and Optimization (NEMO)*, Aug. 2018. (**INVITED**)
- [202] M. Ma and D. Jiao, "Accuracy-Controlled and Structure-Preserved H^2 -Matrix-Matrix Product in Linear Complexity," *2018 International Conference on Electromagnetics in Advanced Applications (ICEAA)*, Sept. 2018. (**INVITED**)
- [203] M. Ma, D. Jiao, J. Yan, and J. Zhu, "Method for Accurate and Efficient Signaling Analysis of Nonlinear Circuits," *SRC TECHCON*, Sept. 2018.
- [204] M. Ma and D. Jiao, "Non-Leaf-Level Algorithms in Structure Preserving HSS Matrix Inversion in Exact Arithmetic," *IEEE International Conference on Computational Electromagnetics (ICCEM)*, Mar. 2019 (**Ulrich L. Rohde Paper Award Finalist**)
- [205] M. Ma and D. Jiao, "Direct Factorization of General \mathcal{H}^2 -Matrices with Controlled Accuracy and Concurrent Change of Cluster Bases for Large-Scale Circuit Extraction," *IEEE International Conference on Computational Electromagnetics (ICCEM)*, Mar. 2019 (**Best Student Paper Award Finalist**)
- [206] K. Zeng and D. Jiao, "Explicit Unconditionally Stable Symmetric Positive Semi-Definite FDTD Subgridding Algorithm with Analytical Removal of Unstable Modes," *IEEE MTT-S International Conference on Numerical Electromagnetic Modeling and Optimization (NEMO)*, May 2019.
- [207] L. Xue and D. Jiao, "Method for Analytically Finding the Null Space of Stiffness Matrix for Both Zeroth- and Higher-Order Curl-Conforming Vector Bases," *IEEE MTT-S International Conference on Numerical Electromagnetic Modeling and Optimization (NEMO)*, May 2019.
- [208] M. Ma and D. Jiao, "Accuracy-Controlled and Rank-Minimized H^2 Matrix-Matrix Product with Change of Cluster Bases in Linear Complexity," *IEEE MTT-S International Conference on Numerical Electromagnetic Modeling and Optimization (NEMO)*, May 2019.

- [209] S. Sun and D. Jiao, "Multiphysics Modeling and Simulation of 3-D Cu-Graphene Hybrid Nano-Interconnects," *IEEE MTT-S International Conference on Numerical Electromagnetic Modeling and Optimization (NEMO)*, May 2019
- [210] L. Xue and D. Jiao, "Rapid Inverse Modeling of Integrated Circuit Layout in Both Frequency and Time Domain," *IEEE International Microwave Symposium (IMS)*, June 2019 (**Best Student Paper Award Finalist**)
- [211] L. Xue and D. Jiao, "Fast Finite Difference Method for First-Principles Based Parasitic Extraction of Integrated Circuits," *IEEE International Symposium on Antennas and Propagation*, July 2019.
- [212] M. Ma and D. Jiao, "Linear-Complexity H^2 -Based Direct Sparse Solver for Electromagnetic and Multiphysics Analysis," *IEEE International Symposium on Antennas and Propagation (AP-S)*, July 2019.
- [213] C. Yang and D. Jiao, "Fast Algorithms for Converting an FMM-Based Representation of Electrically Large Integral Operators to a Minimal-Rank H^2 -Matrix," *IEEE International Symposium on Antennas and Propagation (AP-S)*, July 2019.
- [214] S. Sun and D. Jiao, "Multiphysics Modeling of Crosstalk Effect in Graphene-Encapsulated Cu Nano-Interconnects," *IEEE International Symposium on Antennas and Propagation (AP-S)*, July 2019. (**Best Student Paper Award Finalist**)
- [215] K. Zeng and D. Jiao, "Explicit Unconditionally Stable Symmetric Positive Semi-Definite FDTD Subgridding Algorithm with Analytical Removal of Unstable Modes," *IEEE International Symposium on Antennas and Propagation (AP-S)*, July 2019.
- [216] D. Wei and D. Jiao, "Truncating Matrix-free Time-Domain Method with PML for Solving 3-D Open Region Problems," *IEEE International Symposium on Antennas and Propagation (AP-S)*, July 2019.
- [217] C. Yang and D. Jiao, "Nested Reduction Algorithm for Generating H^2 -Matrix Representation of Electrically Large Surface Integral Operators from FMM," *IEEE International Symposium on Antennas and Propagation (AP-S)*, July 2020. (**HONORABLE MENTION AWARD, \$1500 STIPEND**)
- [218] D. Wei and D. Jiao, "Accurate and Stable Method for Solving Maxwell's Equations in Non-Conformal Mixed Tetrahedron and Brick Meshes," *IEEE International Symposium on Antennas and Propagation (AP-S)*, July 2020.

- [219] Li Xue and D. Jiao, "Fast Method for Accelerating Convergence in Iterative Solution of Frequency-Domain Partial Differential Equation Methods," *IEEE International Symposium on Antennas and Propagation (AP-S)*, July 2020. **(Best Student Paper Award Finalist, \$1600 Stipend)**
- [220] Y. Wang and D. Jiao, "Fast $O(N \log N)$ Algorithm for Generating H^2 -Representation of Electrically Large Volume Integral Equations," *IEEE International Symposium on Antennas and Propagation (AP-S)*, July 2020.
- [221] Y. Dou and D. Jiao, "Reduced Order Method for Solving Large-Scale Quadratic Eigenvalue Problems," *International Applied Computational Electromagnetics Society (ACES) Symposium*, Aug. 2021.
- [222] Y. Dou, D. Jiao, J. Yan and J. Zhu, "Method for Optimizing Equalization in Nonlinear Signaling Analysis," *International Applied Computational Electromagnetics Society (ACES) Symposium*, Aug. 2021.
- [223] Z. Cai, M. Liu, and D. Jiao, "Ritz Neural Network (RitzNN) Method for $H(\text{curl})$ Problems," *International Applied Computational Electromagnetics Society (ACES) Symposium*, Aug. 2021.
- [224] C. Yang and D. Jiao, "Nested Pseudo skeleton Approximation Algorithm for Generating H^2 -Representation of Electrically Large Surface Integral Operators," *International Applied Computational Electromagnetics Society (ACES) Symposium*, Aug. 2021.
- [225] Y. Wang and D. Jiao, "A One-Stage $O(N \log N)$ Algorithm for Generating Nested Low-Rank Representation of Electrically Large Volume Integral Equations," *IEEE International Symposium on Antennas and Propagation (AP-S)*, Dec. 2021. **(Honorable Mention Paper Award, \$1500 Stipend)**
- [226] S. Sun and D. Jiao, "Split-Field Domain Decomposition Algorithm with Fast Convergence for Electromagnetic Analysis," *IEEE International Symposium on Antennas and Propagation (AP-S)*, Dec. 2021. **(Best Student Paper Award Finalist, \$1600 Stipend)**
- [227] C. Yang and D. Jiao, "A Simple and Effective Method for Compressing Electrically Large Integral Operators," *IEEE International Symposium on Antennas and Propagation (AP-S)*, Dec. 2021.

- [228] V. Nascimento and Dan Jiao, "Conformal Perfectly Matched Layer for Matrix-Free Time-Domain Method in Unstructured Meshes," *IEEE International Symposium on Antennas and Propagation (AP-S)*, Dec. 2021.
- [229] B. Zhang, D. Jiao, and W. Chew, "Implementation of Discrete Exterior Calculus in Solving the A-Phi Formulation," *IEEE International Symposium on Antennas and Propagation (AP-S)*, Dec. 2021.
- [230] Y. Dou and D. Jiao, "Minimal-Order Model for Fast Electromagnetic Analysis of On-Chip Power Grid," *IEEE International Symposium on Antennas and Propagation (AP-S)*, Dec. 2021.
- [231] Y. Dou, D. Jiao, J. Yan, J. Zhu, and A Norman, "Fast Method for Large-Scale Signaling Analysis of Nonlinear Circuits Including Worst-Case Eye and Bit Error Rate Analysis," *IEEE International Microwave Symposium*, 2021.
- [232] D. Jiao, M. Liu and Z. Cai, "Minimization Formulation for Neural Network Based Solution of Maxwell's Equations in Frequency Domain," *IEEE International Symposium on Antennas and Propagation (AP-S)*, July 2022.
- [233] V. Nascimento and D. Jiao, "Patch-Based Matrix-Free Time-Domain Method in 3D Unstructured Meshes," *IEEE International Symposium on Antennas and Propagation (AP-S)*, July 2022.
- [234] S. Sun and D. Jiao, "Stability Control of Unsymmetrical Time-Domain Methods," *IEEE International Symposium on Antennas and Propagation (AP-S)*, July 2022. **(HONORABLE MENTION AWARD, \$1500 STIPEND)**
- [235] Yifan Wang, Wenbo Sun, Zubin Jacob, and Dan Jiao, "Simulation of Metallic Quantum Gate Structures with Advanced Volume Integral Equation Solver," *International Applied Computational Electromagnetics Society Symposium (ACES)*, Mar. 2023. **(INVITED)**
- [236] Dan Jiao, "A Fast Rank-Revealing Method for Solving High-Dimensional Global Optimization Problems," *IEEE International Microwave Symposium (IMS)*, June, 2023.
- [237] V. Nascimento and D. Jiao, "Matrix-Free Time-Domain Method Truncated with PML in Unstructured Meshes," 2023 *IEEE MTT-S International Conference on Numerical Electromagnetic and Multiphysics Modeling and Optimization (NEMO'2023)*, June, 2023.

- [238] Runwei Zhou, Dan Jiao, Zubin Jacob, “Fast Volume Integral Equation Based Modeling of Quantum Gate Circuitry,” *2023 IEEE MTT-S International Conference on Numerical Electromagnetic and Multiphysics Modeling and Optimization (NEMO’2023)*, June, 2023.
- [239] Y. Dou, D. Jiao, and J. Zhu, “Method of Signaling Analysis Including Jitter Effect for Large-Scale Nonlinear Link,” *2023 IEEE MTT-S International Conference on Numerical Electromagnetic and Multiphysics Modeling and Optimization (NEMO’2023)*, June, 2023.
- [240] C. Yang and D. Jiao, “Efficient Analytical Skeleton Approximation for Compressing Electrically Large Integral Operators,” *IEEE International Symposium on Antennas and Propagation (AP-S)*, July 2023.
- [241] Runwei Zhou, Wenbo Sun, Sathwik Bharadwaj, Zubin Jacob, and Dan Jiao, “Fast Volume Integral Equation Based Modeling and Simulation of Nonlocal Effects in Quantum Computing Devices,” *IEEE International Symposium on Antennas and Propagation (AP-S)*, July 2023.
- [242] V. Nascimento and D. Jiao, “Patch-Based Perfectly Matched Layer Scheme in Three-Dimensional Unstructured Meshes,” *IEEE International Symposium on Antennas and Propagation (AP-S)*, July 2023. **(HONORABLE MENTION AWARD, \$2000 STIPEND)**
- [243] Michael Joseph Smith, Seunghyun Hwang, Vinicius Cabral Do Nascimento, Qiang Qiu, Cheng-Kok Koh, Ganesh Subbarayan, Dan Jiao, “Real-Time Precision Prediction of 3-D Package Thermal Maps via Image-to-Image Translation,” *IEEE Conference on Electrical Performance of Electronic Packaging and Systems*, Oct. 2023. **(Collaborative research produced by Rapid-HI Elmore Center)**

Invited Talks:

- [1] “Computational Electromagnetics for Fast Full-wave Design and Analysis of Next Generation Circuits,” *California Institute of Technology*, Mar. 2003.
- [2] “Computational Electromagnetics for Fast Full-wave Design and Analysis of Next Generation Circuits,” *Massachusetts Institute of Technology*, Mar. 2003.
- [3] “Computational Electromagnetics for High-Frequency IC Design,” *IEEE International Symposium on Antennas and Propagation*, 2004.

- [4] "Computer-Aided Next Generation Microsystem Design with Electromagnetic Accuracy," *The Johns Hopkins University*, Feb. 2004.
- [5] "Computer-Aided Design of Next Generation Circuits with Electromagnetic Accuracy," *Duke University*, April, 2004.
- [6] "Surface-based finite element method for large-scale 3D Circuit Modeling," *IEEE 14th Topical Meeting on Electrical Performance of Electronic Packaging*, 2005.
- [7] "Toward Accurate and Fast Broadband Modeling of the Die-Package Interaction," *Intel Corporation*, Hillsboro, OR, Aug. 2006.
- [8] "High-Capacity Electromagnetic Solutions for High-Speed Full-Chip Design," *University of Illinois at Urbana-Champaign*, Oct. 2006.
- [9] "High-Capacity Electromagnetic Solutions for High-Speed Full-Chip Design," *University of Michigan*, Nov. 2006.
- [10] "A Time-Domain Layered Finite-element Reduction Recovery Method for Next Generation IC Design," *DARPA Young Faculty Award Workshop*, Arlington, Nov. 2006.
- [11] "Breaking the $O(N)$ Barrier: Scalable Algorithms for Large Scale Electromagnetics-Based Analysis and Design of Next Generation VLSI Circuits," *Intel Corporation*, Santa Clara, CA, Oct. 2007.
- [12] "Breaking the $O(N)$ Barrier: Scalable Algorithms for Large Scale Electromagnetics-Based Analysis and Design of Next Generation Military Microsystems," *DARPA Young Faculty Award Workshop*, Arlington, Nov. 2007.
- [13] "An H^2 -Matrix-Based Integral-Equation Solver of Linear-Complexity for Large-Scale Full-Wave Modeling of 3D Circuits," *Intel Corporation*, Santa Clara, CA, Oct. 2008.
- [14] "Time-Domain Orthogonal Finite-Element Reduction-Recovery (OrFE-RR) Method for Fast and Accurate Broadband Simulation of Die-Package Interaction," *Intel Corporation*, Santa Clara, CA, Oct. 2008.
- [15] "Linear-Complexity Integral-Equation-Based Solvers for Solving Large-Scale Electrodynamical, Electrostatic, and Magnetostatic Problems," *Synopsys Inc.*, Mountain View, CA, Oct. 2008.

- [16] "A Parallel Transient Simulator of Linear Speedup and Electromagnetic Accuracy for the Simulation of Die-Package Interaction," *Intel Corporation*, Hillsboro, OR, Oct. 2009.
- [17] "An Unconditionally Stable Time-Domain Finite Element Method of Significantly Reduced Computational Complexity for Large-Scale Simulation of IC and Package Problems," *Intel Corporation*, Hillsboro, OR, Oct. 2009.
- [18] "H²-Matrix-Based Fast Direct and Iterative Integral-Equation Solvers for Large-Scale Electromagnetic Analysis," *University of Illinois at Urbana-Champaign*, Mar. 2009.
- [19] "Fast Algorithms for Electromagnetics-Based Modeling and Simulation of High-Speed Integrated Circuits and Packages," *Massachusetts Institute of Technology*, June, 2009.
- [20] "Linear-Complexity Computational Electromagnetic Methods for the Analysis and Design of VLSI Circuits," *Shanghai Jiaotong University*, China, May 2010.
- [21] "Linear-Complexity Computational Electromagnetic Methods for the Analysis and Design of VLSI Circuits," *Zhejiang University*, China, May 2010.
- [22] "Linear-Complexity Computational Electromagnetic Methods for the Analysis and Design of Very Large Scale Integrated Circuits," *University of Science and Technology of China*, May 2010.
- [23] "Linear-Complexity Computational Electromagnetic Methods for the Analysis and Design of Very Large Scale Integrated Circuits," *Anhui University*, China, May 2010.
- [24] "Linear-Complexity Computational Electromagnetic Methods for Large-Scale Circuit Analysis," *Purdue University, Math Department*, April 2010.
- [25] "An H-matrix based framework for reducing the complexity of computational electromagnetic methods," *IEEE APS and MTT Chicago Chapter*, Nov. 2010.
- [26] "A Rigorous Method for Fundamentally Eliminating the Low-Frequency Breakdown Problem in Full-Wave Electromagnetics-Based Analysis," *University of Illinois at Urbana-Champaign*, April 2011.

- [27] “Recent Progress at Purdue in Integrated Circuit Modeling and Simulation Guided by Electromagnetics-Based First Principles,” *Sandia National Lab*, Albuquerque, NM, July 2011.
- [28] “An Extraction-Free Circuit Simulator of Linear Complexity and Its Linear Speedup,” *Intel Corporation*, Santa Clara, CA, Oct. 2011.
- [29] “Direct Matrix Solutions of Linear Complexity for the Modeling and Simulation of Next-Generation Integrated Circuits and Systems,” *NSF Workshop on Micro, Nano, Bio Systems*, Mar. 2012.
- [30] “Direct Matrix Solutions of Linear Complexity for Rapid Modeling and Design of High Bandwidth Package Interconnects,” *SRC IPS Back End Processes and Packaging Meeting*, Stanford University, CA, June 2012.
- [31] “Solution to Two Open Problems in Electromagnetics,” *Penn State University*, State College, PA, September, 2012.
- [32] “Explicit Time-Domain Methods that are Unconditionally Stable,” *IEEE International Symposium on EMC*, Aug. 2013.
- [33] “Direct Electromagnetic Solvers of Linear Complexity for Large-Scale Integrated Circuit Design,” *Georgia Institute of Technology*, EMAG Distinguished Lecturer Program, March, 2014.
- [34] “Explicit Time-Domain Methods that are Unconditionally Stable,” *Anhui University*, China, Oct. 2014.
- [35] “Direct Solvers of Linear Complexity for Large-Scale Electromagnetic Analysis,” *Beijing Institute of Technology*, China, Oct. 2014.
- [36] “Direct Solvers of Linear Complexity for Large-Scale Electromagnetic Analysis,” *Tsinghua University*, China, Oct. 2014.
- [37] “Low-Complexity Direct Solvers,” *the IEEE International Conference on Wireless Information Technology and Systems (ICWITS) and Applied Computational Electromagnetics (ACES)*, Honolulu, Hawaii in March 13-17, 2016.
- [38] “Explicit Time Domain Methods that Are Unconditionally Stable,” *University of Electronic Science and Technology of China*, Aug. 2016.
- [39] “Recent Progress on Optimal-Complexity Direct Solvers,” *IEEE International Conference on Computational Electromagnetics (ICCEM)*, Mar. 2017. (Keynote)

- [40] “Matrix-free Time-Domain Methods for Solving PDEs in Multiphysics,” *International workshop on high-performance computing for electromagnetics and multiphysics modeling*, Hangzhou, China, May 2017.
- [41] “Reducing Computational Complexity: A Need Never Out of Date,” EM/Multiphysics based Microwave Modeling and Design Workshop, *IEEE MTT-S International Microwave Symposium*, June 4-9, 2017.
- [42] “Accuracy Directly Controlled Fast Direct Solution of General H^2 -Matrices and Resulting Fast Direct Volume Integral Equation Solvers,” *International Applied Computational Electromagnetics Society Symposium (ACES)*, Aug. 2017, China.
- [43] “Accurate and Efficient Signaling Analysis of Nonlinear Circuits,” Intel Corporation, Hillsboro, OR, June 2018.
- [44] “Fast Direct Solvers of Controlled Accuracy for Large-Scale Electromagnetic Analysis,” 2018 *International Applied Computational Electromagnetics Society Symposium (ACES)*, Aug. 2018, China.
- [45] “Accuracy Directly Controlled Fast Direct Solutions of General H^2 -Matrices,” *Conference on Fast Direct Solvers*, Dept. of Mathematics, Purdue University, Nov. 2018.
- [46] “Rapid Modeling and Analysis Framework for Full-Chip/Package/Board Layout Automation,” *DARPA ERI Program Kickoff*, June 2018.
- [47] “Next-generation fast algorithms for electromagnetics-based design and analysis of high-performance integrated circuits, packages, and boards,” *IEEE Wireless and Microwave Technology Conference (Wamicon)*, April 2019. (Invited Speech)
- [48] “Accuracy Controlled H^2 -Arithmetic for the Development of Next Generation Fast Electromagnetic Solvers,” *Int. Applied Computational Electromagnetics Society Symposium (ACES 2019)*, Aug. 2019. (Keynote Speech)
- [49] “Compact Inverse Model of Large-Scale Integrated Circuit Layout,” 9th International Congress on Industrial and Applied Mathematics (ICIAM 2019), Valencia, Spain, Sept. 2019.
- [50] “Fast Solvers for Electromagnetics-Based Analysis and Design of Integrated Circuits and Systems,” *IEEE AP/MTTS Chicago Chapter*, Dec. 2020.

- [51] “Fast Solvers for Electromagnetics-Based Analysis and Design of Integrated Circuits and Systems,” *IEEE RWW2021* (and MTT-S winter Technical meeting), Jan. 2021.
- [52] “Fast Solvers for Electromagnetics-Based Analysis and Design of Integrated Circuits and Systems,” *IEEE MTT-S Guadalajara Chapter*, Mar. 2021.
- [53] “Fast Solvers for Electromagnetics-Based Analysis and Design of Integrated Circuits and Systems,” *IEEE Benelux AP/MTT Chapter*, Mar. 2021.
- [54] “Fast Solvers for Electromagnetics-Based Analysis and Design of Integrated Circuits and Systems,” *North Jersey MTT*, Mar. 2021.
- [55] “Fast Solvers for Electromagnetics-Based Analysis and Design of Integrated Circuits and Systems,” *the IEEE MTT-S Chapter at the Advanced Radar Research Center (ARRC) at the University of Oklahoma*, April 2021.
- [56] “Fast Solvers for Electromagnetics-Based Analysis and Design of Integrated Circuits and Systems,” *IEEE MTT-S SBC Jadavpur University, India*, April 2021.
- [57] “Fast Solvers for Electromagnetics-Based Analysis and Design of Integrated Circuits and Systems,” *Serbia and Montenegro MTT-S Chapter*, Oct. 2021.
- [58] “Fast Solvers for Electromagnetics-Based Analysis and Design of Integrated Circuits and Systems,” *IEEE New Hampshire Joint MTT/APS chapter*, Nov. 2021.
- [59] “Multiphysics Design Automation and Optimization for Heterogeneous Integration,” *International Interconnect Technology Conference*, June 2022.
- [60] “Fast and Accurate Method for Nonlinear Signaling Analysis,” *KAUST Conference on Extreme Bandwidth Communication: From mmWave, THz to Optical Bands*, March 2022.
- [61] “Recent Research Progress in Jiao’s Research Group,” *Mathworks*, June, 2023.
- [62] Keynote, “Computational Techniques and Design Automation for Semiconductors,” *IEEE MTT-S International Conference on Numerical Electromagnetic and Multiphysics Modeling and Optimization (NEMO)*, Manitoba, Canada, 2023.

Technical Reports:

- [1] H. Liu and D. Jiao, "H-Matrix-Based Fast Direct Finite Element Solver for Large-Scale Electromagnetic Analysis," ECE TR-396, School of Electrical Engineering, Purdue University, Feb. 2010, 34 pages.
- [2] J. Zhu and D. Jiao, "A Theoretically Rigorous Full-Wave Finite-Element-Based Solution of Maxwell's Equations from DC to High Frequencies," ECE TR-395, School of Electrical Engineering, Purdue University, Feb. 2010, 8 pages.
- [3] W. Chai and D. Jiao, "Dense Matrix Inversion of Linear Complexity for Integral-Equation Based Large-Scale 3-D Capacitance Extraction," TR-ECE-11-05, School of Electrical Engineering, Purdue University, Feb. 2011, 18 pages.
- [4] W. Chai and D. Jiao, "A Complexity-Reduced H-Matrix Based Direct Integral Equation Solver with Prescribed Accuracy for Large-Scale Electrodynamic Analysis," TR-ECE-11-04, School of Electrical Engineering, Purdue University, Feb. 2011, 20 pages.
- [5] J. Zhu and D. Jiao, "A Fast Full-Wave Solution that Eliminates the Low-Frequency Breakdown Problem in a Reduced System of Order One," TR-ECE-11-14, School of Electrical Engineering, Purdue University, Aug. 2011, 11 pages.
- [6] Q. He, H. Gan, and D. Jiao, "An Explicit Time-Domain Finite-Element Method That Is Unconditionally Stable," TR-ECE-11-15, School of Electrical Engineering, Purdue University, Aug. 2011, 12 pages.
- [7] H. Liu and D. Jiao, "A Theoretical Study on the Rank's Dependence with Electric Size of the Inverse Finite Element Matrix for Large-Scale Electrodynamic Analysis," TR-ECE-11-20, School of Electrical Engineering, Purdue University, Nov. 2011, 3 pages.
- [8] W. Chai and D. Jiao, "A Theoretical Study on the Rank of the Integral Operators for Large-Scale Electrodynamic Analysis," TR-ECE-11-19, School of Electrical Engineering, Purdue University, Nov. 2011, 6 pages.
- [9] J. Zhu, S. Omar, and D. Jiao, "Solution to the Electric Field Integral Equation at Arbitrarily Low Frequencies," TR-ECE-12-05, School of Electrical Engineering, Purdue University, May 2012, 11 pages.

- [10] S. Omar and D. Jiao, “ $O(N)$ Iterative and $O(M \log M)$ Fast Direct Volume Integral Equation Solvers with a Minimal-Rank H^2 -Representation for Large-Scale 3-D Electrodynamical Analysis,” TR ECE17-01, School of Electrical Engineering, Purdue University, Mar. 2017, 13 pages.

Patents:

1. D. Jiao, M. Mazumder, and C. Dai, “Analyzing interconnect structures,” US patent No. 7,289,945, awarded October 30, 2007.
2. D. Jiao and C. Dai, “Electromagnetic solutions for full-chip Analysis,” US patent No. 7,509,247, awarded Mar. 24, 2009.

Major Software Released at Intel:

1. FastGrid: Industry-first full-wave full-chip power grid simulator, 2005.
2. BroadSpice: Intel’s BKM (Best Known Method) tool for high-frequency circuit synthesis, the only tool that generates passive, accurate, and stable broadband models, outperforming vendor tools, 2004.
3. FDEV: Intel’s BKM (Best Known Method) tool for high-frequency 3D interconnect modeling, the unique tool that successfully fulfilled on-chip high-frequency validation, 2002.
4. PowerCap: Intel’s BKM (Best Known Method) tool for package decap design. It outperforms vendor tools by >100X in CPU/memory, the only design software that can handle realistic decaps in Intel’s products, 2003.

Activities as a Referee:

1998 – present	IEEE Transactions on Antennas and Propagation
1999 – present	IEEE Transactions on Microwave Theory and Tech.
2002 – present	IEEE Transactions on Advanced Packaging
2011 – present	IEEE Trans. on EMC
2011 – present	IEEE Trans. on Components, Packaging, and Manufacturing Technology
2013 – present	IEEE Trans. on Computer Aided Design of Integrated Circuits and Systems
2011 – present	Proceedings of the IEEE
2000 – present	IEEE Antennas and Wireless Propagation Letters
2005 – present	IEEE Microwave and wireless components letters
2000 – present	Microwave and Optical Technology Letters
2002 – present	Radio Science
2002 – 2005	IEEE International Conference on Computer Aided Design (ICCAD)

2002 – present	IEEE International Symposium on Antennas and Propagation (AP-S)
2008 – present	Journal of Computational Physics
2010 – present	ACM/EDAC/IEEE Design Automation Conference (DAC)
2010 – present	IEEE International Microwave Symposium (IMS)

Editorial Positions:

[1] Senior Associate Editor, *IEEE Journal on Multiscale and Multiphysics Computational Techniques*, 2022 –

Associate Editor, *IEEE Journal on Multiscale and Multiphysics Computational Techniques*, 2018 – 2022

[2] Guest Editor, Special Issue on “Women in Computational Physics,” *the IEEE Journal on Multiscale and Multiphysics Computational Techniques*, 2022.

[3] Associate Editor, *IEEE Trans. MTT*, 2021-2023

[4] Associate Editor, *IEEE Trans. Signal and Power Integrity*, 2021-

[5] Guest Editor, Special Issue on IEEE MTT-S NEMO 2019, *IEEE Trans. MTT*, 2020.

[6] Board Member, *IET Circuits, Devices & Systems*, 2015 –

[7] Associate Editor, *IEEE Trans. on Components, Packaging, and Manufacturing Technology*, 2011-

[8] Guest Editor, Special Issue on “Recent Progress in Electrical Modeling and Simulation of High-Speed Integrated Circuits and Packages,” *the IEEE Transactions on Advanced Packaging*, No. 4, 2010.