BIOGRAPHICAL SKETCH

Nima Ghalichechian (US Citizen)
Associate Professor
School of Electrical and Computer Engineering
Georgia Institute of Technology
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A. EDUCATION AND TRAINING

INSTITUTION	LOCATION	MAJOR	DEGREE	YEAR
University of Maryland	College Park, MD	Electrical Engineering	Ph.D.	2007
University of Maryland	College Park, MD	Electrical Engineering	M.Sc.	2005
Amirkabir University of Tech.	Tehran, Iran	Electrical Engineering	B.Sc.	2001

B. RESEARCH AND PROPOFESSIONAL EXPERIENCE

From - To	Position Title, Organization and Location
2024- present	Associate Professor, Georgia Institute of Technology, Atlanta, GA
2021- 2024	Assistant Professor, Georgia Institute of Technology, Atlanta, GA
2017-2021	Assistant Professor, The Ohio State University, Columbus, OH
2016-2017	Research Assistant Professor, The Ohio State University, Columbus, OH
2012-2015	Research Scientist, The Ohio State University, Columbus, OH
2007-2012	Senior Principal Engineer, Formfactor Inc, Livermore, CA

C. HONORS and AWARDS

- Roger Webb Outstanding Junior Faculty Award, School of ECE, Georgia Institute of Technology (2024).
- Top Reviewer for IEEE Transactions on Antennas and Propagation (2021-2022).
- NSF CAREER Award (2019-2024).
- AFRL Summer Faculty Fellowship Award (2019).
- ECE Teaching Excellence Award, The Ohio State University (2019).
- Lumley Research Award, The Ohio State University, College of Engineering (2018).
- George Harhalakis Outstanding Systems Engineering Graduate Student Award, Institute for Systems Research, University of Maryland (2007).

D. SERVICES

- Associate Editor, IEEE Transaction on Antennas and Propagation (2022- present).
- Associate Director, Georgia Electronic Design Center (2022-present).
- Director, mmWave Antennas and Arrays Laboratory (2021-present).
- Associate Editor, IEEE Antennas and Wireless Propagation Letters (2019-2022).
- Technical Program Committee Member, Hilton Head: A Solid-State Sensors, Actuators and Microsystems Workshop (2020 and 2022).
- Technical Program Committee Member, 2010 IEEE Sensors Conference.
- Session co-chair, European Conference on Antennas and Propagation (2017, 2018, 2020, 2023, 2024).

- Proposal reviewers for NSF panel on Electronics, Photonics, and Magnetic Devices, NSF panel on Communications, Circuits, and Sensing Systems, French National Research Agency, Department of Defense SMART Fellowship, NASA Fellowship, Army Research Lab, and Dutch Research Council.

E. JOURNAL PUBLICATIONS

1. M. Lust, D. West, V. Smith, T. Williamson, and N. Ghalichechian "Vanadium Dioxide-Based Reconfigurable Ka-Band Dual-Sense Linear-to-Circular Polarizer", *IEEE Transactions on Antennas and Propagation*, 2023, doi:/10.1109/TAP.2024.3356615

2. M. Lust, I. Vitebskiy, I. Anisimov, and N. Ghalichechian, "Thermo-optic VO2-based silicon waveguide mid-infrared router with asymmetric activation thresholds and large bi-stability," *Optics Express*, vol. 31, no. 14, pp.23260-23273, 2023, doi: /10.1364/OE.493895

3. K. Q. Henderson, W. Disharoon and N. Ghalichechian, "Towards High Power Beam Steerable Reflectarrays Using Tunable Height Dielectric," *IEEE Transactions on Antennas and Propagation*, vol. 71, no. 3, pp. 2487-2496, March 2023, doi: 10.1109/TAP.2023.3238671

4. S. Chen, M. Lust, A. Roo, and N. Ghalichechian "Reliability of VO2 mmWave Switches Under 100 million Thermal Cycles", *IEEE Transactions on Device and Materials Reliability, 2023* doi: 10.1109/TDMR.2023.3249771

5. S. Chen, M. Lust, and N. Ghalichechian, "Antenna-Coupled Microbolometer Based on VO_2's Non-linear Properties Across the Metal-Insulator Transition Region", *Applied Physics Letters*, vol. 121, no. 20, pp. 201901, 2022, doi: 10.1063/5.01237792022

6. Shuai Wu, Jack Eichenberger, Jize Dai, Yilong Chang, Nima Ghalichechian, Ruike Renee Zhao, "Magnetically Reconfigurable Metamaterial as Conformal Electromagnetic Filters", *Advanced Intelligent Systems,* Vol. 4, Issue 9, pp. 2200106, 2022*, doi: 10.1002/aisy.202200106* (Editor's Choice)

7. B. Ghassemiparvin and N. Ghalichechian, "Paraffin-Based RF Microsystems for Millimeter-Wave Reconfigurable Antenna," in *IEEE Transactions on Antennas and Propagation*, vol. 70, no. 1, pp. 744-749, 2022, doi: 10.1109/TAP.2021.3102112

8. Q. Henderson and N. Ghalichechian, "Triangular and Rectangular Lattices for Cosecant-squared Shaped Beam Reflectarrays", *IEEE Antennas and Wireless Propagation Letters,* vol. 20, no. 10, pp. 2058-2062, Oct. 2021,doi: 10.1109/LAWP.2021.3103152

9. J. Eichenberger and N. Ghalichechian, "Mechanically Reconfigurable Slot Array Using Accordion-like Micro-actuators", *IEEE Antennas and Wireless Propagation Letters,* vol. 20, no. 10, pp. 2048-2052, Oct. 2021, doi: 10.1109/LAWP.2021.3102851

10. J. Li, C. Matos and N. Ghalichechian, "A Low-cost Vertically-Integrated Antenna Array at 60 GHz with 85% Efficiency," *IEEE Antennas and Wireless Propagation Letters*, vol. 20, no. 4, pp. 513-517, April 2021, doi: 10.1109/LAWP.2021.3055726.

11. J. Li, C. Matos, S. Chen, and N. Ghalichechian, "Fundamental Improvement to the Efficiency of On-chip mmWave Phased Arrays using MEMS Suspension", *IEEE Antennas and Wireless Propagation Letters*, vol. 20, no. 4, pp. 473-477, April 2021, doi: 10.1109/LAWP.2021.3054555.

12. C. Matos, J. Humanchuk and N. Ghalichechian "Robotically-controlled Antenna Measurement System for Millimeter-wave Applications", *Microwave and Optical Technology Letters*, pp. 1520-1525, vol. 63, no. 5, May 2021, https://doi.org/10.1002/mop.32773

13. Chen, M. Lust, and N. Ghalichechian, "Multiphysics simulation of Hypersensitive Microbolometer Sensor using Vanadium Dioxide and Air Suspension for Millimeter Wave Imaging", *Microsystem Technologies*, no. 27, pp. 2815–2822, 2021, https://doi.org/10.1007/s00542-020-05031-0

14. B. Ghassemiparvin, and N. Ghalichechian, "Paraffin-Based Reconfigurable Antenna Operating at 100 GHz", *IEEE Journal of Microelectromechanical Systems*, vol. 29, no. 5, pp. 621-628, Oct. 2020 10.1109/JMEMS.2020.3013159.

15. M. Lust, S. Chen, C. Wilson, J Argo, V. Doan-Nguyen, and N. Ghalichechian, "High-Contrast, Highly Textured VO2 Thin Films Integrated on Silicon Substrates Using Annealed Al2O3 Buffer Layers", *Journal of Applied Physics*, vol.127, no. 20, pp. 205303, 2020 https://doi.org/10.1063/1.5144816.

16. K. Q. Henderson and N. Ghalichechian, "Circular-Polarized Metal-Only Reflectarray with Multi-Slot Elements," *IEEE Transactions on Antennas and Propagation*, 68(9), pp. 6695-6703, 2020, doi: 10.1109/TAP.2020.2993229

17. B. Ghassemiparvin, and N. Ghalichechian, "Reconfigurable Antennas: Quantifying Payoffs for Pattern, Frequency, and Polarization Reconfiguration", *IET Microwaves, Antennas & Propagation*, vol. 14, no. 3, pp. 149-153, 2020. https://doi.org/10.1049/iet-map.2019.0473

18. K.H. Jeong and N. Ghalichechian, "3D-Printed 4-Zone Ka-band Fresnel Lens: Design, Fabrication, and Measurement", *IET Microwaves, Antennas & Propagation,* Volume 14, Issue 1, pp. 28 - 35, January 2020 https://doi.org/10.1049/iet-map.2019.0117

19. B. Ghassemiparvin, and N. Ghalichechian, "Design, Fabrication, and Testing of a Helical Antenna using 3D Printing Technology", *Microwave and Optical Technology Letters*, 62(4), pp. 1577-1580, 2020. https://doi.org/10.1002/mop.32184

20. K. Zhao, J. A. Ramsey and N. Ghalichechian, "Fully 3-D-Printed Frequency-Scanning Slotted Waveguide Array with Wideband Power-Divider," *IEEE Antennas and Wireless Propagation Letters*, vol. 18, no. 12, pp. 2756-2760, Dec. 2019, https://doi.org/10.1109/LAWP.2019.2951324

21. S. Shah, B. Ghassemiparvin, and N. Ghalichechian, "Robust Spin Coating Deposition Process for Paraffin Phase-Change Films", *Microelectronic Engineering,* Volume 217, 2019, https://doi.org/10.1016/j.mee.2019.111121

22. J. Eichenberger, E. Yetisir and N. Ghalichechian, "High-Gain Antipodal Vivaldi Antenna with Pseudoelement and Notched Tapered Slot Operating at (2.5 to 57) GHz," *IEEE Transactions on Antennas and Propagation*, vol. 67, no. 7, pp. 4357-4366, July 2019, 10.1109/TAP.2019.2906008

23. E. Yetisir, J. Li and N. Ghalichechian, "UWB dual-polarised dipole array with dielectric and FSS superstrate and 65° scanning," *IET Microwaves, Antennas & Propagation*, vol. 13, no. 3, pp. 313-321, 2019, https://doi.org/10.1049/iet-map.2018.5626

24. B. Ghassemiparvin and N. Ghalichechian, "Complex Permittivity Measurement of Paraffin Phase-Change Material at 26 GHz-1.1 THz Using Time Domain Spectroscopy", *Journal of Infrared, Millimeter, and Terahertz Waves*, 2018, https://doi.org/10.1007/s10762-018-0556-5

25. E. Yetisir, N. Ghalichechian and J. L. Volakis, "Ultrawideband Array With 70° Scanning Using FSS Superstrate," in *IEEE Transactions on Antennas and Propagation*, vol. 64, no. 10, pp. 4256-4265, Oct. 2016. 10.1109/TAP.2016.2594817

26. V. Sanphuang; N. Ghalichechian; N. K. Nahar; J. L. Volakis, "Reconfigurable THz Filters Using Phase-Change Material and Integrated Heater," in *IEEE Transactions on Terahertz Science and Technology*, vol. 6, no.4, pp.583-591, 2016 10.1109/TTHZ.2016.2560175

27. V. Sanphuang, N. Ghalichechian, N. Nahar, J. Volakis, "Equivalent Circuit for VO2 Phase Change Material Film in Reconfigurable Frequency Selective Surfaces*," Applied Physics Letters,* vol. 107, p.253106, 2015, http://dx.doi.org/10.1063/1.4938468

28. N. Ghalichechian and K. Sertel, "Permittivity and Loss Characterization of SU-8 Films for mmW and Terahertz Applications," *IEEE Antennas and Propagation Letters*, vol.14, pp.723, 726, 2015, http://dx.doi.org/10.1109/LAWP.2014.2380813

29. M.I. Beyaz, M. McCarthy, N. Ghalichechian, and R. Ghodssi, "Closed-loop control of a long-range micropositioner using integrated photodiode sensors," *Sensors and Actuators A,* vol. 151, pp. 187-194, February 2009, http://dx.doi.org/10.1016/j.sna.2009.02.020

30. N. Ghalichechian, A. Modafe, M.I. Beyaz, and R. Ghodssi, "Design, Fabrication, and Characterization of a Rotary Micromotor Supported on Microball Bearings," *IEEE Journal of Microelectromechanical Systems*, vol. 17, no 3, pp. 632- 642, June 2008, http://dx.doi.org/10.1109/jmems.2008.916346

31. N. Ghalichechian, A. Modafe, J. H. Lang, and R. Ghodssi, "Dynamic Characterization of a Linear Electrostatic Micromotor Supported on Microball Bearings," *Sensors and Actuators A*, vol. 136 (2), pp. 416-503, May 2007, http://dx.doi.org/10.1016/j.sna.2006.08.019

32. Modafe, N. Ghalichechian, A. Frey, J. H. Lang, and R. Ghodssi, "Microball-Bearing-Supported Electrostatic Micromachines with Polymer Dielectric Films for Electromechanical Power Conversion," *Journal of Micromechanics and Microengineering*, vol. 16, pp. S182-S190, September 2006, http://dx.doi.org/10.1088/0960-1317/16/9/s03

33. Modafe, N. Ghalichechian, M. Powers, M. Khbeis, and R. Ghodssi, "Embedded Benzocyclobutene in Silicon (EBiS): An Integrated Fabrication Process for Electrical and Thermal Isolation in MEMS," *Microelectronic Engineering,* vol. 82, pp. 154, August 2005, http://dx.doi.org/10.1016/j.mee.2005.07.005

34. N. Ghalichechian, A. Modafe, R. Ghodssi, P. Lazzeri, R. Micheli, and M. Anderle, "Integration of Benzocyclobutene Polymers and Silicon Micromachined Structures Using Anisotropic Wet Etching," *Journal of Vacuum Science and Technology (JVST) B,* vol. 22, pp. 2439-2447, September 2004, http://dx.doi.org/10.1116/1.1787519

35. Modafe, N. Ghalichechian, B. Kleber and R. Ghodssi, "Electrical Characterization of Benzocyclobutene Polymers for Electric Micromachines," *IEEE Transactions on Device and Materials Reliability*, vol.4, pp. 495-508, September 2004, http://dx.doi.org/10.1109/tdmr.2004.830289

F. TEACHING

- ECE6360- Microwave Design (Spring 2023, 2024)
- ECE4370- Antenna Engineering (Fall 2021, 2022,2023, 2024)
- ECE4370- Antenna Engineering Lab (Fall 2021, 2022,2023, 2024)
- ECE3020- Introduction to Electronics (OSU: Fall 2017-2018-2019-2020)
- ECE6030- MEMS Design (OSU: Spring 2018-2019-2020-2021)