

Amir Nikpaik

Assistant Professor

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Education:

[Apr. 2014 – Mar. 2015] *Visiting Scholar, RFIC/MMIC Designer*, University of British Columbia (UBC), Vancouver, BC, Canada.

[Sep.2010 – Aug. 2015] *PhD. in Electrical Engineering – Electronics*, Tarbiat Modares University (T.M.U), Department of Electrical Engineering, Faculty Of Engineering, Tehran, Iran.

[Sep. 2007 – Dec. 2010] *M.Sc. in Electrical Engineering – Electronics*, Tarbiat Modares University (T.M.U), Department of Electrical Engineering, Faculty Of Engineering, Tehran, Iran.

[Sep. 2002 – Apr. 2007] *B.S. in Electrical Engineering – Electronics*, Shahid Beheshti University, Department of Electrical and Computer Engineering, *Tehran, Iran.*

Honors & Awards:

2015, Co-recipient of the best paper award (3rd place), RFIC symposium 2015, Arizona, USA.

2012, Recognized as “Elite” by Iran National Elite Foundation (INEF), Tehran, Iran.

2010, Ranked 1st in PhD Entrance exam in Tarbiat Modares University,

2010, Ranked 1st among Electronics M.Sc. Students of ECE Faculty, Tarbiat Modares University.

Research and Work Experiences:

September. 2016-Present:

Assistant Professor, ECE Department, Tarbiat Modares University, Tehran, Iran.

Spring 2014 – Spring 2015:

Visiting Scholar, SoC Lab, ECE Department, UBC, Vancouver, BC, Canada.

Fall 2010- summer 2015:

Research Assistant, Microelectronics Lab, Tarbiat Modares University, Tehran, Iran.

Research Interests:

- RF, mm-wave and Terahertz Integrated Circuits,
- Low Phase Noise Oscillator Design,
- Analysis of Noise in Large Signal and Time-Varying RF/Microwave Circuits • Integrated Frequency Synthesizers,

Selected Publications:

Journals:

A.Ghorbani-Nejad, **A. Nikpaik**, *et al.* "Optimum Conditions for Efficient Second-Harmonic Power Generation in mm-Wave Harmonic Oscillators," IEEE Journal of Solid-State Circuits, vol. 57, pp. 2130 - 2142, 2022.

M. Barzgari, A. Ghafari, **A. Nikpaik**, A. Medi, "Even-Harmonic Class-E CMOS Oscillator," IEEE Journal of Solid-State Circuits, vol. 57, pp. 389-403, 2022.

A. Nikpaik *et al.* "A 219-to-231 GHz Frequency-Multiplier-Based VCO with ~3% Peak DC-to-RF Efficiency in 65-nm CMOS," IEEE Journal of Solid-State Circuits, vol. 53, pp. 1594-1609, 2018.

A. Shirazi, **A. Nikpaik** *et al.* "On the Design of mm-Wave Self-Mixing-VCO Architecture for High Tuning-Range and Low Phase Noise", IEEE Journal of Solid-State Circuits, vol.51, pp. 1210-1222, 2016. **(Invited)**

A. Nikpaik, A. Nabavi, "Analysis of flicker noise conversion to phase noise in CMOS differential LC oscillators", International Journal of Circuit Theory and Application DOI: 10.1002/cta

A. Nikpaik A. Nabavi, "Analysis and Design of a very Low Noise oscillator in CMOS Technology" Electronics Industries Quarterly, vol. 5, no.4, pp. 41-51, 2014..

M.Ataei, A.Nabavi, **A. Nikpaik**, J.Meiguini, "Transformer feedback millimeter-wave VCO with capacitance cancellation technique in 0.18- μm CMOS", *IEICE Electron. Express*, Vol. 8, No. 11, pp.780-787, 2011.

A.Nikpaik, A. Nabavi, "Very low noise current- shaped optimally coupled CMOS LC quadrature VCO", *IEICE Electron. Express*, Vol. 7, No. 8, pp.520-526, 2010.

Conferences:

A. Shirazi, **A.Nikpaik**, et al. "A quad-core-coupled triple-push 295-to-301 GHz source with 1.25 mW peak output power in 65nm CMOS using slow-wave effect", *Proc. of 2016 IEEE Radio Frequency Integrated Circuits Symposium (RFIC)*, 22 May 2016, San Francisco, CA, USA.

A. Nikpaik, et al. "A Dual-Tank LC VCO Topology towards attaining the Maximum Thermodynamically-Achievable Oscillator FoM", *Proc. of IEEE CICC 2015, San-Jose, CA, USA*.

A. Shirazi, **A.Nikpaik** et al. "A Class-C Self-Mixing-VCO Architecture with High Tuning-Range and Low Phase-Noise for mm-Wave Applications", *Proc. of 2015 IEEE Radio Frequency Integrated Circuits Symposium (RFIC)*, 18 May 2015, Phoenix, Arizona, USA. (**Best Paper Award (3rd Place)**).

References:

Prof. Sudip Shekhar, ECE Department, University of British Columbia, sudip@ece.ubc.ca

Prof. Shahriar Mirabbasi, ECE Department, University of British Columbia, shahriar@ece.ubc.ca

Prof. Abdolreza Nabavi, EE department, Tarbiat Modares University, abdoln@modares.ac.ir

Prof. Ehsan Afshari, ECE department, University of Michigan, afshari@umich.edu

Courses Taught:

Integrated Frequency Synthesizer (PhD Level), TMU. (2016-2022, 6 semesters)

Advanced CMOS Integrated Circuit Design, (MS. Level), TMU. (Spring 2017-2022, 5 semesters)

Editorial and Review activities:

Reviewer of IEEE Journal of Solid-State Circuits,

Reviewer of IEEE Transactions on Circuit and Circuits I

Reviewer of IEEE Transactions on Circuit and Circuits II

Reviewer of IEEE Transactions on Microwave Theory and Techniques

Computer Skills:

Technical Softwares: Cadence, Agilent ADS, Sonnet, Momentum, Hspice,

Programming Skills: Matlab, C++, C, Assembly,

Platforms: Windows, Linux/Unix, DOS,

Other: MS Office (Word, Excel, PowerPoint, Visio, ...).

Membership:

IEEE Member

- Solid-State Circuit Society

Extracurricular Activities:

Mentoring and coaching

Playing Setar (An Iranian traditional instrument),

Studying Poetry,