

ROSALIND AGASTI

rosalind.agasti@ou.edu

EDUCATION

University of Massachusetts, Boston

B.S. in Electrical Engineering

Overall GPA: 3.97

Summa Cum Laude

Sept 2017 - May 2021

University of Oklahoma, Norman

M.S. in Electrical Engineering

Overall GPA: 4.0

Sept 2021 - May 2023

University of Oklahoma, Norman

Ph.D. in Electrical Engineering

May 2023 - Present

EXPERIENCE

Advanced Radar Research Center,

University of Oklahoma

Graduate Research Assistant

Sept 2021 - Present

Norman, OK

- “Investigation of the scalability of a high-power tunable filtenna element for X-band Applications”
Developing a frequency-reconfigurable filtering antenna for next generation miniaturized and integrated Radio-Frequency (RF) Modules. The design focus is to ensure a high-power handling capability, while maintaining wide tunability and efficient radiation performance.

University of Massachusetts, Boston

Teaching Assistant, Fields and Waves - I

Dec 2020 - May 2021

Boston, MA

- Helped 31 undergraduate junior and senior students to understand course concepts pertaining to the basics of static and time-varying electromagnetic fields.
- Additionally, prepared students’ work assignment folders. Scheduled an extra 3 hours of weekly tutoring sessions.

PROJECTS

Software-Defined Radio (SDR) Beyond 5G Project Challenge

Air Force Research Laboratory (AFRL) and Wright Brothers Institute (WBI)

Sept 2020-May 2021

Boston, MA

- “Secure RF link Key Distribution using Optical Wireless Communication and Software-Defined Radio”
- Demonstration of a novel security protocol using unique physical layer characteristics of RF and optical channels for more secure wireless key distribution.
- Computed the encrypted RF security Key using channel estimation and signature link keying (LSK).
- The project was awarded first place in the competition.

Senior Design - Capstone Project

University of Massachusetts, Boston

Sept 2020-May 2021

Boston, MA

- “Three-Gas Analyzer and Sensor for medical applications”
- Designed a fully functional product capable of measuring three different gases NO₂, O₂ and NO.
- Device assembly cost was 70% less as compared to commercially available gas analyzers.
- Project success led the client company to order 5 more device prototypes for commercial purchase.

PUBLICATIONS

- [1] R. Agasti, C. G. Blosser, J. E. Ruyle and H. H. Sigmarsson, “Tunable SIW-Based Evanescent-Mode Cavity-Backed Slot Antenna With Contactless Tuning,” in *IEEE Access*, vol. 11, pp. 42670-42678, 2023, doi: 10.1109/ACCESS.2023.3265571.
- [2] R. Agasti, A. Bauer, H. H. Sigmarsson, and J.E. Ruyle, “Radio-Frequency Characterization of Thermally and Electrically Conductive Adhesives for Antenna Applications” in *Proceedings of Antennas and Propagation Society International Symposium and URSI National Radio Science Meeting*, 2022
- [3] R. Agasti, H. H. Sigmarsson, and J.E. Ruyle, “Investigating the scalability of a Frequency-Agile Filtenna for X-band Applications” in *Proceedings of 2022 Allerton Antenna Applications Symposium*, 2022
- [4] R. Agasti, H. H. Sigmarsson, and J.E. Ruyle, “A Method to Estimate Varactor Quality Factor at Microwave Frequencies” in *Proceedings of Antennas and Propagation Society International Symposium and URSI National Radio Science Meeting*, 2023 (accepted)
- [5] A. L. Bauer, R. Agasti, C. G. Blosser, J. Wiegand, C. Weale, R.G. Mattingly, S. Flandermeyer, J. Metcalf, H. H. Sigmarsson and J. E. Ruyle, “Investigation of System Noise Improvements with Tunable Filtenna” in *Proceedings of 2022 Allerton Antenna Applications Symposium*, 2022

SKILLS

- Experienced with RF simulation software: Ansys HFSS, AWR Microwave Office, ADS
- Experience in SDR software: GNU-Radio, USRP (Universal Software Radio Peripheral)
- Proficient in MATLAB
- Trained in use of RF and microwave lab equipment(eg. Network Analyzer, Spectrum Analyzer), anechoic chamber measurements
- Trained in RF fabrication processes: Milling, Lithography, Soldering, Lamination, 3D printing,

AWARDS AND PROFESSIONAL ACTIVITIES

- Dean’s List, College of Science and Mathematics, 2017-2022
- Graduated with Academic Distinction in Electrical Engineering, UMass Boston-2021
- Member of IEEE-Eta Kappa Nu (IEEE-HKN)
- Student Member of IEEE, IEEE Antennas and Propagation Society, IEEE Microwave Theory and Technology Society (MTT-S)
- Treasurer, IEEE MTT-S Student Branch Chapter at the University of Oklahoma, ARRC
- Session Co-Chair, “Antennas and Mutual Coupling”, IEEE Antennas and Propagation Society International Symposium and URSI National Radio Science Meeting, 2022
- Session Co-Chair, “Microwave characterization of RF materials”, IEEE Antennas and Propagation Society International Symposium and URSI National Radio Science Meeting, 2022
- Alumni and committee member of International Microwave Symposium (IMS) Project Connect 2022-2023
- Reviewer for IEEE Antennas and Wireless Propagation Letters (AWPL)