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HESHAM AHMED AMIN BESHARY PH.D.

RESEARCH INTERESTS RF/mm-Wave Integrated Circuits, Silicon Photonics, Inverse Design, Phased Arrays, Transceivers, Radar Systems, Antennas

EDUCATION

- 2020 - 2025 **PhD: University of California at Berkeley, California, USA**
Department of Electrical Engineering and Computer Sciences
- **Major:** Integrated Circuits
 - **Advisor:** Prof. Ali M. Niknejad
 - **GPA:** 4.0/4.0
 - **Research area:** Squint-free sub-THz massive MIMO phased arrays
- 2017 - 2020 **MSc: Cairo University, Cairo, Egypt**
Department of Electronics and Electrical Communications
- **GPA:** 4.0/4.0
 - **Research area:** Phase Shifters and Power Splitters Design and Implementation Techniques for mm-Wave Beamforming Applications
- 2012 - 2017 **BSc: Cairo University, Cairo, Egypt**
Department of Electronics and Electrical Communications
- **Rank:** 1st/240, **Cumulative rate:** 96.04%, **with equivalent GPA:** 4.0/4.0
 - **Research area:** Design and implementation of a fully integrated 28 GHz 4-channel phased-array transceiver for 5G applications in 65-nm CMOS technology, sponsored by Analog Devices Inc, Egypt

HONORS & AWARDS

- Apple VLSI PhD Fellowship** for Academic Year 2023-2024
Analog Devices (ADI) Outstanding Student Designer Award for year 2023
UC Berkeley EECS Departmental Fellowship for Fall 2020

PATENTS

- 2019 M. Abd-elsalam, Hesham Beshary, M. A. Abdalla, "Polyphase filter (PPF) including RC-LR sections." US Patent Number 11,101,782 B1

PUBLICATIONS

- 2025 H. Beshary, Y. Chen, E. Chou and A. M. Niknejad, "A 1.54 pJ/b 80 Gb/s D-Band 2-D Scalable Transceiver Array With On-Chip Antennas in 28-nm Bulk CMOS," in IEEE Solid-State Circuits Letters, vol. 8, pp. 61-64, 2025
- 2025 Y. Chen, H. Beshary, E. Chou, M. Wei, N. Baniasadi and A. Niknejad, "A 140GHz FMCW Radar with 22dB Wideband RF-Domain Multipath Self-Interference Cancellation in 28nm CMOS," 2025 IEEE Radio Frequency Integrated Circuits Symposium (RFIC), San Francisco, CA, USA, 2025

2024 E. Chou, **H. Beshary**, M. Wei, R. Hijab, F. Sheikh, S. Callender, A. M. Niknejad, "Comparative Performance of 100–200 GHz Wideband Transceivers: CMOS vs Compound Semiconductors," 2023 IEEE BiCMOS and Compound Semiconductor Integrated Circuits and Technology Symposium (BCICTS), Monterey, CA, USA, 2023

2023 **Hesham Beshary**, Ali Niknejad, "Spatial IDFT for Squint-Free Massive Arrays," arXiv preprint arXiv:2305.19559

2022 E. Chou, N. Baniasadi, **H. Beshary**, M. Wei, E. Naviasky, L. Iotti, A. Niknejad, "A Low-Power and Energy-Efficient D-Band CMOS Four-Channel Receiver with Integrated LO Generation for Digital Beamforming Arrays," ESSCIRC 2022- IEEE 48th European Solid State Circuits Conference (ESSCIRC), 2022

2022 M. Wei, N. Baniasad, E. Chou, **H. Beshary**, S. Krishnamurthy, E. Alon, A. Niknejad, "A D-Band Packaged CMOS Integrated Transmitter for MU-MIMO Applications," 2022 IEEE Asian Solid-State Circuits Conference (A-SSCC), Taipei, Taiwan, 2022

2020 **H. Beshary** et al., "A Compact Low-Loss On-chip N-Way Wilkinson Power Divider for mm-Wave 5G Applications," 2020 IEEE 63rd International Midwest Symposium on Circuits and Systems (MWSCAS), Springfield, MA, USA, 2020

2019 **H. A. Ameen** et al., "A 28 GHz four-channel phased-array transceiver in 65-nm CMOS technology for 5G applications," AEU - International Journal of Electronics and Communications 98, 2019

2017 **H. A. Ameen** et al., "A 28 GHz Four-Channel Phased-Array transceiver in 65-nm CMOS technology for 5G applications," 2017 29th International Conference on Microelectronics (ICM) (IEEE-ICM2017), Crowne Plaza Hotel, Beirut, Lebanon, 2017

WORK EXPERIENCE

2025.08 - Present **Postdoctoral Scholar at Department of EECS, UC Berkeley**
Building mm-wave and sub-THz integrated circuits and systems for high-speed and energy-efficient wireline and wireless communications

2020.08 - 2025.08 **Graduate Student Researcher at Berkeley Wireless Research Center, UC Berkeley**
Focusing on the design and implementation of mm-wave and sub-THz circuits and systems

2024.08 - 2025.05 **Graduate Student Instructor at Department of EECS, UC Berkeley**
Teaching in discussions for:

- EE 242B (Advanced ICs for Comm.) [Fall 2024]
- EE 142/242A (ICs for Comm.) [Spring 2025]

Summer 2023 **RFIC Design Intern at Apple, Cupertino, CA**

2017.09 - 2020.08 **RF/mm-Wave Design Engineer at Analog Devices, Egypt**
Design and implementation of variety of RF/mm-wave circuits for 5G beamformers and up/down-converters, including:

Phase shifters	RF switches
Wilkinsons	Power detectors
Mixers	Amplifiers

Involved in many tapeouts, including the following products:

ADMV4728	ADMV4828
ADMV4928	ADMV1139

