RASIM O. GULDIKEN, Ph.D.
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PROFESSIONAL PREPARATION

Georgia Institute of Technology, Atlanta, GA	Ph.D. in Mechanical Engineering	2008

- Marwan Belaed, Ph.D. in Mechanical Engineering 2020
  Dissertation Title: Simulation and Verification of Phase Change Materials for Thermal Energy Storage, Co-advised with M. Rahman
  Current Position: Solar Engineering Consultant as DBA, Tampa, FL
- Matt Trapuzzano, Ph.D. in Mechanical Engineering 2019
  Dissertation Title: Controlled Wetting Using Ultrasonic Vibration, Co-advised with N. Crane
  Current Position: Mechanical Engineer at Blue Origin, Cape Canaveral, FL
- Mohsen Ziaee, Ph.D. in Mechanical Engineering 2018
  Dissertation Title: Materials and Methods to Fabricate Porous Structures Using Additive Manufacturing Techniques, Co-advised with N. Crane
  Current Position: Additive Manufacturing Engineer at 3DEO, Gardena, CA
- Shantanu Shevade, Ph.D. in Mechanical Engineering 2018
  Dissertation Title: Simulation of Turbulent Air Jet Impingement for Commercial Cooking Applications, Co-advised with M. Rahman
  Current Position: Director of Engineering, Welbilt, Inc., Newport Richey, FL
- Scott Padilla, Ph.D. in Mechanical Engineering 2017
  Dissertation Title: Novel Transducer Calibration and Simulation Verification of Polydimethylsiloxane (PDMS) Channels on Acoustic Microfluidic Device
  Current Position: Project Manager at Neuralink, Austin, TX
- Rafael Rodriguez, Ph.D. in Mechanical Engineering 2017
  Dissertation Title: Experimental Evaluation of Cooling Effectiveness and Water Conservation in a Poultry House Using Flow Blurring Atomizers
  Current Position: Associate Professor at Embry–Riddle Aeronautical University
- Adrian Avila, Ph.D. in Electrical Engineering 2017
  Dissertation Title: Development of MEMS Acoustic Emission Sensors, Co-advised with J. Wang
  Current Position: R&D Engineer at Intel, Chandler, AZ
- Tao Wang, Ph.D. in Mechanical Engineering 2016
  Dissertation Title: Optimization and Characterization of Integrated Microfluidic Surface Acoustic Wave Sensors and Transducers
  Current Position: Microfluidic Engineer at Technicolor SA in Camarillo, CA
- Ahmad Manasrah, Ph.D. in Mechanical Engineering 2016
  Dissertation Title: Application and Analysis of Asymmetrical Hot and Cold Stimuli, Co-advised with K. Reed
  Current Position: Assistant Professor at Al-Zaytoonah University, Jordan
- Eric Tridas, Ph.D. in Mechanical Engineering 2015
  Dissertation Title: Use of FDM Components for Ion Beam and Vacuum Applications, Co-advised with R. Schlaf
  Current Position: Staff R&D Engineer at Pivot, Inc., San Francisco, CA
- Onursal Onen, Ph.D. in Mechanical Engineering 2013
  Dissertation Title: Analytical Modeling, Perturbation Analysis and Experimental Characterization of Guided Surface Acoustic Wave Sensors
  Current Position: Owner and CEO at Metapax Akustik, Turkey

Current Position: Engineer at HARMAN International, Detroit, MI

- Eric Tridas, M.S. in Mechanical Engineering 2012
  Thesis Title: Experimental and Numerical Investigation of an Electrospray RF Ion Funnel, Co-advised with R. Schlaf
  Current Position: Staff R&D Engineer at Pivot, Inc., San Francisco, CA
- Ahmad Manasrah, M.S. in Mechanical Engineering 2012
  Thesis Title:

- Stephen MacNeil, Simulation of a Space Electrical Power System 2012
- Dean Velasquez, Phased Array Surface Acoustic Wave Transducers for Bolt Tension Measurement 2012
- Ahmad Hares, Spring Rate and Preload Investigation of Various Valve Sizes using Fluid Transportation Principles 2011
- Andrew Abney, Drag Reduction on an Arbitrary Shaped Flying Disc and Simulation

G14 Acoustic Emission on a Chip (AECHIP), NSF (through WavesinSolids LLC), $130K, PI, 01/2013 – 12/2013

PUBLICATIONS (Jan. 2025, Google Scholar Citations: 2500+, h-index: 27, i-10 index: 44)

(i) Patents

** Students supervised in my research group are underlined*

P1 J. Cotter and R. Guldiken, “Cost-

J6 R. Clark, A. Kaw, and R. Guldiken, “Metacognition instruction and repeated reflection in a fluid mechanics course: Reflective themes and student outcomes,” *International Journal of Mechanical Engineering Education*, vol 51 (4), pp. 243-269, 2023

J7 S. Alhumaid, D. Hess, and R. Guldiken, “A Noncontact Magneto-Piezo Harvester-Based Vehicle Regenerative Suspension System: An Experimental Study,” *Energies*, vol 15 (12), 4476, 2022

J8 J. Cotter, J. Wang, and R. Guldiken, “Intrinsically Patterned Electrical Systems: Physical Requirements and Experimental Demonstration,” *Microsystem Technologies*, 27(1), pp. 307-314, 2021

J9 S. Alhumaid, D. Hess and R. Guldiken, “Energy Regeneration from Vehicle Unidirectional Suspension System by a Non-contact Piezo-magneto Harvester,” *Engineering Research Express*, 3 (1), 015033, 2021

J10 J. Cotter

J52 O. Guldiken, K. Bakhtari, A. Busnaina, and J. Park, “Metrology and Removal of Nanoparticles from 500 microns Deep Trenches,” *Journal of Solid State Phenomena,* vol. 103-104, pp. 137-140, 2005

(iii) Invited Book Chapters (2)

* *Students supervised in my research group are underlined*

B1. N.B. Crane, J. Carballo, Q. Ni, O. Onen and R. Guldiken (2013). Assembly, Fluidic-Assisted. In. D. Li (Ed.) *Encyclopedia of Microfluidics and Nanofluidics, 2nd Edition*. Germany: Springer

B2. R. Guldiken and O. Onen (2012). MEMS Ultrasonic Transducers for Biomedical Applications. In S. Bhansali and A. Vasudev (Eds.) *MEMS for Biomedical Applications* (pp.120-149). Cambridge, UK: Woodhead Publishing

(iv) Conference Publications/Presentations

* *Students supervised in my research group are underlined*

C1 M. Demirci and R. Guldiken, “Thermography With an Ultrasonic Transducer and Buffer Rod” ASME IMECE 2023-119965, New Orleans, Louisiana

Encapsulated PCM in a Cylindrical Storage Tank with Axial Flow" ASME IMECE 2016-65730, Houston, TX

C27 M. Trapuzzano, K. Pierre, E. Tufekcioglu, R. Guldiken, A. Tejada-Martinez and N.B. Crane, "Comparison of Simulated and Measured Fluid Surface Oscillation Frequencies in a Cylindrical Tube," American Physical Society, Division of Fluid Dynamics, 2016, Portland, OR

C28 J. Cooper, R. Guldiken, and N. Gallant, "Spatial Manipulation And Patterning of Micro-Particles and Biological Cells using Acoustic Forces" BMES 2015, Tampa, FL

C29 F. Khalili, F.D. Paoli, and R. Guldiken, "Impact Resistance of Liquid Body Armor Utilizing Shear Thickening Fluids: A Computational Study" ASME IMECE 2015-53376, Houston, TX

C30 A. Gheethan, R. Guldiken, and G. Mumcu, "Microfluidic Enabled Beam Scanning Focal Plane Arrays," IEEE International Symposium on Antennas and Propagation, Paper#3804, 2013, Orlando, FL

C31 A. Dey, R. Guldiken and G. Mumcu, "Wideband Frequency Tunable Liquid Metal Monopole Antenna," IEEE International Symposium on Antennas and Propagation, Paper#3944, 2013, Orlando, FL (Student Paper Finalist)

C32 O. Onen, A. Sisman, P. Kruk and R. Guldiken, "A Urinary Biosensor for Early Stage Ovarian Cancer Detection: Experimental Characterization," ASME IMECE 2012-87850, Houston, TX

C33 J. Martinez, O. Onen, A. Sisman, and R. Guldiken, "An Ultrasonic Method to Estimate Tension in Bolted Joints," ASME IMECE 2012-87864, Houston TX

C34 G. Manohar, O. Onen, and R. Guldiken, "Performance and Sensitivity Comparison of Shear

C44 M.C. Jo and R. Guldiken, “An Acoustic Microfluidic Platform for Size and Density-Based Cell Separation,” IEEE International Ultrasonics Symposium, 2011, Orlando, FL

C45 R. Guldiken, O. Onen

C72 A. A. Busnaina, O. Guldiken, and J. Park, “Metrology and Removal of Nanoparticles from

KWF Kankerbestrijding (Dutch Cancer Society) Proposal Reviewer 2022
State of North Carolina Biotechnology Center Proposal Reviewer 2012
National Institutes of Health Proposal Reviewer 2009

Invited Textbook Reviewer

- Fluid Mechanics, Cengel and Cimbala, McGraw Hill 2022
- Fundamentals of Fluid Mechanics, Munson, Young, Okiishi Wiley 2022
- Fluid Mechanics, Hibbeler Pearson 2019

Journal Paper Reviewer (partial list)

- Advances in Engineering Education
- Analytical Chemistry
- Applied Sciences
- Applied Surface Science
- ASCE Journal of Structural Engineering
- ASCE Journal of Bridge Engineering
- ASME Journal of Energy Resources Technology
- Biomicrofluidics
- Biosensors
- Energies
- IEEE Journal of MEMS
- IEEE Sensors
-

PROFESSIONAL AFFILIATIONS (Present)

American Society of Mechanical Engineers (ASME), Fellow
National Academy of Inventors (NAI), Senior Member
American Society of Engineering Education (ASEE), Member

- Abdulrahman Alsolami, Ph.D. in Electrical Engineering 2021
- Sulaiman Almutairi, Ph.D. in Electrical Engineering 2021
- Mohammed Alqahtani, Ph.D. in Electrical Engineering 2021
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