

## C.V.

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### **RESEARCH INTREST**

- Design and Analysis of RF Circuits and Systems
- Biomedical RF Circuits
- High Purity Oscillators
- Analog and Mixed Signal Integrated Circuits
- Data Converters (ADC/DAC)

### **EDUCATION**

**Ph.D.** (Electrical Engineering).

Electronics, Engineering Department, Ferdowsi University of Mashhad (FUM), Iran,(2009- 2013).

**Thesis Title:** Injection-locked Quadrature and Multiphase Oscillators.

**M.Sc.** (Electrical Engineering).

Electronics, Engineering Department, Ferdowsi University of Mashhad (FUM), Iran, (2008-2009).

**Thesis Title:** Design of Low-Power Low-Phase Noise CMOS LC Quadrature and Multiphase VCOs.

**B.Sc.** (Electrical Engineering).

Electronics, Engineering Department, Ferdowsi University of Mashhad (FUM), Iran, (2004-2008).

**Thesis Title:** Design and Implementation of Speedometer for Train using GPS.

### **Reviewer of**

1. Analog Integrated Circuits and Signal Processing Journal- Springer
2. Measurement Journal-ELSEVIER
3. IEEE Transaction on VLSI (TVLSI)
4. International Journal of Engineering (IJE)
5. Iranian Conference on Electrical Engineering (ICEE)
6. Circuit World (Emerald)
7. IET Microwaves, Antennas & Propagation
8. IET Circuits, Devices & Systems
9. Iranian Journal of Electrical and Electronic Engineering (IJEED)
10. IEEE Transactions on Instrumentation and Measurement

### **PUBLICATION**

#### **Conferences:**

1. E. Ebrahimi, S. Naseh, "A CMOS Low-Noise Low-Power Quadrature LC Oscillator," IEEE International Symposium on Circuits and Systems (ISCAS), pp.1305-1308, May 2009.
2. E. Ebrahimi and S. Naseh, "Investigating the performance of cross-coupled CMOS LC-VCOs using genetic algorithm," 21<sup>st</sup> IEEE International Conference Radioelektronika, April 2011.

3. M. Jamali and E. Ebrahimi, "A new Fractional-N frequency synthesizer using Nested-PLL architecture," 25<sup>th</sup> Iranian Conference on Electrical Engineering (ICEE), May 2017, DOI: 10.1109/IranianCEE.2017.7985408.
4. Y. Majd and E. Ebrahimi, "Low-Power High -Gm Quadrature LC-VCO Using Darlington Cell," 26<sup>th</sup> Iranian Conference on Electrical Engineering (ICEE), May 2018.
5. H. Najafi and E. Ebrahimi, "A Novel Divide-by-3 Colpitts Injection Locked Frequency Divider Using Back-gate Injection," 26<sup>th</sup> Iranian Conference on Electrical Engineering (ICEE), May 2018.
6. A. Ghloizade and E. Ebrahimi, "Recognition of the eye movement direction and blinking using Electro-Oculographic potential," 26<sup>th</sup> Iranian Conference on Electrical Engineering (ICEE), May 2018.

۱. عماد ابراهیمی، حبیب رجیبی مشهدی و ساسان ناصح، ارائه یک ابزار طراحی جدید مبتنی بر شبیه سازی، برای بهینه سازی نوسانسازهای LC با استفاده از الگوریتم ژنتیک چندهدفی، پانزدهمین کنفرانس بین المللی سالانه انجمن کامپیوتر ایران، اسفند ۱۳۸۸.
۲. عماد ابراهیمی و ساسان ناصح، ساختاری جدید برای نوسانسازهای متعامد LC با نویز فاز و توان مصرفی پایین در فناوری CMOS، هجدهمین کنفرانس مهندسی برق ایران، اردیبهشت ۱۳۸۹.
۳. محمدرضا جمالی و عماد ابراهیمی، طراحی و شبیه سازی یک رگولاتور با افت ولتاژ کم و بندگپ زیر یک ولت با حساسیت دمایی بسیار پایین در تکنولوژی CMOS، اولین کنفرانس بین المللی دستاوردهای نوین پژوهشی در مهندسی برق و کامپیوتر، ۱۳۹۵.
۴. عماد ابراهیمی و علی کریمی، افزایش گستره خطی ورکتور MOS با استفاده از اثر بدنه، بیست و پنجمین کنفرانس مهندسی برق ایران، اردیبهشت ۱۳۹۶.
۵. الهام صادقی و عماد ابراهیمی، جبران سازی حرارتی نوسان ساز حلقوی زیرآستانه در تکنولوژی CMOS، بیست و ششمین کنفرانس مهندسی برق ایران، اردیبهشت ۱۳۹۷.

### Journals:

1. E. Ebrahimi and S. Naseh, "New capacitive coupled superharmonic quadrature LC-VCO," *IEICE Electronics Express-ELEX*, Vol. 7, No. 13, pp. 956-963, 2010.
2. E. Ebrahimi and S. Naseh, "A new low-phase noise direct-coupled CMOS LC-QVCO," *IEICE Electronics Express-ELEX*, Vol. 6, No. 18, pp. 1337-1344, 2009.
3. E. Ebrahimi and S. Naseh, "A new robust capacitively coupled second harmonic quadrature LC oscillator," *Analog Integrated Circuits and Signal Processing Springer*, Vol. 66, No. 2, DOI 10.1007/s10470-010-9512-6, July 2010.
4. M. Asyaei and E. Ebrahimi, "A low-phase noise injection-locked quadrature voltage-controlled oscillator," *Analog Integrated Circuits and Signal Processing Springer*, DOI: 10.1007/s10470-011-9779-2, Sep. 2011.
5. E. Ebrahimi and S. Naseh, "A Colpitts CMOS Quadrature VCO Using Direct Connection of Substrates for Coupling," *IEEE Transactions on Very Large Scale Integration (VLSI) System*, Vol 21, No. 3, pp. 571-574, 2013.
6. M. Rezaei, E. Ebrahimi, S. Naseh, M. Mohajerpour, "A new 1.4-GHz soil moisture sensor," *Measurement*, Vol. 45, No. 7, pp. 1723-1728, 2012.
7. A. Ebrahimi, Y. Bastan, E. Ebrahimi and H. Shamsi, "Exploiting cross-coupled and body-driven techniques for noise cancellation of an inductor-less wideband LNA," *International Journal of Electronics and Communications (AEÜ)*, Vol. 69, No. 4, pp. 708-714, 2015.
8. M. Asyaei and E. Ebrahimi, "Low power dynamic circuit for power efficient bit lines," *International Journal of Electronics and Communications (AEÜ)*, Vol. 83, pp. 204-212, 2018.

9. A. Ebrahimi, H. Shamsi, A. Ahmadi and E. Ebrahim, "New low-loss tunable microstrip band-pass filter with two transmission zeros," *Analog Integrated Circuits and Signal Processing*, Vol. 98, pp. 401-408, 2019.
10. A. Karimi, E. Ebrahimi, "A new modified I-MOS varactor for linear range enhancement," *Microelectronics Journal*, Vol. 90, pp. 181-186, August 2019.
11. A. Ebrahimi, E. Khodarahmi, E. Ebrahimi, B. Ahmadi and M. Jalali, "Measured impact of different back-off points and cooling methods on pulse-to-pulse stability and sidelobe level of a high-power solid-state amplifier," *IET Radar, Sonar & Navigation*, Vol. 14, No. 2, pp. 335-340, 2020.
12. E. Ebrahimi, S. Naseh, A. Ebrahimi and M. Maymandi-Nejad, "Analytical phase noise study of a back-gate coupled Colpitts quadrature VCO," *Microelectronics Journal*, Vol. 100, June 2020.
13. E. Ebrahimi and M. Arabnasery, "A New Sub-1 Volt 17ppm/°C Offset-Insensitive Resistorless Switched-Capacitor Bandgap Voltage Reference," *Journal of Circuits, Systems and Computers*, Vol. 30, No. 02, 2150029, 2020.
14. E. Ebrahimi, "A new tail-switching superharmonic multiphase LC-VCO," *Circuit World*, Vol. 47 No. 4, pp. 382-390, 2020.
15. Y. Majd, E. Ebrahimi, "Analysis and Design of a New Low-phase Noise and Gm-Enhanced Class-C Quadrature VCO," *IET Microwaves, Antennas & Propagation*, Vol. 14, No. 13, pp. 1537-1546, October 2020.
16. E. Ebrahimi, et. al., "Effect of Tail Capacitor on Phase Noise in LC Cross-connected Oscillators: An Analytical Investigation," *International Journal of Engineering*, 2021.
17. M. Karimian, E. Ebrahimi, "A C-band low-power sub-1volt current-reused multiphase oscillator," *Integration-The VLSI Journal*, Vol. 79, pp. 116-123, 2021.
18. A. Sabbaghi, E. Ebrahimi, "A low-noise current-reused CMOS active inductor by exploiting Gm-boosting technique," *IET Microwaves, Antennas & Propagation*, Vol. 14, No. 13, pp. 1914-1926, November 2021.
19. M. Rasekhi, E. Ebrahimi, H. Aminzadeh, "3.48-nW 58.4ppm/°C Sub-threshold CVR with Four Transistors and Two Resistors," *Journal of Circuits, Systems and Computers*, 2021.
20. E. Ebrahimi, A. Roozbakhsh, M. Rasekhi, "A new slew rate enhancement technique for operational transconductance amplifiers," *International Journal of Circuit Theory and Application*, 2021. <https://doi.org/10.1002/cta.3180>

## **BOOK:**

Translation (to Persian):

E. Ebrahimi & M. Asyaei, "Fundamental of Microelectronics I".

Editing (in Persian):

Design of Analog CMOS Integrated Circuits: Razavi, Behzad (2<sup>nd</sup> Ed.)

## **HONOR**

- Ranked 6<sup>th</sup> (among 120) in Ferdowsi Univ. of Mashhad, Faculty of Engineering upon graduation, 2006.
- Ranked 2<sup>nd</sup> among all graduate students in M.Sc. Electronics Program, Ferdowsi University of Mashhad.

- Ranked 1<sup>st</sup> among all graduate students in Ph.D. Electronics Program, Ferdowsi University of Mashhad.
- Ranked 2<sup>nd</sup> in Ph.D entrance exam (2009).
- Awarded in 8<sup>th</sup> Ferdowsi Festival as 2<sup>nd</sup> excellent engineering book translator.
- Best Teacher Award in Electrical Eng. Department, Shahrood Univ. of Technology, 2015-2020.

## **ACADEMIC EXPERIENCE**

### **Research Assistant**

- IC Design Laboratory, Electrical Engineering Department, Ferdowsi University of Mashhad, Mashhad, Iran, 2010-2012.

### **Teaching Experiences**

- Instructor of:
  1. CMOS Analog Integrated Circuit Design (IC design)
  2. Electronics I & II
  3. Electric Circuits I & II
  4. Digital Logic Circuit Analysis and Design
  5. C programming language
  6. Applied software for electrical engineering
  7. Electronics Lab I-III
- Teaching Assistance
  1. Electric Circuits
  2. Electronics I

### **• Internship Projects**

- Design and implementation of "Microwave Soil Moisture Sensor using microstrip transmission line", Winter 2011.

## **Software and Programming Skills**

- **IC Design and Simulation:** Cadence IC, ADS, HSPICE
- **Circuit Design and Simulation:** SIMULINK, ORCAD, PSPICE
- **PCB Design:** Altium Designer (Protel)
- **Programming Tools:** MATLAB, C++ , VHDL, DSP
- **EDA Tools:** Aldec Active HDL, ModelSim
- **Microcontroller Programming:** Codevision AVR, BASCOM