

# Changzhi Li

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## Education

PhD Electrical & Computer Engineering, University of Florida, 2009  
MS Electrical & Computer Engineering, University of Florida, 2007  
BS Information & Electronic Engineering, Zhejiang University, China, 2004

## Employment History

- **Associate Professor**, Department of Electrical and Computer Engineering, Texas Tech University, Sept 2014 – Present.
- **Assistant Professor**, Department of Electrical and Computer Engineering, Texas Tech University, Aug 2009 – Aug 2014.
- **RFIC Intern**, Coherent Logix inc., Austin, TX, Jun 2009 – Aug 2009.
- **RFIC Intern**, Alereon inc., Austin, TX, May 2008 – Aug 2008, May 2007 – Aug 2007.
- **Research Assistant**, Tsinghua University, Aug 2004 – Jul 2005.

## Honors and Awards

- IEEE Sensors Council Early Career Technical Achievement Award, 2016.
- Texas Tech University Teaching Academy Member, elected 2016.
- Chancellor's Council Distinguished Research Award, Texas Tech University, 2015.
- George T. and Gladys Abell-Hanger Faculty Award, TTU Whitacre College of Engineering, 2015.
- IEEE-HKN Outstanding Young Professional Award, 2014.
- ASEE Frederick Emmons Terman Award, 2014.
- Whitacre Research Award, Texas Tech University, 2014.
- NSF Faculty CAREER Award, 2013.
- Texas Tech Alumni Association New Faculty Award, 2012.
- Finalist, Vodafone Wireless Innovation Project, 2011.
- Best Conference Paper Award in 3<sup>rd</sup> place, 12<sup>th</sup> Annual IEEE Wireless and Microwave Technology Conference, 2011.
- IEEE Microwave Theory and Techniques Society (MTT-S) Graduate Fellowship, 2008.
- Best Student Paper Award in 2<sup>nd</sup> place, IEEE Radio and Wireless Symposium, 2007.
- Graduate Alumni Fellowship, University of Florida, 2005~2009.
- First Class Scholarship, 2000~2004, Zhejiang University.

## Honors and Awards of Students Supervised

- IEEE MTT-S Graduate Fellowship, 2016 (Zhengyu Peng)
- IEEE MTT-S Pre-Graduate Scholarship, 2015 (Chenhui Liu)
- IEEE MTT-S Pre-Graduate Scholarship, 2014 (Yao Tang)
- Best Student Paper Award in 1<sup>st</sup> place, IEEE Topical Conference on Bio-medical Wireless Technologies, Networks, and Sensing Systems (BioWireleSS), 2014 (Yiran Li)
- Best Student Paper Award in 2<sup>nd</sup> place, IEEE Topical Conference on Bio-medical Wireless Technologies, Networks, and Sensing Systems (BioWireleSS), 2014 (Sharmi Banerjee)
- IEEE MTT-S Pre-Graduate Scholarship, 2013 (Anudeep Malepati)
- IEEE MTT-S Graduate Fellowship in Medical Applications, 2013 (Changzhan Gu)
- TTU Horn Professor's Graduate Achievement Award, 2013 (Changzhan Gu)
- Chinese Government Award for Outstanding Self-financed Students Abroad, 2012 (Changzhan Gu)
- Best Student Paper Award in 1<sup>st</sup> place, IEEE Topical Conference on Bio-medical Wireless Technologies, Networks, and Sensing Systems (BioWireleSS), 2013 (Changzhan Gu)
- Best Conference Paper Award, 13<sup>th</sup> Annual IEEE Wireless and Microwave Technology Conference, 2012

(Yihong Yang).

- Student Paper Competition Finalist, IEEE International Symposium on Circuits and Systems (ISCAS), 2012 (Li Lu)
- Best Student Paper Award in 2<sup>nd</sup> place, IEEE Topical Conference on BioWireleSS, 2012 (Changzhan Gu)
- Best Student Paper Award in 4<sup>th</sup> place, IEEE Topical Conference on BioWireleSS, 2011 (Changzhan Gu)
- Best Paper in Poster Session Award, 11<sup>th</sup> Annual IEEE Wireless and Microwave Technology Conference, 2010 (Li Lu)

### **Research Activities**

RF/analog circuits, wireless sensors, energy efficiency of microelectronics, microwave and millimeter-wave circuits, biomedical applications of microwave/RF.

### **Professional Activities**

#### ***Editorship:***

- Associate Editor, *IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology*, 2017–present.
- Associate Editor, *IEEE Transactions on Circuits and Systems I*, 2016–present
- Guest Editor, *IEEE Transactions on Microwave Theory and Techniques*, for special issue on “Emerging RF Measurement Techniques and Applications”, 2016
- Guest Editor, *Sensors* (ISSN 1424-8220), for special issue on “Non-contact Sensing”, 2016
- Associate Editor, *IEEE Transactions on Circuits and Systems II*, 2014–2015
- Area Editor, *International Journal of Electronics and Communications*, 2011–2013

#### ***Chair/Sub-committee Chair of Technical Program Committee (TPC)***

- International Microwave Symposium (IMS) TPRC-34 Chair, 2016–2017
- TPC Co-Chair, IEEE Wireless and Microwave Technology Conference (WAMICON), 2012~2013;

#### ***Organizer of Workshop and Special Sessions***

- Special session, ‘Circuits for Enhancing Access to Radio Spectrum (EARS) and Phased-Array Radar’, 58<sup>th</sup> IEEE Midwest Symposium on Circuits and Systems (MWSCAS), 2015;
- Workshop, ‘Modern Radar Systems for High Resolution Ranging, Indoor Localization, and Vital Signs Detection’ International Microwave Symposium (IMS), 2015;
- Special session, ‘Reconfigurable RF-CAS for RADAR, Cognitive Radio and EARS - I & II’, 57<sup>th</sup> IEEE Midwest Symposium on Circuits and Systems (MWSCAS), 2014;
- Workshop, ‘Recent Advances in Radar Indoor Sensors, Wireless Implantable Devices and Biosensors’, International Microwave Symposium (IMS), 2014;
- Workshop, ‘Diversity in Biomedical Radar Applications’, IEEE Radio Wireless Week (RWW), 2014;

#### ***Chair of Design Competition and Demo Track***

- Chair, IEEE Radio Wireless Week Demo Track, 2014~2017;
- Co-Chair, International Microwave Symposium (IMS) Student Design Competition ‘High Sensitivity Radar’, 2014~2015;

#### ***TPC Member***

- International Microwave Symposium (IMS, TPRC-34 RF Devices for Wireless Health Care Applications, 2011~present); IEEE Topical Conference on Biomedical Wireless Technologies, Networks & Sensing Systems (part of RWW, 2011~present); IEEE Topical Conference on Wireless Sensors and Sensor Networks (part of RWW, 2011~present); SPIE Radar Sensor Technology Conference (2010~present); IEEE Wireless and Microwave Technology Conference (WAMICON, 2010~present); Asia-Pacific Microwave Conference (APMC, 2011~present); IEEE MTT-S International Microwave Workshop Series on RF and Wireless Technologies for Biomedical and Healthcare Applications (IMWS-Bio, 2013~present); MOBIHEALTH 2015;

#### ***Others***

- Co-Chair, MTT TC-10 Biological Effect and Medical Applications of RF and Microwave, 2015~present;
- Chair, Frederick Emmons Terman Award (ASEE) committee, 2015;
- Secretary, IEEE South Plains Section, 2012~present;
- Co-Chair, Graduate Fellowship in Medical Applications award committee, IEEE MTT-S, 2013~present;
- NSF panelist, Division of ECCS (Feb 2012, Feb 2013);
- Member, IEEE MTT-S Education Committee, 2012~present;
- Member, MTT TC-10 Biological Effect and Medical Applications of RF and Microwave, 2011~present;

## **Student Supervision**

### **Current**

- **PhD:** Yiran Li, Anthony Flores Nigaglioni, Zhengyu Peng, Yao Tang, Anna Wang
- **Undergraduate:** Amy Weatherby

### **Completed**

- **PhD:** Li Lu (Qualcomm), Changzhan Gu (Maxlinear→Marvell→Google), Yihong Yang (Synaptics), Guochao Wang (Maxlinear)
- **M.S.:** Abhishek Angadi (Broadcom→Qualcomm), Stephen Rodriguez (Texas Instruments), Satyabh Mishra (Qualcomm→Qorvo), Sharmi Banerjee (Virginia Tech), Devashish Deshpande (Qualcomm), Longfei Wang (WSU), Krishna Kannaya Kailash (Intel), Juan Rodriguez (Intel), Bozorgmehr Vosoooghi (University of Houston), Chenhui Liu (Qualcomm), Supreet Juneja (Intel), Douglas Nichols (Sandia National Lab)
- **Undergraduate:** Anthony Flores Nigaglioni (Universidad de Puerto Rico, summer 2014)
- **High school:** Robert Henning (Clark Scholar 2015, Mission Hills High School, San Marcos, CA→MIT), Aditya Bhumbala (Clark Scholar 2013, California High School in San Ramon, CA→UC Berkeley), Ali Kocaturk (Dallas TX, 2012)

### **Committee Member**

- **TTU:** Tri Doan (PhD), Sashi Majety (PhD), Mohammad Fairouz (PhD), Atiqul Islam (PhD), Sahil Oak (PhD), Subash Vegesna (PhD), Cemile Bardak (PhD), Forrest Bao (PhD), Dhanya Nair (PhD), Sashikanth Majety (PhD), Ashish Mishra (M.S.), Bailey Ulferts (M.S.), Sri Rathana Rangiseti (M.S.), Bo Hu (M.S.), Venkateswara Rao Vemuri (M.S.), Xiaodong Cai (M.S.), Ravi Ichapurapu (M.S.), Divya Reddy (M.S.), Jason Durbin (M.S.), Amy Fleischmann (M.S.), Nozar Naing (M.S.), Mozar Naing (M.S.), Purvi Patni (M.S.), Tolu Owodunni (M.S.), Davis Hoover (M.S.), Vishvabandhu Chaudhary (M.S.), Manisha Potay (M.S.), Yang Yang (M.S.), Hao Xu (M.S.), Sam Grenadier (M.S.), Xin Chen (M.S.)
- **External:** Zivin Park (PhD, University of Florida), Mari Zakrzewski (PhD, Tampere University of Technology, Finland)

## **Publications**

**Google Scholar Profile:** <http://scholar.google.com/citations?user=Hx6pVv4AAAAJ>

(Citations: 2604, h-index: 28, i10-index: 65)

### **Book Authored**

- [1] C. Li, J. Lin, "Microwave Motion Sensing and Analysis," John Wiley & Sons, ISBN: 978-0470642146, 2013.

### **Book Edited**

- [1] C. Li, M. Tofighi, D. Schreurs, T.-S. Horng, "Principles and Applications of RF/Microwave in Healthcare and Biosensing," Elsevier, ISBN: 9780128029039, 2016.

### **Book Chapters**

- [1] C. Gu, C. Li, "Physiological Radar Sensor Chip Development," *Medical and Biological Microwave Sensors and Systems*, ISBN: 9781107056602, Cambridge University Press, Chapter 6, 2017.
- [2] C. Li, D.M.M.-P. Schreurs, "Fundamentals of microwave engineering", *Principles and Applications of RF/Microwave in Healthcare and Biosensing*, ISBN: 9780128029039, Elsevier, Chapter 1, 2016.
- [3] J.-M. Muñoz-Ferreras, R. Gómez-García, C. Li, "Human-aware Localization using Linear-frequency-modulated Continuous-wave Radars," *Principles and Applications of RF/Microwave in Healthcare and Biosensing*, ISBN: 9780128029039, Elsevier, Chapter 5, 2016.
- [4] L. Lu, C. Gu, C. Li, J. Lin, "Doppler Radar Noncontact Vital Sign Monitoring," *Neural Computation, Neural Devices, and Neural Prosthesis*, ISBN: 9781461481508, Springer New York, Chapter 3, pp. 41-62, 2014.
- [5] B.H. Chu, T.J. Anderson, H.T. Wang, D.P. Norton, S.J. Pearton, C. Li, J. Lin, Y.L. Wang, J. Kim, L.C. Tien, J.W. Johnson, A. Dabiran, F. Ren, "Recent Advances in Wide Bandgap Semiconductor Based Gas Sensors", *Semiconductor Gas Sensors*, ISBN: 9780857098665, Woodhead Publishing Limited, UK, Chapter 5, 2012.

### **Articles in Refereed Journals**

- [1] Z. Peng, L. Ran, C. Li, "A K-Band Portable FMCW Radar with Beamforming Array for Short-Range Localization and Vital-Doppler Targets Discrimination," *IEEE Transactions on Microwave Theory and Techniques*, in print, 2017.
- [2] X. Wang, J. Shen, J. Wang, Q. Song, Z. Wang, Y. Li, R. Wang, T. Hu, Y. Xia, Q. Sun, X. Yin, W. Cui, H. Zhang, X. Zhang, C. Liu, C. Li, L. Ran "Monte Carlo Analysis of Occurrence Thresholds of Multicarrier

- Multipactors," *IEEE Transactions on Microwave Theory and Techniques*, in print, 2017.
- [3] 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 Non-Contact Microwave Radar Systems," *IEEE Transactions on Microwave Theory and Techniques*, in print, 2017.
  - [4] H. Zhao, H. Hong, L. Sun, Y. Li, C. Li, X. Zhu, "Noncontact Physiological Dynamics Detection Using Low-power Digital-IF Doppler Radar," *IEEE Transactions on Instrumentation and Measurement*, in print, 2017.
  - [5] T. Zhou, H. Li, D. Ye, J. Huangfu, S. Qiao, Y. Sun, W. Zhu, C. Li, L. Ran, "Short-range Wireless Localization Based on Meta-aperture Assisted Compressed Sensing," *IEEE Transactions on Microwave Theory and Techniques*, in print, 2017.
  - [6] Z. Peng, J. Muñoz-Ferreras, Y. Tang, C. Liu, R. Gómez-García, L. Ran, C. Li "A Portable FMCW-Interferometry Radar with Programmable Low-IF Architecture for Localization, ISAR Imaging and Vital-Sign Tracking," *IEEE Transactions on Microwave Theory and Techniques*, in print, 2017.
  - [7] S. Guan, J.A. Rice, C. Li, Y. Li, G. Wang, "Structural Displacement Measurements using DC Coupled Radar with Active Transponder," *Structural Control and Health Monitoring*, in print, 2017.
  - [8] F. Lin, Y. Zhuang, C. Song, A. Wang, Y. Li, C. Gu, C. Li, W. Xu, "SleepSense: a Noncontact and Cost-effective Sleep Monitoring System," *IEEE Transactions on Biomedical Circuits and Systems*, vol. 11, no. 1, pp. 189 – 202, February 2017.
  - [9] X. Qi, D. Ye, Y. Sun, C. Li, L. Ran, "Simulations to True Animals' Long-Distance Geomagnetic Navigation," *IEEE Transactions on Magnetics*, vol. 53, no. 1, article no. 5200108, January 2017.
  - [10] T. Fan, C. Ma, Z. Gu, Q. Lv, J. Chen, D. Ye, J. Huangfu, Y. Sun, C. Li, L. Ran, "Wireless Hand Gesture Recognition Based on Continuous-wave Doppler Radar Sensors," *IEEE Transactions on Microwave Theory and Techniques*, vol. 64, no. 11, pp. 4012-4020, November 2016.
  - [11] Q. Meng, B. Zhang, J. Huangfu, C. Li, L. Ran, "Experimental investigation on through-wall imaging based on nonlinear inversions," *IET Electronics Letters*, vol. 52, no. 23, pp. 1933 – 1935, November 2016.
  - [12] J. Muñoz-Ferreras, Z. Peng, Y. Tang, R. Gómez-García, D. Liang, C. Li, "Short-Range Doppler-Radar Signatures from Industrial Wind Turbines: Theory, Simulations, and Measurements," *IEEE Transactions on Instrumentation and Measurement*, vol. 65, no. 9, pp. 2108-2119, September 2016.
  - [13] J. Dong, F. Shen, Y. Dong, Y. Wang, W. Fu, H. Li, D. Ye, B. Zhang, J. Huangfu, S. Qiao, Y. Sun, C. Li, L. Ran, "Non-contact Measurement of Complex Permittivity of Electrically Small Samples at Microwave Frequencies," *IEEE Transactions on Microwave Theory and Techniques*, vol. 64, no. 9, pp. 2883-2893, September 2016.
  - [14] H. Hong, H. Zhao, Z. Peng, H. Li, C. Gu, C. Li, X. Zhu, "Time-Varying Vocal Folds Vibration Detection Using a 24 GHz Portable Auditory Radar," *Sensors*, vol. 16, no. 8, article 1181, August 2016.
  - [15] Q. Meng, K. Xu, F. Shen, B. Zhang, D. Ye, J. Huangfu, C. Li, L. Ran, "Microwave Imaging Under Oblique Illumination," *Sensors*, vol. 16, no. 7, article 1046, July 2016.
  - [16] M. Huang, J. J. Liu, W. Xu, C. Gu, C. Li, M. Sarrafzadeh, "A Self-Calibrating Radar Sensor System Design for Measuring Vital Signs," *IEEE Transactions on Biomedical Circuits and Systems*, vol. 10, no. 2, pp. 352-363, April 2016.
  - [17] C. Gu, Z. Peng, C. Li, "High-Precision Motion Detection Using Low-Complexity Doppler Radar with Digital Post-Distortion Technique," *IEEE Transactions on Microwave Theory and Techniques*, vol. 64, no. 3, pp. 961-971, March 2016.
  - [18] Z. Peng, J. Chen, Y. Dong, B. Zhang, D. Ye, J. Huangfu, Y. Sun, C. Li, L. Ran, "Radio Frequency Beamforming Based on a Complex Domain Frontend," *IEEE Transactions on Microwave Theory and Techniques*, vol. 64, no. 1, pp. 289-298, January 2016.
  - [19] T. Nikoubin, M. Grailoo, C. Li, "Energy and Area Efficient 3-input XOR/XNORs with Systematic Cell Design Methodology (SCDM)," *IEEE Transactions on Very Large Scale Integration Systems*, vol. 24, no. 1, pp. 398-402, January 2016.
  - [20] L. Sun, H. Hong, Y. Li, C. Gu, F. Xi, C. Li, X. Zhu, "Noncontact Vital Sign Detection Based on Stepwise Atomic Norm Minimization," *IEEE Signal Processing Letters*, vol. 22, no. 12, pp. 2479 - 2483, December 2015.
  - [21] L. Lu, B. Vosooghi, L. Dai, C. Li, "A 0.7 V Relative Temperature Sensor with a Non-Calibrated  $\pm 1$  °C 3 $\sigma$  Relative Inaccuracy," *IEEE Transactions on Circuits and Systems I: Regular Papers*, vol. 62, no. 10, pp. 2434 - 2444, October 2015.
  - [22] S. Guan, J.A. Rice, C. Li, Y. Li, G. Wang, "Dynamic and Static Structural Displacement Measurement using Backscattering DC Coupled Radar," *Smart Structures and Systems*, vol. 16, no. 3, pp. 521-535, 2015.

- [23] H. Zhao, H. Hong, L. Sun, F. Xi, C. Li, X. Zhu, "Accurate DC offset calibration of Doppler radar via nonconvex optimization," *IET Electronics Letters*, vol. 51, no. 16, pp. 1282–1284, August 2015.
- [24] J. Zhao, Z. Zhu, W. Cui, K. Xu, B. Zhang, D. Ye, C. Li, L. Ran, "Power Synthesis at 110-GHz Frequency Based on Discrete Sources," *IEEE Transactions on Microwave Theory and Techniques*, vol. 63, no. 5, pp. 1633-1644, May 2015.
- [25] J. Muñoz-Ferreras, Z. Peng, R. Gómez-García, G. Wang, C. Gu, C. Li, "Isolate the Clutter: Pure and Hybrid Linear-Frequency-Modulated Continuous-Wave (LFMCW) Radars for Indoor Applications," *IEEE Microwave Magazine*, vol.16, no.4, pp.40-54, May 2015.
- [26] K. Xu, D. Ye, Z. Zhu, J. Huangfu, Y. Sun, C. Li, L. Ran, "Analytical Beam Forming for Circularly Symmetric Conformal Apertures," *IEEE Transactions on Antennas and Propagation*, vol. 63, no. 4, pp. 1458-1464, April 2015.
- [27] C. Gu, C. Li, "Assessment of Human Respiration Patterns via Noncontact Sensing Using Doppler Multi-Radar System," *Sensors*, vol. 15, no. 3, pp. 6383-6398, March 2015.
- [28] H. Li, D. Ye, F. Shen, B. Zhang, Y. Sun, C. Li, L. Ran, "Reconfigurable Diffractive Antenna Based on Switchable Electrically Induced Transparency," *IEEE Transactions on Microwave Theory and Techniques*, vol. 63, no. 3, pp. 925-936, March 2015.
- [29] Y. Zhang, T. Jiao, H. Lv, S. Li, C. Li, G. Lu, Z. Li, J. Wang, "An Interference Suppression Technique for Life Detection Using 5.75- and 35-GHz Dual-Frequency Continuous-Wave Radar," *IEEE Geoscience and Remote Sensing Letters*, vol. 12, no. 3, pp. 482-486, March 2015.
- [30] J. Muñoz-Ferreras, G. Wang, C. Li, R. Gómez-García, "Mitigation of stationary clutter in vital-sign-monitoring LFMCW radars," *IET Radar, Sonar & Navigation*, vol. 9, no. 2, pp. 138-144, February, 2015.
- [31] C. Gu, W. Xu, G. Wang, T. Inoue, J. A. Rice, L. Ran, C. Li "Noncontact Large-Scale Displacement Tracking: Doppler Radar for Water Level Gauging," *IEEE Microwave and Wireless Components Letters*, vol. 24, no. 12, pp. 899-901, December 2014.
- [32] S. Guan, J. A. Rice, C. Li, C. Gu, "Automated DC Offset Calibration Strategy for Structural Health Monitoring based on Portable CW Radar Sensor," *IEEE Transactions on Instrumentation and Measurement*, vol. 63, no. 12, pp. 3111-3118, December 2014.
- [33] B. Vosooghi, L. Lu, C. Li, "5×5 scattered temperature sensor front-end based on single-diode with non-trimmed  $\pm 0.7^{\circ}\text{C}$   $3\sigma$  relative inaccuracy," *IET Electronics Letters*, vol. 50, no. 24, pp. 1806-1808, November 2014.
- [34] G. Wang, C. Gu, T. Inoue, C. Li, "A Hybrid FMCW-Interferometry Radar for Indoor Precise Positioning and Versatile Life Activity Monitoring," *IEEE Transactions on Microwave Theory and Techniques*, vol. 62, no. 11, pp. 2812 - 2822, November 2014.
- [35] Y. Yang, C. Gu, Y. Li, R. Gale, C. Li, "Doppler Radar Motion Sensor with CMOS Digital DC-Tuning VGA and Inverter-Based Sigma-Delta Modulator," *IEEE Transactions on Instrumentation and Measurement*, vol. 63, no. 11, pp. 2666–2674, November 2014.
- [36] C. Zhang, D. Ma, C. Li, Y. Shi, "Runtime Self-Calibrated Temperature-Stress Co-Sensor for 3D Integrated Circuits," *IEEE Transactions on Very Large Scale Integration Systems*, vol. 12, no. 11, pp. 2411 - 2417 November 2014.
- [37] Z. Zhao, T. Hu, W. Cui, J. Huangfu, C. Li, L. Ran, "Long-distance Geomagnetic Navigation: Imitations of Animal Migration Based on a New Assumption," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 52, no. 10, pp. 6715-6723, October 2014.
- [38] Q. Lv, D. Ye, S. Qiao, Y. Salamin, J. Huangfu, C. Li, L. Ran, "High Dynamic-Range Motion Imaging Based on Linearized Doppler Radar Sensor," *IEEE Transactions on Microwave Theory and Techniques*, vol. 62, no. 9, pp. 1837-1846, September 2014.
- [39] G. Wang, J. Munoz-Ferreras, C. Gu, C. Li, R. Gomez-Garcia, "Application of Linear-Frequency-Modulated Continuous-Wave (LFMCW) Radars for Tracking of Vital Signs," *IEEE Transactions on Microwave Theory and Techniques*, vol. 62, no. 6, pp. 1387-1399, June 2014.
- [40] C. Gu, C. Li, "From Tumor Targeting to Speech Monitoring: Accurate Respiratory Monitoring Using Medical Continuous-Wave Radar Sensors," *IEEE Microwave Magazine*, vol. 15, no. 4, pp. 66-76, June 2014.
- [41] Y. Salamin, J. Pan, Z. Wang, S. Tang, J. Wang, C. Li, L. Ran, "Eliminating the Impacts of Flicker Noise and DC Offset in Zero-IF Architected Pulse Compression Radars," *IEEE Transactions on Microwave Theory and Techniques*, vol. 62, no. 4, pp. 879-888, April 2014.
- [42] R. Wang, D. Ye, S. Dong, Z. Peng, Y. Salamin, F. Shen, J. Huangfu, C. Li, L. Ran, "Optimal Matched Rectifying Surface for Space Solar Power Satellite Applications," *IEEE Transactions on Microwave Theory*

- and Techniques*, vol. 62, no. 4, pp. 1080-1089, April 2014.
- [43] B. Vosooghi, L. Lu, C. Li, "Leakage, Area, and Headroom Tradeoffs for Scattered Relative Temperature Sensor Front-End Architectures," *IEEE Transactions on Circuits and Systems II: Express Briefs*, vol. 61, no. 2, pp. 80-84, February 2014.
- [44] F. Shen, Y. Salamin, J. Dong, Y. Sun, J. Huangfu, C. Li, L. Ran, "Non-contact Measurement of Complex Permittivity Based on the Principle of Mid-range Wireless Power Transfer," *IEEE Transactions on Microwave Theory and Techniques*, vol. 62, no. 3, pp. 669-678, March 2014.
- [45] S. Kazemi, A. Ghorbani, H. Amindavar, C. Li, "Cyclostationary Approach to Doppler Radar Heart and Respiration Rates Monitoring with Body Motion Cancellation using Radar Doppler System," *Biomedical Signal Processing and Control*, vol. 13, pp. 79-88, 2014.
- [46] J. Wang, X. Wang, L. Chen, J. Huangfu, C. Li, L. Ran, "Non-contact Distance and Amplitude Independent Vibration Measurement Based on an Extended DACM Algorithm," *IEEE Transactions on Instrumentation and Measurement*, vol. 63, no. 1, pp. 145-153, January 2014.
- [47] C. Gu, G. Wang, Y. Li, T. Inoue, C. Li, "A Hybrid Radar-Camera Sensing System With Phase Compensation for Random Body Movement Cancellation in Doppler Vital Sign Detection," *IEEE Transactions on Microwave Theory and Techniques*, vol. 61, no. 12, pp. 4678-4688, December 2013.
- [48] Z. Peng, T. Hu, W. Cui, J. Huangfu, C. Li, L. Ran, "Unconventional Beamforming for Quasi-Hemispheric Coverage of a Phased Array Antenna," *IEEE Antenna and Wireless Propagation Letters*, vol. 12, pp. 1654-1657, December 2013.
- [49] L. Lu, S. Block, D. E. Duarte, C. Li, "A 0.45 V MOSFETs-Based Temperature Sensor Front-End in 90nm CMOS with a Non-Calibrated  $\pm 3.5$  °C  $3\sigma$  Relative Inaccuracy from -55 °C to 105 °C," *IEEE Transactions on Circuits and Systems II: Express Briefs*, vol. 60, no. 11, pp. 771-775, November 2013.
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- [51] 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, October 2013.
- [52] K. Xu, H. Li, Z. Zhu, J. Huangfu, C. Li, L. Ran, "Versatile Beam Forming with Concentric Excitations based on Multiple Weighted Sinc or Bessel Function Distribution," *IEEE Transactions on Antennas and Propagation*, vol. 61, no. 8, pp. 4082-4090, August 2013.
- [53] J. Wang, Z. Zhu, C. Li, J. Huangfu, L. Ran, "PLL-based Self-Adaptive Resonance Tuning for a Wireless-Powered Potentiometer," *IEEE Transactions on Circuits and Systems II: Express Briefs*, vol. 60, no. 7, pp. 392-396, July 2013.
- [54] L. Lu, C. Li, "Offset Error Reduction Using a Gate-Bulk-Driven Error Correction Amplifier for a Low-Voltage Subbandgap Reference," *IET Electronics Letters*, vol. 49, no. 11, May 2013.
- [55] Y. Yang, Y. Yang, L. Lu, J. Chen, R. Gale, C. Li, "An Inverter-based Second-order Sigma-delta Modulator for Smart Sensors," *IET Electronics Letters*, vol. 49, no. 7, pp. 469-471, March 2013.
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- [57] J. Wang, X. Wang, Z. Zhu, J. Huangfu, C. Li, L. Ran "1-D Microwave Imaging of Human Cardiac Motion: an ab-initio Investigation," *IEEE Transactions on Microwave Theory and Techniques*, vol. 61, no. 5, pp. 2101-2107, May 2013.
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