Jenshan Lin

Current Affiliation and Contact Information

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Education

1994	Ph.D., Electrical Engineering, University of California at Los Angeles
1991	M.S., Electrical Engineering, University of California at Los Angeles
1987	B.S., Electrophysics, National Chiao Tung University, Hsinchu, Taiwan

Employment

08/2007-present	Professor, Department of Electrical and Computer Engineering, University of Florida, Gainesville, Florida
07/2003-08/2007	Associate Professor, Department of Electrical and Computer Engineering, University of Florida, Gainesville, Florida
09/2001-06/2003	Technical Manager, High Speed Circuits Research Agere Systems, Holmdel, New Jersey
12/2000-09/2001	Technical Manager, High Speed and RF Design Research Bell Laboratories, Lucent Technologies, Murray Hill, New Jersey
07/1994-11/2000	Member of Technical Staff Bell Laboratories, AT&T/Lucent Technologies, Murray Hill, New Jersey
04/1994-06/1994	Postdoctoral Fellow University of California at Los Angeles, Los Angeles, California
07/1989-07/1990	Assistant Research Staff Industrial Technology Research Institute (ITRI), Hsinchu, Taiwan

Other Appointments

10/2016-08/2020	Program Director, U.S. National Science Foundation
01/2014-12/2016	Editor-in-Chief, IEEE Transactions on Microwave Theory and Techniques
05/2012-08/2012	Visiting Chair Professor, National Sun Yat-Sen University, Taiwan
06/2011-07/2011	Consultant, Industrial Technology Research Institute, Hsinchu, Taiwan
06/2010-07/2010	Visiting Researcher, NTT Microsystem Integration Laboratories, Atsugi, Japan
07/2006	Visiting Professor, Department of Electrical Engineering National Taiwan University, Taipei, Taiwan
09/2001-08/2002	Visiting Professor, WINLAB Rutgers University, Piscataway, New Jersey

Research Contributions and Research Management Experience

Expertise: RF (including microwave and millimeter-wave) circuits, systems, and applications including wireless communications, sensors, wireless power transfer, energy harvesting, biology, medicine, and security.

NSF Program Director:

- Serve as the lead program director of the Communications, Circuits, and Sensing Systems (CCSS) Program in the Division of Electrical, Communications, and Cyber Systems (ECCS) and coordinate proposal reviews, award recommendations, and program management in CCSS program including CAREER. Work with other programs directors to formulate program focus areas, new research directions, and initiate new funding programs.
- Led the cross-cutting program "Spectrum Efficiency, Energy Efficiency, and Security (SpecEES): Enabling Spectrum for All" which had $29M investment in FY2017-2019.
- Led the effort to transition SpecEES to a new program "Spectrum and Wireless Innovation enabled by Future Technologies (SWIFT)" in FY2020 with $12M anticipated funding.
- Funded the first NSF Workshop on Security in RF/Analog Microelectronics and Electromagnetics, Alexandria, VA, October 22-23, 2019.
- Led a team of 5 program directors to launch a new initiative "Dear Colleague Letter: Secure Analog-RF Electronics and Electromagnetics (SARE)" on February 6, 2020, a joint effort between ECCS and DMR.
- Worked with other program directors in ECCS to launch a new program "Addressing Systems Challenges through Engineering Teams (ASCENT) in 2020. Serve as one of the three lead program directors in this program.
- Represented ECCS in Major Research Instrumentation (MRI) program and handled the review of MRI proposals submitted to ECCS in FY2017-2018.
- Represent ECCS in several other NSF cross-cutting programs including
    - NSF/Intel Partnership on Machine Learning for Wireless Networking Systems (MLWiNS)
    - Joint NSF-DARPA Real-Time Machine Learning (RTML)
    - Ideas Lab: Cross-cutting Initiative in CubeSat Innovations
    - Secure and Trustworthy Cyberspace (SaTC)
    - Computational and Data-Enabled Science and Engineering (CDS&E)
    - Cyberinfrastructure for Sustained Scientific Innovation (CSSI) - Data and Software
    - NSF/DOE Partnership in Basic Plasma Science and Engineering
- Participate in NSF Electromagnetic Spectrum Management (ESM) Working Group and contribute to strategic planning of Spectrum Research
- Representing NSF in two government interagency working groups under NITRD (Wireless Spectrum Research and Development Working Group and Broadband Research and Development Working Group) for strategic planning of national R&D investments related to wireless and radio frequency technologies.

Pioneering contributions in emerging research areas:

- Vital Sign and Vibration Sensing Radar
  First to demonstrate a fully integrated radar sensor chip that can measure human respiration and heartbeat. Since then, this new research field has been drawing attentions and growing fast with increasing number of publications. Presented keynote speech in 2015 International Microwave Workshop Series on RF and Wireless Technologies for Biomedical and Healthcare Applications (IMWS-Bio). Collaborated with several researchers in Taiwan and helped founded the Biomedical Radar Consortium in

Taiwan. Published several papers and received high citations. 11 of these publications received >100 citations. (source: Google Scholar)

- Wireless Energy Transfer and Conversion
  First to demonstrate wireless charging of a laptop computer. Created new technical committee in IEEE MTT-S. Contributed to the wireless power workshops that led to the creation of the new IEEE Wireless Power Transfer Conference. Presented keynote speech in 2014 IEEE Wireless Power Transfer Conference. Published several papers and received high citations. 5 of these publications and 2 patents received >100 citations (source: Google Scholar)

Successful technology transfer and commercialization of research results at UF:

- Noncontact and Noninvasive Detection of Vital Signs and Vibrations Using Radar
  Developed several technologies covering transceiver architectures and detection algorithms. Seven patents have been issued while several others are in applications. The patents have been licensed by three companies for applications in home healthcare, veterinary care, biological research, and security.
- Near-field Wireless Charging of Mobile Devices
  Worked with UF ECE students who founded WiPower (acquired by Qualcomm) to develop key technologies for wireless charging of cellular phones and other portable electronic devices. Two patents were issued and licensed by WiPower/Qualcomm.

Leading large multidisciplinary teams:

- ONR 20GHz GaN Wide-Band Receiver (PI)
  Led a large multidisciplinary research team from University of Florida, University of Hawaii, and Northrop Grumman Corporation on this $1.15M project to work on advanced GaN device processing and high dynamic range receiver circuits demonstration.
- NASA Hydrogen Research – Sensors and Sensor Systems (PI)
  Led a large multidisciplinary research team from 4 departments on this $1.1M project. Demonstrated Self-Powered Wireless Hydrogen Sensor System. Demonstrated complete wireless hydrogen leak detection system deployed at Greenway FORD in Orlando. Had a news release and covered by several news media. Published several papers and received high citations (Google Scholar: 4 papers with >100 citations).
- NSF Major Research Instrumentation Award (PI)
  Led a multi-department proposal team and received the award. Acquired $325,000 equipment to build a 110GHz millimeter-wave device characterization system in University of Florida. The system and the measurement results using it have contributed to the success of faculty research projects and graduate education.

Awards and Honors

- University of Florida Technology Innovator Awards, 2011, 2012, 2013, 2014, 2016, 2017 (for inventions licensed in the previous calendar year)
- IEEE Radio Frequency Integrated Circuits (RFIC) Symposium Tina Quach Outstanding Service Award, 2016
- Distinguished Alumnus Award, National Chiao Tung University, Taiwan, 2016
- IEEE Wireless Power Transfer Conference Best Paper Award (voted by attendees), 2015
- Honorary Chair Professor, National Taiwan University of Science and Technology, 2014
- Fellow of IEEE, 2010
- IEEE Microwave Theory and Techniques Society N. Walter Cox Award, 2007
- ETA KAPPA NU Outstanding Young Electrical Engineer Award, 1997

- UCLA School of Engineering and Applied Science Outstanding Ph.D. Award, 1994

Advisor/coauthor of students' honors and awards (student name in parentheses)

- 2018 IEEE Wireless Power Transfer Conference Best Student Paper Award (Aasrith Ganti)
- 2016 IEEE International Microwave Symposium Student Paper Competition Finalist (Tien-Yu Huang)
- 2016 IEEE Wireless Power Transfer Conference Best Student Paper Award Second Place (Ron-Chi Kuo)
- 2016 IEEE RWW BioWireless Best Student Paper Award Second Place (Tien-Yu Huang)
- 2015 IEEE IMWS-Bio Best Student Paper Award First Place (Tien-Yu Huang)
- 2014 IEEE MTT-S Student Design Competition High Sensitivity Radar 3rd Place Award (Chien-Ming Nieh, Changyu Wei, Jianxuan Tu, Meiyu Li, and TienYu Huang)
- 2012 IEEE RFIC Symposium Best Student Paper Finalist (Jason Te-Yu Kao)
- 2011 Vodafone Wireless Innovation Project Competition Finalist (Gabriel Reyes, Changzhi Li)
- 2010 IEEE Radio and Wireless Symposium Best Student Paper Award 3rd place (Yan Yan)
- 2009 IEEE Radio and Wireless Symposium Student Paper Competition Finalist (Xiaogang Yu)
- 2008 IEEE MTT-S Graduate Fellowship Award (Changzhi Li)
- 2008 IEEE MTT-S Undergraduate/Pre-Graduate Scholarship Award (Gabriel Reyes)
- 2008 IEEE International Microwave Symposium Student Paper Competition Finalist (Changzhi Li)
- 2007 IEEE Radio and Wireless Symposium Best Student Paper Award 2nd place (Changzhi Li)
- 2004 IEEE MTT-S Undergraduate/Pre-Graduate Scholarship Award (Jerry Jun)
- 2003 IEEE International Microwave Symposium Best Student Paper Award 1st place (Amy Droitcour)
- 2001 IEEE International Microwave Symposium Best Student Paper Award Honorable Mention (Amy Droitcour)
- 1997 IEEE International Microwave Symposium Best Student Paper Award 2nd place (Joel Dawson)

Professional Society Activities

- Fellow of IEEE – currently a member in the following societies/councils/communities: Microwave Theory and Techniques Society (MTT-S), Sensors Council, Systems Council, Council on RFID, Biometrics Council, Nanotechnology Council, Life Sciences Community, Internet of Things Community. Past member: Antennas and Propagation Society, Engineering in Medicine and Biology Society, Solid-State Circuits Society, Industrial Electronics Society, Communications Society, Standards Association

Leadership positions in society administrative committees, publications, conferences:

Editorial Board of Publications

- Editor-in-Chief, IEEE Transactions on Microwave Theory and Techniques, 2014-2016
- Editorial Advisory Board, Cambridge University Press RF and Microwave Engineering Series, 2013-present
- Guest Editor, IEEE Microwave Magazine RFIC Special Issue, Feb. 2012.
- Associate Editor, IEEE Transactions on Microwave Theory and Techniques, 2006-2010

- Guest Editor, RFIC2008 Special Issue, IEEE Transactions on Microwave Theory and Techniques, May 2009.
- Guest Editor, IEEE Microwave Magazine GOLD Special Issue, Feb. 2009.

Society Leadership Positions

- IEEE MTT-S Tatsuo Itoh Award Committee (Chair: 2019-present)
- IEEE MTT-S Fellow Evaluating Committee (member: 2014-2017, Vice Chair: 2018)
- IEEE MTT-S Technical Committee on Wireless Energy Transfer and Conversion (Founding Member 2011-present; Vice Chair: 2011-2013; Chair: 2013-2015)
- Chair, Technical Coordinating Committee, IEEE MTT-S AdCom (2010-2011). Overseeing all Technical Committees in the Society and planning new committees on emerging topics.
- Elected Member, IEEE MTT-S AdCom (1st term: 2006-2008, 2nd term: 2009-2011)
- Chair, MTT GOLD Committee (2007-2008). New initiative on young professionals.
- Vice Chair, Membership Services Committee, IEEE MTT-S AdCom (2006-2008)
- Vice Chair, Microwave Education Fund Committee, IEEE MTT-S AdCom (2005)
- Vice Chair, Electronic Information Committee, IEEE MTT-S AdCom (2005-2009)
- Publications Committee, IEEE MTT-S AdCom (2005-2010, 2014-2017)
- Technical Coordinating Committee, IEEE MTT-S AdCom (2010-2012, 2016-present)
- Membership Services Committee, IEEE MTT-S AdCom (2006-2008)
- Electronic Information Committee, IEEE MTT-S AdCom (2003-2009)

Conference Leadership Positions

- Chair, IEEE Wireless Power Transfer Conference (2021)
- Executive Committee, IEEE Wireless Power Transfer Conference (2020)
- International Advisory Committee, IEEE Wireless Power Transfer Conference (2014, 2016, 2017, 2020)
- Advisory Committee, IEEE RFIC Symposium (2014-present)
- Executive Committee, IEEE RFIT Symposium (2012-2013)
- Executive Committee, IEEE International Wireless Symposium (2013)
- Executive Committee, IEEE RFIC Symposium (2008-2013)
- Executive Committee, IEEE Radio and Wireless Symposium (2007, 2009)
- International Advisory Committee, Asia-Pacific Microwave Conference (2008)
- International Advisory Committee, IEEE 7th International Symposium on Communications and Information Technologies (2007)
- International Advisory Committee, IEEE International Workshop/Symposium on Radio-Frequency Integration Technology (2007, 2009)
- Chair, IEEE RFIC Symposium Executive Committee (2012-2013)
- General Co-Chair, Asia-Pacific Microwave Conference (2012)
- Technical Program Chair, IEEE Radio and Wireless Symposium (2009)
- General Chair, IEEE RFIC Symposium (2008)
- Poster Session Chair, IEEE Radio and Wireless Symposium (2008)
- Technical Program Chair, IEEE RFIC Symposium (2007)
- Technical Program Co-Chair, IEEE RFIC Symposium (2006)
- Finance Chair, IEEE Radio and Wireless Symposium (2007)
- Workshops Chair, IEEE Radio and Wireless Symposium (2006)
- Finance Chair, IEEE RFIC Symposium (2005)
- Co-Chair, Wireless and Cellular Communications Subcommittee, IEEE International Microwave Symposium Technical Program Committee (2005)
- Tutorials Chair, IEEE Wireless and Microwave Technology Conference (2005)

- Workshops Chair, IEEE Radio and Wireless Conference (2004)
- Workshops and Tutorials Chair, IEEE RFIC Symposium (2004)
- Workshop Co-Organizer, "Wireless Biomedical Applications" in IEEE Radio and Wireless Symposium (2011)
- Workshop Co-Organizer, “RFIC Technology Evolution and Reality: Challenges to Designers and Manufacturers” in IEEE RFIC Symposium (2004)
- Workshop Co-Organizer: “Advances in Bluetooth Technology” in IEEE International Microwave Symposium (2002)

Other Committee Memberships

- IEEE MTT-S MTT-10 Technical Committee on Biological Effects and Medical Applications (2015-present)
- IEEE MTT-S MTT-26 Technical Committee on Wireless Energy Transfer and Conversion (2011-present)
- IEEE MTT-S MTT-23 Technical Committee on RFIC (2009-present)
- IEEE MTT-S MTT-20 Technical Committee on Wireless Communications (2002-present)
- Technical Program Committee, IEEE International Microwave Biomedical Conference (2018-present)
- Technical Program Review Committee, IEEE International Microwave Symposium (2002-2005, 2017-present)
- Technical Program Committee, IEEE Wireless Power Transfer Conference (2013-present)
- Technical Program Committee, IEEE International Microwave and RF Conference (IMaRC), 2014-present
- Technical Program Committee, Radar Sensor Technology, SPIE Defense + Commercial Sensing (formerly International Symposium on Defense and Security) (2008-present)
- Technical Program Committee, European Microwave Conference (2013-2016)
- Technical Program Committee, IEEE Benjamin Franklin Symposium on Microwave and Antenna Sub-systems (BenMAS), 2014
- Technical Program Committee, IEEE RFIC Symposium (2002-2015)
- Technical Program Committee, IEEE International Wireless Symposium (2013-2014)
- Technical Program Committee, Asia-Pacific Microwave Conference (2012-2014, 2018)
- Technical Program Committee, IEEE Radio and Wireless Symposium (2002-2010)
- Technical Program Committee, IEEE International Workshop on Radio-Frequency Integration Technology (2005)
- International Program Committee, IASTED International Conference on CIRCUITS, SIGNALS, AND SYSTEMS (2005)
- Technical Program Committee, IASTED Wireless and Optical Communications (2004)
- Technical Program Committee, IEEE Sarnoff Symposium (2001)
- Technical Program Committee, IEEE Workshop on Chip-Package Co-Design (1998-2000)
- Technical Program Committee, IEEE Symposium on IC/Package Design Integration (1999)
- Organizing Committee, IEEE Wireless Power Transfer Conference (2015)
- Steering Committee, IEEE International Microwave Biomedical Conference (2018)
- Steering Committee, IEEE International Microwave Symposium (2003, 2007, 2014, 2017)
- Steering Committee, IEEE Wireless and Microwave Technology Conference (2012)
- Steering Committee, IEEE Radio and Wireless Symposium (2004-2009)
- Steering Committee, IEEE RFIC Symposium (2003-2008)
- Balloting Committee, IEEE 802.16 Wireless MAN (later evolved to WiMAX) Standard (2001)

Institutional Program Review Committees

- Advanced R&D Advisory Committee, Industrial Technology Research Institute (ITRI), Taiwan, 1st term: 2016-2018, 2nd term: 2019-2021
- Assessment Committee, National Taiwan University College of Electrical Engineering and Computer Science, 2015

Proposal Reviews and Panels

- National Science Foundation (NSF)
- IEEE Presidents' Change the World Competition
- Semiconductor Research Corporation (SRC)
- Oak Ridge Associated Universities (ORAU)
- Industrial Technology Research Institute (ITRI), Hsinchu, Taiwan
- Science & Engineering Research Council of Singapore
- Quatar National Priorities Research Program
- Research Grant Council of Hong Kong
- Research Council for Natural Sciences and Engineering, Academy of Finland
- Natural Sciences and Engineering Research Council of Canada
- King Abdulaziz City for Science and Technology (KACST), Kingdom of Saudi Arabia

University of Florida Committees

- Faculty Advisory Board, UF Center of Remote Sensing (2013-present)
- Member, Faculty Innovation Council, UF Engineering Innovation Institute (2011-present)
- Member, Search Committee, ECE Department Semmoto Endowed Chair Professor, 2016
- Member, Faculty Sabbatical Committee, College of Engineering (2012-2016)
- Member, Faculty Development (Tenure & Promotion) Committee, ECE Department (2009-2016)
- Chair, Electronics Division, ECE Department (Fall 2008-Spring 2010, Fall 2013)
- Member, Search Committee, ECE Department Nuroengineering Faculty (2013-2014)
- Member, Search Committee, College of Engineering Associate Dean for Academic Affairs, (2009)
- Elected Senator, University of Florida Faculty Senate (Aug. 2006-Aug. 2009)
- Elected Member of Faculty Council, College of Engineering (Aug. 2006-Aug. 2009)
- Member, Budget Committee, ECE Department (2008-2009)
- Member, Intel Chair Search Committee, ECE Department (2004-2007)
- Member, PhD Exam Committee, ECE Department (2004-2008)
- Member, Faculty Search Committee, ECE Department (2003-2006)
- Member, Financial Aid Committee, ECE Department (2004)

Ph.D. Students Graduated (27)

(10 from underrepresented groups in STEM: 7 women, 3 Latin Americans, 1 African American)

Dr. Sherlie Portugal (PhD May 2018) → Technological University of Panama
Dr. Meiyu Li (PhD August 2017) → Skyworks
Dr. Tienyu Huang (PhD August 2017) → GLOBALFOUNDRIES
Dr. Lawrence Fomundan (PhD May 2017) → SAIC
Dr. Ron-Chi Kuo (PhD May 2017) → PowerSphyr Inc.
Dr. Christopher Heagney (PhD May 2016) → US Naval Air Systems Command
Dr. Jianxuan Tu (PhD August 2015) → Intel → Apple
Dr. Chien-Ming (Jemmy) Nieh (PhD December 2014) → Intel → Amazon Lab126

Dr. Taesong Hwang (PhD May 2014) → Skyworks
Dr. Raul A. Chinga (PhD December 2013) → Space Systems Loral
Dr. Te-Yu (Jason) Kao (PhD May 2013) → Intel → Qualcomm
Dr. Yan Yan (PhD May 2012) --> Coherent Logix → Skyworks
Dr. Choong Heon Lee (PhD May 2012) → University of Florida → Rush University
Dr. Xiaogang Yu (PhD January 2012) → Mckinsey & Company
Dr. Zivin Park (PhD May 2011) → Independent Patent Agent
Dr. Mingqi Chen (PhD December 2010) → Maxim Integrated Products → Broadcom → Apple
Dr. Austin Chen (PhD May 2010) → Skyworks → Nokia
Dr. Joaquin Casanova (PhD May 2010) → United States Department of Agriculture → University of Florida
Prof. Changzhi Li (PhD May 2009) → Texas Tech University
Dr. Zhen Ning Low (PhD May 2009) → Qualcomm
Dr. Lance Covert (PhD May 2008) → EMS Technologies → Honeywell Aerospace
Dr. Tien-Yu Chang (PhD May 2008) → Maxlinear → Marvell → MediaTek → Samsung
Prof. Hyeopgoo Yeo (PhD August 2007) → Samsung → HanShin University
Dr. Sang Won Ko (PhD August 2007) → Skyworks
Dr. Yanming Xiao (PhD May 2007) → Qualcomm
Dr. Ashok Verma (PhD May 2006) → Maxim Integrated Products
Dr. Xiuge Yang (PhD May 2006) → Ansoft --> NXP Semiconductors --> Cree

Currently supervising 2 PhD students.

International Collaborations

- Hosted 32 international visiting professors and researchers at University of Florida.
- Participating in EU COST ACTION IC1301 Wireless Power Transmission for Sustainable Electronics (WiPE)
- Participating in Biomedical Radar Consortium in Taiwan

Publications and Patents

291 papers in refereed journals (131) and conference proceedings (160), 2 books and 9 book chapters, 20 Patents Awarded, >100 Invited Talks (keynotes, seminars, tutorials, short courses, workshops)
Google Scholar h-index: 54
Publications and citations can be found in the following links:
https://scholar.google.com/citations?user=mqCyq9oAAAAJ&hl=en
https://orcid.org/0000-0002-7439-9259

Articles in Refereed Journals

1. X. Ma, Y. Wang, L. Lu, X. Zhang, Q. Chen, X. You, J. Lin, L. Li, "Design of a 100-GHz Double-Sideband Low-IF CW Doppler Radar Transceiver for Micrometer Mechanical Vibration and Vital Sign Detection," in IEEE Transactions on Microwave Theory and Techniques, vol. 68, no. 7, pp. 2876-2890, July 2020.
2. Sherlie Portugal, Bhaswati Choudhury, Alexander Lilley, Christopher Charters, Christian Porrello, Jenshan Lin, and Subrata Roy, "A fan-shaped plasma reactor for mixing enhancement in a closed chamber," Journal of Physics D: Applied Physics, Volume 53, Number 22, April 2020.
3. A. Ganti, J. Lin, T. Wynn, T. Oritz, "Achieving electromagnetic compatibility of wireless power transfer antennas inside MRI system," Wireless Power Transfer, 6(2), 138-153. doi:10.1017/wpt.2019.15. December 20, 2019.

4. P. H. Carey, IV, B. C. Lobo, M. P. Gebhard, M. E. Leon, S. D. Flax, N. S. Harris, Y.-T. Liao, C.-W. Chang, J. Lin, F. Ren, and S. J. Pearton, "Review—Opportunities for Rapid, Sensitive Detection of Troponin and Cerebral Spinal Fluid Using Semiconductor Sensors," Journal of the Electrochemical Society, 2020 167: 037507. November 20, 2019.
5. J. Yang, C. Fares, P. H. Carey, IV, M. Xian, F. Ren, M. J. Tadjer, Y.-T. Chen, Y.-T. Liao, C.-W. Chang, J. Lin, R. Sharma, M. E. Law, P. E. Raad, P. L. Komarov, D. J. Smith, A. Kuramata, and S. J. Pearton, "*(Invited)* Comparison of High Voltage, Vertical Geometry Ga_2O_3 Rectifiers with GaN and SiC," Electrochemical Society Transactions 2019 vol. 92, issue 7, pp. 15-24, July 2019.
6. J. Tu, T. Hwang and J. Lin, "Authors' Reply to "Respiration Rate Measurement Under 1-D Body Motion Using Single Continuous-Wave Doppler Radar Vital Sign Detection System"," in *IEEE Transactions on Microwave Theory and Techniques*, vol. 67, no. 7, pp. 2823-2823, July 2019.
7. J. J. Saluja, J. J. Casanova and J. Lin, "A Supervised Machine Learning Algorithm for Heart-rate Detection Using Doppler Motion-Sensing Radar," in IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology, doi: 10.1109/JERM.2019.2923673, June 2019.
8. P. H. Carey, IV, J. Yang, F. Ren, Y.-T. Liao, C.-W. Chang, J. Lin, S. J. Pearton, B. Lobo, and M. E. Leon, "Fast Cerebrospinal Fluid Detection Using Inexpensive Modular Packaging with Disposable Testing Strips," Journal of The Electrochemical Society, 166 (8) B708-B712 (2019).
9. Y.-T. Chen, J. Yang, F. Ren, C.-W. Chang, J. Lin, S. J. Pearton, M. Tadjer, A. Kuramata, Y.-T. Liao, " Implementation of a 900 V Switching Circuit for High Breakdown Voltage β-Ga2O3 Schottky Diodes," ECS Journal of Solid State Science and Technology, 2019 8: Q3229-Q3234. May 2019.
10. J. Yang, C. Fares, F. Ren, Y.-T. Chen, Y.-T. Liao, C.-W. Chang, J. Lin, M. Tadjer, D. J. Smith, S. J. Pearton, and A. Kuramata, "Switching Behavior and Forward Bias Degradation of 700V, 0.2A, β-Ga2O3 Vertical Geometry Rectifiers," ECS Journal of Solid State Science and Technology, 2019 8: Q3028-Q3033, January 2019.
11. J. Yang, F. Ren, Y.-T. Chen, Y.-T. Liao, C.-W. Chang, J. Lin, M. J. Tadjer, S. J. Pearton, and A. Kuramata, "Dynamic Switching Characteristics of 1 A Forward Current β-Ga2O3 Rectifiers," in *IEEE Journal of the Electron Devices Society*, vol. 7, issue 1, pp. 57-61, 2019.
12. X. Ma, L. Li, S. Ming, X. You and J. Lin, "Envelope Detection for an ADC-Relaxed Double-Sideband Low-IF CW Doppler Radar," in *IEEE Transactions on Microwave Theory and Techniques*, vol. 66, no. 12, pp. 5833-5841, December 2018.
13. Ganti A, Ortiz T, Wynn TA, Lin J, Duensing R. Effect of PIN diode nonlinearity on decoupler circuits in magnetic resonance imaging surface coils. *Concepts Magn Reson Part B*. 2018;e21398.
14. J. Lin, C. Li, C.-C. Chang, T.-H. Tsai, D. Zito, S.-F. Chang, "Review—Semiconductor Integrated Radar for Sensing Applications," *ECS Journal of Solid State Science and Technology*, Q3126-Q3142, April 2018. (Editor's Choice)
15. M. Li and J. Lin, "Wavelet-Transform-Based Data-Length-Variation Technique for Fast Heart Rate Detection Using 5.8-GHz CW Doppler Radar," in *IEEE Transactions on Microwave Theory and Techniques*, vol. 66, no. 1, pp. 568-576, January 2018.
16. S. Portugal, S. Roy, J. Lin, "Functional relationship between material property, applied frequency and ozone generation for dielectric barrier discharges in atmospheric air," *Scientific Reports*, Scientific Reports, 7: 6388, July 2017.
17. C. Li, Z. Peng, T.-Y. Huang, T. Fan, F.-K. Wang, T.-S. Horng, J.-M. Muñoz-Ferreras, R. Gómez-García, L. Ran, J. Lin, "A Review on Recent Progress of Portable Short-Range Noncontact Microwave Radar Systems," in *IEEE Transactions on Microwave Theory and Techniques*, vol. 65, no. 5, pp. 1692-1706, May 2017. (Invited Paper)
18. T. Y. Huang, L. F. Hayward and J. Lin, "Noninvasive Measurement and Analysis of Laboratory Rat's Cardiorespiratory Movement," in *IEEE Transactions on Microwave Theory and Techniques*, vol. 65, no. 2, pp. 574-581, Feb. 2017.
19. J. Tu, T. Hwang and J. Lin, "Respiration Rate Measurement Under 1-D Body Motion Using Single Continuous-Wave Doppler Radar Vital Sign Detection System," in *IEEE Transactions on Microwave Theory and Techniques*, vol. 64, no. 6, pp. 1937-1946, June 2016.
20. A. Ganti, J. Lin, R. A. Chinga and S. Yoshida, "Harmonically terminated high-power rectifier for wireless power transfer," *Wireless Power Transfer*, 2016, 3(2), 75–82.
21. J. Tu and J. Lin, "Fast acquisition of heart rate in non-contact vital sign radar measurement using time window variation technique," *IEEE Trans. Instrum. Meas.*, vol. 65, no. 1, pp. 112-122, January 2016.

22. T. Hwang, K. Azadet, R. S. Wilson, and J. Lin, "Nonlinearity Modeling of a Chireix Outphasing Power Amplifier," *IEEE Trans. Circuits Syst. I, Reg. Papers*, vol. 62, no. 12, pp. 2898-2907, December 2015.
23. T. Hwang, K. Azadet, R. S. Wilson, and J. Lin, "Linearization and Imbalance Correction Techniques for Broadband Outphasing Power Amplifiers," *IEEE Transactions on Microwave Theory and Techniques,* vol. 63, no. 7, pp. 2185-2198, July 2015.
24. C.-M. Nieh, C. Wei, and J. Lin, "Concurrent Detection of Vibration and Distance Using Unmodulated CW Doppler Vibration Radar with an Adaptive Beam-Steering Antenna," *IEEE Transactions on Microwave Theory and Techniques,* vol. 63, no. 6, pp. 2069-2078, June 2015.
25. R. A. Chinga, J. Lin, S. Roy, "Self-Tuning High-Voltage High-Frequency Switching Power Amplifier for Atmospheric-Based Plasma Sterilization," *IEEE Transactions on Plasma Science*, vol. 42, no. 7, pp. 1861-1869, July 2014.
26. T. Hwang, K. Azadet, R. S. Wilson, and J. Lin, "Characterization of Class-F Power Amplifier With Wide Amplitude and Phase Bandwidth for Outphasing Architecture," *IEEE Microwave and Wireless Components Letters*, vol. 24, no. 3, pp. 188-190, March 2014.
27. W.-T. Chen, R. A. Chinga, S. Yoshida, J. Lin, C.-K. Hsu, "A 36 W Wireless Power Transfer System with 82% Efficiency for LED Lighting Applications," *Transactions of The Japan Institute of Electronics Packaging*, vol. 6, no. 1, pp. 32-37, 2013.
28. L. Lu, C. Li, J. Lin, "A Regulated 3.1-10.6 GHz Linear Dual-Tuning Differential Ring Oscillator for UWB Applications," *Microwave and Optical Technology Letters*, vol. 55, no. 10, pp. 2384-2389, Oct. 2013.
29. J. Garnica, R. Chinga, J. Lin, "Wireless Power Transmission: From Far Field to Near Field," *Proceedings of IEEE, Special Issue on Wireless Power Technology, Transmission and Application*, vol. 101, no. 6, pp. 1321-1331, June 2013. (Invited)
30. C. Li, V. M. Lubecke, O. Boric-Lubecke, J. Lin, "A Review on Recent Advances in Doppler Radar Sensors for Noncontact Healthcare Monitoring," *IEEE Transactions on Microwave Theory and Techniques,* vol. 61, no. 5, pp. 2046-2060, May 2013. (Invited)
31. T. Kao, Y. Yan, T. Shen, A. Chen, J. Lin, "Design and Analysis of a 60-GHz CMOS Doppler Micro-Radar System-in-Package for Vital-Sign and Vibration Detection," *IEEE Transactions on Microwave Theory and Techniques,* vol. 61, no. 4, pp. 1649-1659, April 2013.
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Books

- *Medical and Biological Microwave Sensors and Systems*. Mostafanezhad, Isar, Olga Boric-Lubecke, and Jenshan Lin, eds., Cambridge University Press, 2017.
- *Microwave Noncontact Motion Sensing and Analysis*, C. Li and J. Lin, John Wiley & Sons, Hoboken, New Jersey, 2014.

Book Chapters

- Jiancheng Yang, Patrick Carey, Fan Ren, Brian C. Lobo, Michael Gebhard, Marino E. Leon, Jenshan Lin, S.J. Pearton, "Nanosensor networks for health-care applications," Editor(s): Baoguo Han, Vijay K. Tomer, Tuan Anh Nguyen, Ali Farmani, Pradeep Kumar Singh, Chapter 24 in Nanosensors for Smart Cities, Elsevier, 2020, Pages 405-417, ISBN 9780128198704.
- Tien-Yu Huang, Linda Hayward, Jenshan Lin, "Noncontact noninvasive monitoring of small laboratory animal's vital sign activities using a 60-GHz radar," Chapter 6 in Short-Range Micro-Motion Sensing with Radar Technology, Editors: Changzhan Gu and Jaime Lien, pp. 145-170, IET Digital Library, 2019.
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- *Directions for the Next Generation of MMIC Devices and Systems*, Edited by N. K. Das and H. L. Bertoni, author of 31. Low-Voltage MMIC-HBT VCO For Millimeter-Wave Communication Systems, pp. 263-270, Plenum Press, New York, 1997.

Recent Invited Talks (2013-present)

1. J. Lin, "Driving Future Innovations of Communications and Sensing," Cornell University, November 15, 2019. **(Invited)**
2. J. Lin, "Driving the Future Innovations of Communications and Sensing – Communications, Circuits, and Sensing Systems (CCSS) Program in NSF," University of Virginia, April 12, 2019. **(Invited)**
3. J. Lin, "NSF Programs on Secured Communications and Sensing," in TxACE Workshop on Secure and Trusted Analog/RF Systems, Dallas, TX, May 24, 2018. **(Invited)**
4. J. Lin, "Communications, Circuits, and Sensing Systems Program in NSF," in NSF Workshop: Recent Advances and Future Research Directions in RF Technologies from MHz to THz, IEEE International Microwave Symposium, Honolulu, HI, June 8, 2017. **(Opening Keynote)**
5. J. Lin, "Spectral-Efficient Detection of Vital Signs and Motions Using CW Radar: Applications in Biology, Medicine, and Beyond," U.S. Interagency Government Working Group NITRD Wireless Spectrum Research and Development (WSRD) meeting, February 2, 2017. **(Invited)**
6. J. Lin, “A Perspective on Far-Field and Near-Field Wireless Power Transfer,” EU COST IC1301 Wireless Power Transmission for Sustainable Electronics (WIPE) 6th Management Committee Meeting and Working Group Workshop, Aveiro, Portugal, May 3, 2016. **(Invited Keynote)**
7. J. Lin, “Noncontact Vital Sign Detection Using Microwave Radar: Applications in Biology, Medicine, and Beyond,” National Chiao Tung University, Tainan Campus, Taiwan, April 8, 2016. **(Invited)**
8. J. Lin, "Noncontact Vital Sign Detection Using Microwave Radar: Applications in Biology, Medicine, and Beyond" and "Status of IEEE Transactions on Microwave Theory and Techniques," Zhejiang University, Hangzhou, China, March 17, 2016. **(Invited)**
9. J. Lin, “From Communication Circuits to Sensor Systems,” National Science Foundation, Washington, DC, March 7, 2016. **(Invited)**
10. J. Lin, “Noncontact Vital Sign Detection Using Microwave Radar: Applications in Biology, Medicine, and Beyond,” IEEE Tainan Chapter, Taiwan, December 15, 2015. **(Invited)**
11. J. Lin, “Noncontact Vital Sign Detection Using Microwave Radar: Applications in Biology, Medicine, and Beyond,” Nanjing University of Aeronautics and Astronautics, Nanjing, China, December 10, 2015. **(Invited)**
12. J. Lin, “Noncontact Vital Sign Detection Using Microwave Radar: Applications in Biology, Medicine, and Beyond,” Southeast University, Nanjing, China, December 9, 2015. **(Invited)**
13. J. Lin, “Wireless Power Transfer: From Far Field to Near Field,” EU COST Wireless Networks: From Energy Harvesting to Information Processing, CTTC, Castelldefels, Barcelona, Spain, 9-13 November, 2015. **(Invited)**
14. J. Lin, “Noncontact Vital Sign Detection Using Microwave Radar: Applications in Biology, Medicine, and Beyond,” *IEEE IMWS-Bio 2015*, Taipei, Taiwan, September 2015. **(Invited Keynote)**
15. J. Lin, “Wireless Power Transfer: From Far Field to Near Field,” IEEE International Microwave Symposium Workshop on Wireless Power Transmission and Scavenging, Phoenix, AZ, May 22, 2015. **(Invited)**
16. C. Li and J. Lin, “RFIC Integration of CW Radar Transceivers for Vibration and Vital Sign Detection,” IEEE International Microwave Symposium Workshop on Modern Radar Systems for High resolution ranging, indoor localization, and vital signs detection, Phoenix, AZ, May 17, 2015. **(Invited)**
17. J. Lin and N. Shinohara, “Wireless Power Transfer in 21st Century: Technologies Covering Far Field and Near Field,” Tutorial in 16th annual IEEE Wireless and Microwave Technology Conference (WAMICON), Cocoa Beach, April 15, 2015. **(Invited)**
18. J. Lin, “Wireless Power Transfer: From Far Field to Near Field,” Wireless Power Summit, Berkeley, November 20, 2014. **(Invited)**
19. J. Lin, “An Overview of Wireless Power Transfer Technologies from Far-Field to Near-Field,” Workshop on Wireless Power Transfer, Taichung, November 11, 2014. **(Invited)**
20. J. Lin, “An Overview of Wireless Power Transfer Technologies from Far-Field to Near-Field,” Workshop on Wireless Power Transfer, Taipei, November 10, 2014. **(Invited)**
21. J. Lin, “Wireless Energy Transfer and Conversion: the Wireless Power in 21st Century,” IEEE Wireless Power Transfer Conference, Jeju, Korea, May 9, 2014. **(Invited Keynote)**
22. J. Lin, "Noncontact Detection of Vital Signs and Vibrations Using Micro-Radar," Tianjin University, May 6, 2014. **(Invited)**
23. J. Lin, "Wireless Power Transmission: From Far-Field to Near-Field," Tianjin University, May 6, 2014. **(Invited)**

24. J. Lin, “5.8 GHz and 60 GHz Radar Chips for Vital Signs and Vibration Sensing,” IEEE International Wireless Symposium Workshop “Integrated Radar Designs and Detecting Algorithms for Transportation and Vital Sensing Applications,” Xi’an, China, March 24, 2014. **(Invited)**
25. J. Lin, “IEEE Transactions on Microwave Theory and Techniques – the Transition” and “Volunteering in MTT Society,” IEEE MTT-S Taipei Chapter and National Taiwan University, Taipei, Taiwan, December 18, 2013. **(Invited)**
26. J. Lin, “IEEE Transactions on Microwave Theory and Techniques – the Transition,” Chang Gung University, Taipei, Taiwan, December 17, 2013. **(Invited)**
27. J. Lin, “IEEE Transactions on Microwave Theory and Techniques – the Transition” and “Volunteering in MTT Society,” IEEE MTT-S Tainan Chapter and National Sun Yat-Sen University, Kaohsiung, Taiwan, December 13, 2013. **(Invited)**
28. J. Lin, “Micro-Radar Sensors for Noncontact Detection of Vital Signs and Vibration,” IEEE MTT/AP Singapore Chapter and Nanyang Technological University, December 11, 2013. **(Invited)**
29. J. Lin, “Micro-Radar Sensors for Noncontact Detection of Vital Signs and Vibrations,” Texas Instruments Web Seminar, August 29, 2013. **(Invited)**
30. J. Lin, “CMOS Micro-radars for Noncontact Detection of Human Vital Signs,” IEEE International Microwave Symposium Workshop on Radio Frequency Systems for Indoor Localization, Seattle, June 2, 2013. **(Invited)**
31. J. Lin, IEEE International Wireless Symposium Panel Session “Wireless Power Transfer: An Old Technology Sparks a Modern Revolution,” Beijing, China, April 15, 2013. **(Invited)**
32. J. Lin, "Wireless Power Transmission: From Far-Field to Near-Field," IEEE Norwegian MTT/AP Chapter, Oslo, Norway, March 8, 2013. **(Invited)**
33. J. Lin, "Noncontact Detection of Vital Signs and Vibrations Using Micro-Radar," IEEE Norwegian MTT/AP Chapter, Oslo, Norway, March 8, 2013. **(Invited)**
34. J. Lin, “Micro-Radar Sensors for Non-contact Pervasive Monitoring of Respiration and Heartbeat,” Symposium on Engineering Medicine and Biology Applications, Tainan, Taiwan, February 2, 2013. **(Invited)**
35. J. Lin, “Micro-Radar Sensors for Noncontact Detection of Vital Signs and Vibrations,” University of Southern California, Los Angeles, CA, January 18, 2013. **(Invited)**

Patents Awarded

1. United States Patent 10,401,477: Method and apparatus for doppler radar signal recovery of target displacement, September 3, 2019. **(licensed)**
2. United States Patent 9,924,906: Random body movement cancellation for non-contact vital sign detection, March 27, 2018. **(licensed)**
3. United States Patent 9,833,200: Low IF architectures for noncontact vital sign detection, December 5, 2017. **(licensed)**
4. United States Patent 9,774,239: Method and apparatus for providing power, September 26, 2017.
5. United States Patent 9,477,812: Random body movement cancellation for non-contact vital sign detection, October 25, 2016. **(licensed)**
6. United States Patent 9,200,945: Wavelength Division Sensing RF Vibrometer for Accurate Measurement of Complex Vibrations, December 1, 2015. **(licensed)**
7. United States Patent 8,814,805: Complex Signal Demodulation and Angular Demodulation for Non-contact Vital Sign Detection, August 26, 2014. **(licensed)**
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