Last updated: Nov. 2021

Mohsen Tamaddon

Date of Birth: Sep. 1985, Tabriz-IRAN

Assistant Professor, Shamsipour Technical College, Technical and Vocational University (TVU).

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EDUCATION

Ph.D. Electrical Eng. (Circuit and System Design.), Amirkabir Univ. of Tech.

Thesis title: *"Analysis and Design of Continuous-Time Sigma-Delta Modulators with Time-Domain Quantization for Broadband Applications".* GPA: 17.30 — Sep. 2016

Supervisor: Professor Mohammad Yavari

M.Sc. Electrical Eng. (Circuit and System Design.), Tarbiat Modares University.

Thesis title: *"Design of a high-resolution Time to Digital Converter (TDC) for ADPLL based frequency synthesizers".* GPA: 18.42 — Feb. 2011

Supervisor: Professor Abdolreza Nabavi

B. Sc. Electrical Eng. (Electronics), Amirkabir Univ. of Tech.

Thesis title: *"Design and simulation of Low Noise Amplifier (LNA) for UWB receivers"* GPA: 16 — Sep. 2008

Supervisor: Professor Mohammad Yavari

Pre University: Physics & Math. GPA: 18.5 — 2002

AWARDS AND HONORS

- **Ranked 200th** among more than 30000 participants in the Electrical Eng M.Sc. Entrance in Iran. — 2008
- **Ranked 340th** among more than 450000 participants in the Nationwide University Entrance Exam. — 2003
- **Ranked 2nd** among all M.Sc. students of Electrical Eng. at Tarbiat Modares University of Tehran**.** — 2010
- **Thesis Funding –** My M.Sc. and Ph.D. Theses financially supported By Iran Telecommunication Research Center (ITRC) and Iran Nanotechnology Initiative Council, respectively. — 2011 & 2013

PUBLICATIONS

- ***Conference Papers***

[1] **M. Tamaddon**, M. Ataei, and A. Nabavi., "Design of a PLL based frequency synthesizer for WiMAX applications," in *Proc. Iranian Conf. Electrical Engineering* (*ICEE*), pp. 377-381, May 2010.

[2] M. Ataei, **M. Tamaddon**, and A. Jannesari, "A Low-Power Sub-threshold CMOS Continuous-Time Active-Filter with Reduced In-Band Noise for WiMAX Applications, "in *Proc. IEEE Symp. Asia Pacific Conference on Circuits and Systems* (APCCAS), pp. 851 - 854, Dec. 2010.

[3] **M. Tamaddon**, and A. Nabavi, "A Comparative Study of Spectral Purity of a Fractional-N Frequency Synthesizer

for WiMAX Applications Employing Several Dithering Techniques," in *Proc. Iranian Conf. Electrical Engineering* (*ICEE*), pp. 1 - 6, May 2011.

[4] **M. Tamaddon**, and M. Yavari, "Design of a Continuous-Time ΣΔ Modulator Using Time Domain Quantization Approach," in *Proc. Iranian Conf. Electrical Engineering* (*ICEE*), pp. 215 - 219, May 2014.

[5] **M. Tamaddon**, and M. Yavari, "Realization of the 2nd-order NTF Enhancement in a Time-Encoded Continuous-Time Sigma-Delta Modulator Using Passive Elements," in *Proc. Iranian Conf. Electrical Engineering* (*ICEE*), pp. 1203 - 1208, May 2015.

[6] M. Davoodi, and **M. Tamaddon**, "Evaluation of The Old People Balance Control Using Delayed Parallel Model," in *Proc. Iranian Conf. Electrical Engineering* (*ICEE*), pp., May 2020.

[7] M .Tamaddon, E. Salimzadeh, and P. DaeiRezaei, "Investigation Of the Conductive Polymer Nano Composites as Photoelectric Materials," in *Proc.* 8th *International Biennial Conference on Ultrafine Grained and Nanostructured Materials* (*UFGNSM*), pp., Nov. 2021.

- ***Journal papers***

[1] **M. Tamaddon**, and A. Nabavi, "A high resolution highly linear low spur fractional time-to-digital converter (FTDC) for ADPLL," *IEICE electronic express*, vol. 8, no. 6, pp. 311-317. Mar. 2011. **(*ISI*)**

[2] **M. Tamaddon**, and A. Nabavi, "Design of a Time Amplifier with a high conversion gain, resolution and a large dynamic range for Time-to-Digital Converter (TDC) in CMOS," *Iranian Journal of Electronic Industries*, Quarterly no.4, Mar. 2011.

[3] **M. Tamaddon**, and M. Yavari, "An NTF-Enhanced Time-Based Continuous-Time Sigma-Delta Modulator," *Journal of Analog Integrated Circuits and Signal Processing*, vol. 85, no. 2, pp. 283-297, Nov. 2015. **(*ISI*)**

[4] **M. Tamaddon**, and M. Yavari, "A wideband time-based continuous-time sigma-delta modulator with 2nd order noise-coupling based on passive elements," *International Journal of Circuit Theory and Applications*, vol. 44, no. 3, pp. 759-779, Mar. 2016. **(*ISI*)**

[5] **M. Tamaddon**, and M. Yavari, "Time-Mode Signal Quantization for Use in Sigma-Delta Modulators," *Amirkabir International Journal of Electrical & Electronics Engineering* (*AIJ-EEE*), vol. 48, no. 1, pp. 53-61, Jun. 2016.

[6] **M. Tamaddon**, and M. Yavari, "High Performance Time-Based Continuous-Time Sigma-Delta Modulators Using a Single-Opamp Resonator and a Noise-Shaped Quantizer," *Microelectronics Journal*, vol. 56, no. 3, pp. 110-121, Oct. 2016. **(*ISI*)**

[7] **M. Tamaddon**, and M. Yavari, "An Oscillatory Noise-Shaped Quantizer for Time-Based Continuous-Time Sigma-Delta Modulators," *International Journal of Circuit Theory and Applications*, vol. 46, no. 3, pp. 384-400, Mar. 2018. **(*ISI*)**

[8] R. Inanlou, O. Shoaei, and **M. Tamaddon**, "An Asynchronous Pulse Width Modulator For DC-DC buck converters," *International Journal of Circuit Theory and Applications*, vol. 48, no. 2, pp. 231-253, Feb. 2020. **(*ISI*)**.

[9] R. Inanlou, O. Shoaei, **M. Tamaddon**, M. Rescati, and A. Baschirotto, "Analysis and Design of an Asynchronous Pulse Width Modulation Technique for Switch Mode Power Supply," *IET Power Electronics*, vol. 13, no. 8, pp. 1636-1648, May. 2020. **(*ISI*)**.

RESEARCH INTERESTS

Signal Processing for Communication Applications.
Analog and Digital CMOS integrated circuit design.

Mixed signal integrated circuit design.

VLSI circuit design.

Data Converter Design.

Radio Frequency Integrated Circuit (RFIC) design.

RF & Microwave Design for Wireless Communications.

Software defined Radio (SDR).

Time-based signal Processing circuit design.

Millimeter Wave (mm-Wave) Integrated Circuit Design.

Active Microwave circuit design.

Integrated Circuit design for signal processing applications.

COMPUTER SKILLS

Familiar: C^{++}, Assembly.
Experienced: MATLAB, SIMULINK Agilent ADS, Orcad Capture CIS, PSpice, HSPICE, Cadence, Assura, Calibre, Microwind, Lab View, Altium Designer, Verilog-HDL, VCS, Synplify, Proteus, ModelSim.
Others: Microsoft Office – Microsoft Visio.

PROFESSIONAL EXPERIENCES

- Iran Telecommunication Research Center (ITRC), Research assistant for 3 months. Working on 3G and 4G standard and their compatibility in the country- IRAN.
- Some companies related to the Ministries.

SELECTED COARSE AND PROJECTS

Courses

- Design and Analysis of CMOS integrated Circuit.
- Design and Analysis of CMOS RFIC.
- Analysis and synthesis of passive and active integrated filters
- Fundamentals of analog and digital Televisions.
- Introduction to VLSI System Design- with emphasis on Nanometer Technology.
- Software Defined Radio design (SDR).
- Digital Signal Processing (DSP)
- Photonics
- Solid state devices physics
- Theory and technology of fabrication of solid-state devices.
- Design of logic circuit by Verilog-HDL language.
- Pulse technique.
- Communication circuit design.
- RADAR principles

Projects

- Design, fabrication and measurement of a switched-capacitor readout circuit for a MEMS accelerometer in 180 nm CMOS technology.
- Design of a 16-bit SAR ADC in 600 nm CMOS technology. (*the current project*)
- Design and simulation of a Sigma-Delta ADC in 130 nm CMOS Technology.
- Design and simulation of a low power Pipelined ADC in 90 nm CMOS Technology.
- Design and simulation of a low noise continuous-time active filters.

- Design and simulation of wideband low noise amplifiers.
- Design and simulation of a PLL-based frequency synthesizer for WiMAX.
- Design and implementation of electronic circuit and amplifiers using Digital ICs and OP-AMPs
- Design and implementation of a digital multimeter using TTL ICs.
- Design, Simulation and implementation of Radio Frequency (RF) circuits.
- Implementation and synthesize of a FFT/IFFT processor for OFDM applications using Verilog-HDL and Synplify Pro.
- Design and simulation of a discrete time receiver for SDR applications in MALAB/SIMULINK.
- Design and Modeling of the ADCs in Lab-View.
- Miscellaneous projects related to the Ministries (*Executive, Supervisor and Consultant of some national projects*).
- etc.

TEACHING EXPERIENCES

- Teaching assistant, Amirkabir University. Of Tech, Measurement Lab.
- Teaching assistant, Amirkabir University. Of Tech., Communication Circuit.
- LAB assistant, Amirkabir University. Of Tech., Electronic-III.
- Lecturer at Qom University of Technology.

Electronic II, Digital Electronics and Data converters

- Private teacher of some courses such as:

Circuit I and II, Electronic I and II, Signals and Systems, Communications I and IC, RFIC Design and Electromagnetic.

- Lecturer in private universities in Abyek-Qazvin, Ghiasodin Jamshid Kashani University

Electronics I-II-III, communication Circuits Design, Communication Systems-II , CMOS Analog Integrated Circuit Design, Pulse Techniques, Electromagnetism, VLSI circuits, RADAR principles

- Lecturer in private universities in Abyek-Qazvin, A.B.A University

Digital Logic Circuit Design, Communication Systems-I.

- Lecturer in private universities in Garmsar-Semnan, Adiban University

Electric Circuit Theory and LAB, Digital Logic Circuit Design, Electronics-I

EXTRACARICULAR ACTIVITIES

Football, Iranian Music, Mountain Climbing and Reading Books (*Literature, Philosophy, Psychology, etc*).

REFERENCES

Professor **Mohammad Yavari,** Amirkabir University of Tech. (Tehran Polytechnic) myavari@aut.ac.ir
B.Sc. & Ph.D. Supervisor

Professor **Abdolreza Nabavi,** Tarbiat Modares University of Tehran-IRAN abdoln@modares.ac.ir
M.Sc. Supervisor

Professor **Omid Shoaei,** Tehran University, Tehran-IRAN oshoaei@ut.ac.ir