

Jenshan Lin

Affiliation and Contact Information

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Education

03/1994 Ph.D. in Electrical Engineering, University of California at Los Angeles
12/1991 M.S. in Electrical Engineering, University of California at Los Angeles
06/1987 B.S. in 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 Research Engineer Industrial Technology Research Institute (ITRI), Hsinchu, Taiwan
10/1987-05/1989 Second Lieutenant Army, Taiwan (mandatory military service)

Other Appointments

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

Professional Organizations

- Institute of Electrical and Electronics Engineers (IEEE) – Senior Member since 2000
Microwave Theory and Techniques Society (MTT-S), Solid State Circuits Society (SSCS),
Engineering in Medicine and Biology Society (EMBS), Communications Society (COMSOC).

Awards and Honors

- 2007 N. Walter Cox Award of IEEE Microwave Theory and Techniques Society
- 1997 ETA KAPPA NU Outstanding Young Electrical Engineer Award, Honorable Mention
- 1994 UCLA School of Engineering and Applied Science Outstanding Ph.D. Award

Advisor/coauthor of students' awards

- 2008 IEEE MTT-S Graduate Fellowship Award (advisor of Changzhi Li)
- 2008 IEEE MTT-S Undergraduate/Pre-Graduate Scholarship Award (advisor of Gabriel Reyes)
- 2007 IEEE Radio and Wireless Symposium Best Student Paper Award 2nd place (coauthor and advisor of Changzhi Li)
- 2004 IEEE MTT-S Undergraduate/Pre-Graduate Scholarship Award (advisor of Jerry Jun)
- 2003 IEEE IMS Best Student Paper Award 1st place (coauthor and industry advisor of Amy Droitcour)
- 2001 IEEE IMS Best Student Paper Award Honorable Mention Award (coauthor and industry advisor of Amy Droitcour)
- 1997 IEEE IMS Best Student Paper Award 2nd place (coauthor and advisor of Joel Dawson)

Committee Activities

Elected Member, IEEE MTT-S Administrative Committee (AdCom) for the term of 2006-2008.

Chair/Co-Chair/Vice-Chair/Organizer/Co-organizer

- 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)
- Chair, MTT GOLD Committee (2007-present)
- Technical Program Co-Chair, IEEE RFIC Symposium (2006)
- Finance Chair, IEEE Radio and Wireless Symposium (2007)
- Workshops Chair, IEEE Radio and Wireless Symposium (2006)
- Session Chair, IEEE Radio and Wireless Symposium (2006)
- Vice Chair, Membership Services Committee, IEEE MTT-S AdCom (2006-present)
- Vice Chair, Microwave Education Fund Committee, IEEE MTT-S AdCom (2005)
- Vice Chair, Electronic Information Committee, IEEE MTT-S AdCom (2005-present)
- Finance Chair, IEEE RFIC Symposium (2005)
- Co-Chair, Wireless and Cellular Communications Subcommittee, IEEE International Microwave Symposium Technical Program Committee (2005)
- Session Chair, IEEE International Microwave Symposium (2005)
- Tutorials Chair, IEEE Wireless and Microwave Technology Conference (2005)
- Session 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, "RFIC Technology Evolution and Reality: Challenges to Designers and Manufacturers" in IEEE RFIC Symposium (2004)
- Chair, Wireless Data System IC Subcommittee, IEEE RFIC Symposium Technical Program Committee (2003-2004)

- Web Team Chair, IEEE International Microwave Symposium (2003)
- Local Arrangement Chair, IEEE RFIC Symposium (2003)
- Session Chair, IEEE RFIC Symposium (2002-2004)
- Session Chair, IEEE Radio and Wireless Conference (2002-2003)
- Co-Chair, Frequency Generation Subcommittee, IEEE RFIC Symposium Technical Program Committee (2002)
- Workshop Co-Organizer: "Advances in Bluetooth Technology" in IEEE International Microwave Symposium (2002)
- Session Chair, IEEE Sarnoff Symposium (2001)
- Session Chair, IEEE Workshop on Chip-Package Co-Design (1998, 2000)

Committee Member

- International Advisory Committee, Asia-Pacific Microwave Conference (2008)
- Technical Program Committee, Radar Sensor Technology, SPIE International Symposium on Defense and Security (2008-present)
- Executive Committee, IEEE RFIC Symposium (2007-present)
- International Advisory Committee, IEEE 7th International Symposium on Communications and Information Technologies (2007)
- International Advisory Committee, IEEE International Workshop on Radio-Frequency Integration Technology (2007)
- Membership Services Committee, IEEE MTT-S AdCom (2006-present)
- Publications Committee, IEEE MTT-S AdCom (2005-present)
- Electronic Information Committee, IEEE MTT-S AdCom (2003-present)
- Executive Committee, IEEE Radio and Wireless Symposium (2007, 2009)
- IEEE MTT-S MTT-20 Technical Committee on Wireless Communications (2002-present)
- Steering Committee, IEEE International Microwave Symposium (2003, 2007)
- Steering Committee, IEEE RFIC Symposium (2003-present)
- Steering Committee, IEEE Radio and Wireless Symposium (2004-present)
- Technical Program Committee, IEEE International Microwave Symposium (2002-2005)
- Technical Program Committee, IEEE RFIC Symposium (2002-present)
- Technical Program Committee, IEEE Radio and Wireless Symposium (2002-present)
- 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)
- Balloting Committee, IEEE 802.16 Wireless MAN (later became WiMAX) Standard (2001)

Editorial Board/Reviewer

- Associate Editor, IEEE Transactions on Microwave Theory and Techniques (2006-present)
- Reviewer of IEEE Transactions on Microwave Theory and Techniques, Journal of Solid State Circuits, Microwave and Wireless Components Letters, Transactions on Circuits and Systems, Transactions on CPMT, Transactions on VLSI Systems, International Microwave

Symposia, RFIC Symposia, VLSI Circuits Symposia, Asia-Pacific Microwave Conferences, IEE/IET Electronics Letters...

Panel Reviewer

- National Science Foundation (NSF)
- Semiconductor Research Corporation (SRC)
- Industrial Technology Research Institute (ITRI, Hsinchu, Taiwan)
- External Thesis Examiner, Nanyang Technological University, Singapore
- Science & Engineering Research Council of Singapore

University of Florida Committees

- Elected Senator, University of Florida Faculty Senate (Aug. 2006-Aug. 2009)
- Elected member of Faculty Council, College of Engineering (Aug. 2006-Aug. 2009)
- ECE Department Budget Committee (2008-present)
- ECE Department Intel Chair Search Committee (2004-present)
- ECE Department PhD Exam Committee (2004-2008)
- ECE Department Faculty Search Committee (2003-2006)
- ECE Department Financial Aid Committee (2004)

Teaching

PhD Students Supervised

- Completed
 1. Xiuge Yang, "Low Power Software Configurable Modulator for Wireless Communications," Spring 2006
 2. Ashok Verma, "Design and Characterization of Frequency Conversion Circuits for Wireless Applications," Spring 2006
 3. Yanming Xiao, "Low-Power Radar System for Remote Detection of Heartbeat and Respiration using Double-Sideband Transmission and Frequency Tuning Technique," Spring 2007
 4. Sangwon Ko, "Linearization Techniques For Integrated CMOS Power Amplifiers and High Efficiency Class-F GaN Power Amplifier," Summer 2007
 5. Hyeopgoo Yeo, "A Design of Multi-Gbps Serial Link Transceiver Using Bandwidth-Efficient Half-Symbol-Rate-Carrier OQPSK Modulation," Summer 2007
 6. Tien-Yu Chang, "Design of Wideband Communication Circuits," Spring 2008
 7. Lance Covert, "Dual-Function Heatsink Antennas for High-Density Three-Dimensional Integration of High-Power Transmitters," Spring 2008.
- Current
 - Changzhi Li, Zhen Ning Low, Mingqi Chen, Xiaogang Yu, Mingkai Mu, Yan Yan, Austin Chen, Richard Goldberg, Zivin Park, Joaquin Casanova

MS Students Supervised (Thesis Option)

- Completed
 - Jerry Jun, "Design and Testing of a Self-Powered Wireless Hydrogen Sensing Platform," Spring 2006

Courses Taught in University of Florida

- Radio Frequency Circuits and Systems (Graduate course covering EM waves, antennas, RF circuits, digital communications systems, and wireless standards) – Fall 2003, Fall 2004, Fall 2005, Fall 2006, Fall 2007
- Electronic Circuits 2 (Undergraduate) – Spring 2004, Spring 2005
- Antenna Systems (Undergraduate) – Spring 2006, Spring 2007, Spring 2008

Invited Lecture/Short Course/Tutorial

- "Wireless Communications Standards, Systems, and RFIC Specifications," 3-hour short course in Asia-Pacific Microwave Conference, Yokohama, Japan, December 12, 2006.
- "RF Circuits, Systems, and Wireless Communications Standards," 6-hour tutorial, National Sun Yat-Sen University, Kaohsiung, Taiwan, July 17-18, 2006.
- "RF Circuits, Systems, and Wireless Communications Standards," 5-day lecture, National Taiwan University, Taipei, Taiwan, July 10-14, 2006.
- "RF Design for Wireless System Integration," 6-hour tutorial, ITRI, Hsinchu, Taiwan, July 7, 2006.
- "RF System On Chip," Ministry of Education SOC Lecture, Taiwan, June 23-29, 2004.
- "RFIC Design for Wireless Communications," 3-hour Tutorial in 12th VLSI Design/CAD Symposium, Taiwan, August 14, 2001.
- "RFIC Design and System" one-day tutorial in International Symposium on IC Design and Applications, Singapore, September 8, 1999.
- "RFIC Design and Applications," one-day tutorial in International Symposium on IC Design and Applications, Singapore, September 10, 1997.
- "RFIC Design for Modern Wireless Communications," invited two-day tutorial in Wireless Workshop, Ministry of Economics, Taipei, Taiwan, May 5-6, 1997.
- "Passive RF Fundamentals," IEEE Lehigh Valley Section RFIC Design Course Series, Allentown, May 31, 1996.

Research Highlights

University of Florida

- External grant funding received since 2003: \$5.3M (\$2.79M as PI, \$2.51M as Co-PI)
 - NSF Major Research Instrumentation Award (PI)
Led the proposal team and received the award to purchase \$325,000 equipment to build a 110GHz millimeter-wave device characterization system.
 - Remote Non-contact Vital Sign Detection (PI) – Patented tunable double-sideband sensing technique that improves detection range and accuracy. Technology has been licensed for sleep apnea monitoring.
 - NASA Hydrogen Research – Sensors and Sensor Systems (PI)
Led an interdisciplinary research team from 4 departments. Demonstrated Self-Powered Wireless Hydrogen Sensor System. Demonstrated complete wireless hydrogen leak detection system at Greenway FORD in Orlando.
 - NASA Hydrogen Research – Remote Wireless Power Transmission for Regenerative Fuel Cells (PI)
 - Planar Wireless Power Transfer System (PI)
Helped founded WiPower Inc and received Florida High Tech Matching Fund. Demonstrated high efficiency at high power and had a press release. Invited to 2007 Florida Venture Conference for presentation and demonstration.

- ONR 20GHz GaN Wide-Band Receiver (PI)
Led by University of Florida, a collaborative research project with University of Hawaii and Northrop Grumman Corporation.
- Bandwidth-Efficient Modulation for High Speed Interconnect, funded by ITRI, Taiwan. (PI)
- AFRL High-Density Three-Dimensional Packaging Technology for RF Devices (Co-PI)
Created a new idea of dual-function "Heatsink Antenna" for 3-D structure.
- DARPA RF Subsystem Research (Co-PI)
Advised students to design low power mixers and modulators for this project to build a 24GHz transceiver system-on-chip.

Bell Laboratories

- Led a group of RF/Microwave designers to work on projects of advanced wireless communications circuits and systems:
 - All-silicon system-on-chip solution for next generation ultra-small base stations in wireless networks:
Demonstrated the first RFIC receiver chip for cellular network base stations, achieving stringent base station specifications in low cost silicon CMOS technology. The research work was presented in ISSCC2001 with press release at the conference. Worked with Lucent Network Wireless Systems Business Unit to transfer the technology to next generation product development.
 - Telesensing of vital signs technology to be implemented in future wireless networks:
Demonstrated the first RFIC chip for wireless sensing of cardiopulmonary signs including heart beat and respiration.
- Mentor and MS thesis advisor of Corporate Research Fellowship student Joel Dawson from MIT. The research work on adaptive antenna with automatic gain control received IMS2007 Best Student Paper Contest 2nd place award. Awarded a patent by USPTO. Dr. Dawson is now an Assistant Professor in MIT.

Publications and Patents

165 papers published in refereed journals and conference proceedings. 6 patents awarded. See publications list for details.

News Release/Media Coverage

1. "UF engineers: Wireless charger provides efficient cord-free charging," Dec. 12, 2007.
<http://news.ufl.edu/2007/12/12/charge-pad/>
<http://news.ufl.edu/2007/12/12/cordless-charger/>
2. "For the future hydrogen economy, a tiny, self-powered sensor," May 24, 2006.
<http://news.ufl.edu/2006/05/24/hydrogen-sensor/>
http://www.eng.ufl.edu/newsroom/topstories/detail_article.php?id=778
3. "CURIOUS ABOUT YOUR VITAL SIGNS? ONE DAY SOON, CHECK YOUR LAPTOP," May 16, 2005.
http://www.eng.ufl.edu/newsroom/topstories/detail_article.php?id=399
<http://news.ufl.edu/2005/05/16/heart-monitor/>

4. "Innovative silicon-chip design from Lucent's Bell Labs may speed rollout and lower costs of wireless networks," February 7, 2001