

MUHAMMED N. SENLIK

Bilkent University, 79/12
TR-06800
Bilkent, Ankara, TURKEY

niyazi@ee.bilkent.edu.tr
www.ee.bilkent.edu.tr/~niyazi
Phone: 90 312 290 2930 (work)
Fax: 90 312 266 4192

Education

- | | |
|-----------|---|
| 2005-2009 | Ph.D. in Electrical and Electronics Engineering, Bilkent University, Ankara, Turkey <ul style="list-style-type: none"> • Thesis Title: Radiation impedance of capacitive micromachined ultrasonic transducers Supervisor: Prof. Abdullah Atalar |
| 2002-2005 | M.S. in Electrical and Electronics Engineering, Bilkent University, Ankara, Turkey <ul style="list-style-type: none"> • Thesis Title: Nonuniform membranes in capacitive micromachined ultrasonic transducers Supervisor: Prof. Abdullah Atalar |
| 1998-2002 | B.S. in Electrical and Electronics Engineering, Bilkent University, Ankara, Turkey <ul style="list-style-type: none"> • B.S. Project: Linearization of power amplifiers using single-side band modulation Supervisor: Prof. Abdullah Atalar |

Experience

- | | |
|--------------|--|
| 2002–Present | Research Assistant, Bilkent Acoustic Transducers Group, Bilkent University, Ankara, Turkey |
| 2002–Present | Teaching Assistant, Bilkent University, Ankara, Turkey <ul style="list-style-type: none"> • EEE202 – Circuit Theory (Spring 03) • EEE211 – Analog Electronics (Fall 02/03/04/05/07 – Spring 05/06) • EEE314 – Digital Electronics (Spring 07) • EEE411/511 – Telecommunication Electronics (Fall 06) • EEE412/512 – Microwave Electronics (Spring 04/06/08/09) • EEE414/514 – Introduction To CMOS VLSI Design (Fall 08) |
| 2001–2002 | Internship, Bilkent University, Ankara, Turkey <ul style="list-style-type: none"> • RF transmitter/receiver design operating between 1.3GHz-2.6GHz • Control circuit design for power amplifiers |
| 2001 | Summer internship, ASELSAN A.S., Ankara, Turkey |
| 2000 | Summer internship, ASELSAN A.S., Ankara, Turkey |

Technical Skills

- Expert skills in finite element method modeling and simulation software. Specific expertise in: Ansys, Comsol, Matlab
- Expert skills in circuit design software. Specific expertise in: PSpice, Ansoft Designer, Agilent Design Studio
- General skills in PCB and IC layout software. Specific expertise in: Altium Designer, MEMS Pro, Cadence Virtuoso Layout Suite
- Lab programs: LabVIEW
- Programming languages: C, Java

Honors and Awards

2008	Best Poster Presentation, IEEE Bilkent Student Branch, Presentation Days (Institutional)
2005	2 nd Best Presentation, IEEE Bilkent Student Branch, Presentation Days (Institutional)
1998–Present	Full scholarship from Bilkent University
1998	OYS, Turkey Nationwide Exam: 196 th (Science) & 198 th (Math) / 1.5 million students

Professional Memberships

2002–Present	IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society Student Member
1998–Present	IEEE Student Member

Personal

Nationality	Turkish
Birth Date	01/01/1981
Gender	Male
Marital Status	Single
Languages	Turkish, English

Publications

Journal Papers

- [1] M. N. Senlik, S. Olcum, H. Köymen, and A. Atalar, "Radiation impedance of array of circular clamped membranes," *IEEE Trans. Ultrason., Ferroelect., Freq. Contr.*, under revision.
- [2] H. K. Oguz, S. Olcum, M. N. Senlik, V. Taş, A. Atalar, and H. Köymen, "Nonlinear modelling of an immersed transmitting capacitive micromachined ultrasonic transducer for harmonic balance analysis," *IEEE Trans. Ultrason., Ferroelect., Freq. Contr.*, under revision.
- [3] M. N. Senlik, S. Olcum, V. Tas, H. Köymen, and A. Atalar, "Analysis and design of capacitive micromachined ultrasonic transducers for airborne applications," *IEEE Trans. Ultrason., Ferroelect., Freq. Contr.*, under preparation.
- [4] H. Köymen, M. N. Senlik, A. Atalar, and S. Olcum, "Parametric linear modeling of circular cMUT membranes in vacuum," *IEEE Trans. Ultrason., Ferroelect., Freq. Contr.*, vol. 54, pp. 1229-1239, 2007.
- [5] S. Olcum, M. N. Senlik, and A. Atalar, "Optimization of the gain-bandwidth product of capacitive micromachined ultrasonic transducers," *IEEE Trans. Ultrason., Ferroelect., Freq. Contr.*, vol. 52, pp. 2211-2219, 2005.

Refereed Conference Proceedings

- [1] S. Olcum, H. K. Oguz, M. N. Senlik, H. Köymen, and A. Atalar, "A new underwater transducer technology: capacitive micromachined ultrasonic transducer," *5th Nanoscience and Nanotechnology Conference*, 2009.
- [2] M. N. Senlik, S. Olcum, H. Köymen, and A. Atalar, "Trade off between bandwidth and noise in airborne cMUTs," in *Proc. IEEE Ultrason. Symp.*, to be published.
- [3] S. Olcum, M. N. Senlik, K. Oğuz, A. Bozkurt, A. Atalar, and H. Köymen, "A wafer bonded capacitive micromachined underwater transducer," in *Proc. IEEE Ultrason. Symp.*, to be published.
- [4] H. K. Oguz, S. Olcum, M. N. Senlik, A. Atalar, H. Köymen, "Modeling of CMUT for harmonic balance analysis," in *Proc. IEEE Ultrason. Symp.*, to be published.

- [5] H. Köymen, M. N. Senlik, S. Olcum, and A. Atalar, "Radiation impedance of circular cMUT membranes," *19th International Congress On Acoustics*, 2007.
- [6] S. Olcum, A. Atalar, H. Köymen, K. Oguz, and M. N. Senlik, "Experimental characterization of capacitive micromachined ultrasonic transducers," in *Proc. IEEE Ultrason. Symp.*, 2007, 2131-2134.
- [7] M. N. Senlik, A. Atalar, and S. Olcum, "Interaction between a cMUT cell and a liquid medium around the parallel resonance frequency," in *Proc. IEEE Ultrason. Symp.*, 2007, 2151-2154.
- [8] S. Olcum, A. Atalar, H. Köymen, and M. N. Senlik, "Calculation of transformer ratio in Mason's equivalent circuit for cMUTs," in *Proc. IEEE Ultrason. Symp.*, 2006, 1947-1950.
- [9] M. N. Senlik, A. Atalar, H. Köymen, and S. Olcum, "Radiation impedance and equivalent circuit for immersed cMUT array element," in *Proc. IEEE Ultrason. Symp.*, 2006, 1951-1954.
- [10] S. Olcum, A. Atalar, H. Köymen, and M. N. Senlik, "Stagger tuned cMUT array for wideband airborne applications," in *Proc. IEEE Ultrason. Symp.*, 2006, 2377-2380.
- [11] M. N. Senlik, S. Olcum, and A. Atalar, "Improved performance of cMUT with nonuniform membranes," in *Proc. IEEE Ultrason. Symp.*, 2005, 597-600.
- [12] S. Olcum, M. N. Senlik, C. Bayram, and A. Atalar, "Design charts to maximize the gain-bandwidth product of capacitive micromachined ultrasonic transducers," in *Proc. IEEE Ultrason. Symp.*, 2005, 1941-1944.
- [13] C. Bayram, S. Olcum, M. N. Senlik, and A. Atalar, "Bandwidth improvement in a cMUT array with mixed sized elements," in *Proc. IEEE Ultrason. Symp.*, 2005, 1956-1959.

Talks

- [1] M. N. Senlik, S. Olcum, V. Tas, H. Köymen, and A. Atalar, "The optimal arrangement of the cMUT cells in an array," *8th International Workshop on MUT*, 2009.
- [2] H. K. Oguz, S. Olcum, M. N. Senlik, A. Atalar, and H. Köymen, "Modeling of cMUT for harmonic balance analysis," *8th International Workshop on MUT*, 2009.
- [3] M. N. Senlik, S. Olcum, and A. Atalar, "Radiation impedance of an immersed cMUT array element," *7th International Workshop on MUT*, 2008.
- [4] S. Olcum, A. Atalar, H. Köymen, and M. N. Senlik, "Fabrication and characterization of capacitive micromachined ultrasonic transducers," *6th International Workshop on MUT*, 2007.
- [5] M. N. Senlik, A. Atalar, H. Köymen, and S. Olcum, "A precise lumped element model for a circular cMUT membrane," *6th International Workshop on MUT*, 2007.
- [6] S. Olcum, A. Atalar, H. Köymen, and M. N. Senlik, "Optimization of the gain-bandwidth product of cMUTs," *5th International Workshop on MUT*, 2006.
- [7] M. N. Senlik, A. Atalar, H. Köymen, and S. Olcum, "An equivalent circuit for capacitive micromachined ultrasonic transducers," *5th International Workshop on MUT*, 2006.

References

Prof. Abdullah Atalar
 Department of Electrical and Electronics Engineering
 Bilkent University
 TR-06800
 Bilkent, Ankara, Turkey
 90 312 266 4338
www.provost.bilkent.edu.tr/atalar/AA/
atalar@ee.bilkent.edu.tr