

ABUBAKER Mustafa TAREKI

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EDUCATION

- Ph.D. in Electrical & Computer Engineering (Major is Optics, minors are: Electronics and Math), The University of Alabama in Huntsville, 2018, Alabama, USA
- Master of Science in Professional Studies (Microsystems Engineering & Project Management), Rochester Institute of Technology, 2011, New York, USA
- Master of Science in Electrical Engineering (Optoelectronics, Photonics), Rochester Institute of Technology, 2009, New York, USA
- Advanced Certificate of Project Management, Rochester Institute of Technology, 2009, New York, USA
- Bachelor of Science in Electrical & Electronic Engineering (Electronics, Wireless Communications), Tripoli University, 2001, Tripoli, Libya

PROFESSIONAL & TEACHING EXPERIENCE

- 2014-2018 **University of Alabama in Huntsville.** Huntsville, USA
Teaching Assistant, teaching following classes:
- Fundamentals of Electrical Engineering circuit analysis Lab
 - Electrical and Electronic Circuits Design Lab
- 2011-2012 **University of Tripoli** Tripoli, Libya
Instructor, teaching following classes:
- Fundamentals of Electromagnetic for Engineers
 - AC Circuits Theory and Analysis
- 2010-2012 **Ministry of Telecommunications and Informatics
(General Telecommunications Authority)** Tripoli, Libya
Team Leader in License and Spectrum Management Division
- Manage, lead, and sometimes participate in other groups to set different rules, laws and regulations for telecommunication sector.
 - Responsible for licensing (Type Approval) the new radio devices or equipment before importing them to Libya and ADSL licensing.
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RESEARCH BACKGROUND & PUBLICATIONS

1. "Optimizing Silicon Nitride Waveguide Fabrication for Classical and Quantum Applications," A. Tareki, J. Weihong, C. Kupchak, and k. Mnaymneh, in *ICTON 2025 IEEE Photonics Journal*, Barcelona, Spain, July 6-10, 2025 (invited talk and paper)
 2. "Silicon Nitride Platform for Quantum Photonics and Quantum Phononics," A. Tareki, C. Kupchak, and k. Mnaymneh, in *META 2024, the 14th International Conference on Metamaterials, Photonic Crystals and Plasmonics*, Toyama - Japan, 16 - 19 July, 2024 (invited talk)
 3. "The Influence of Deposition Temperature and Material Stress on Low-Loss Silicon Nitride Films for Integrated Quantum Optics," A. Tareki, C. Kupchak, and k. Mnaymneh, in *IEEE Photonics Journal*, vol. 15, no. 4, pp. 1-7, Aug. 2023. (Paper)
 4. "Simultaneous Measurements of the Fabricated Width and Thickness of Silicon Nitride Waveguides with Microring Resonators," M. Jalali Azizpour, D. -T. Phan, A. Tareki, B. Le Drogoff, M. Chaker and M. Ménard, 2021 IEEE 17th International Conference on Group IV Photonics (GFP), 2021. (Paper)
 5. "Optimization of Fluorine-based Plasma Etching Processes to Etch Silicon Nitride Nanostructure", Abubaker Mustafa Tareki, Boris Le Drogoff, and Mohamed Chaker, OSA Advanced Photonics Congress, 2021. (Paper)
 6. "Tunability of Terahertz Metamaterials using Liquid Crystal", Emin Gulduren, Abubaker M. Tareki, Robert G. Lindquist, IEEE Southeast 2018 conference, 2018. (Paper)
 7. "Flexible Tunable Liquid Crystal Platform in Terahertz Region", Abubaker M. Tareki, Robert G. Lindquist, Emin Gulduren, OSA Frontiers in Optics + Laser Science 2017 conference (Poster presentation + paper).
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8. "Investigation of tunable terahertz metamaterial perfect absorber with anisotropic dielectric liquid crystal", Mohammad P. Hokmabadi, Abubaker Tareki, E. Rivera, P. Kung, R. Lindquist, and Seongsin M. Kim, AIP Advances, vol. no.7 Jan 2017. (Paper)
9. "Terahertz Transparent Electrode Using Tripod Metal Aperture Array," Abubaker Tareki, Robert Lindquist, Junpeng Guo, Wonkyu Kim, and Martin Heimbeck, IEEE Transactions on Terahertz Science and Technology, vol. no.99, 2016. (paper)
10. "Longitudinal Stratified Liquid Crystal Structures to Enable Practical Spatial Light Modulators in the Terahertz Regime," Abubaker Tareki, Wonkyu Kim, Junpeng Guo, and Robert Lindquist, SPIE Optics and Photonics Annual Conference, Aug 28- Sep 01, 2016, San Diego, California, USA.
11. "Liquid Crystal Frequency Tunable Terahertz Metamaterial Absorber," M. Parvinnezhad Hokmabadi, A. M. Tareki, E. Rivera, P. Kung, R. Lindquist, and S. M. Kim, in Conference on Lasers and Electro-Optics, OSA Technical Digest (online) (Optical Society of America, 2016), paper JW2A.20.
12. "Enhancing Nano/Bio Sensors in the Terahertz Regime via Research in Tunable Metamaterials Using Liquid Crystals," Abubaker Tareki, Robert Lindquist, Junpeng Guo, Wonkyu Kim, The Science & Technology Open House (EPSCoR), Feb 7-8, 2015, Montgomery, Alabama, USA
13. "Design Challenges for Electro-optic Tuning of Amplitude and Phase in THz Region," Robert Lindquist, Abubaker Tareki, D. L. Forti, Wonkyu Kim and Junpeng Guo, paper accepted for Progress in Electromagnetics Research Symposium PIERS in Prague, Czech Rep (July 2015).
14. "Tunable metamaterial in the terahertz regime using liquid crystal," Robert Lindquist, D. L. Forti, Abubaker Tareki, and Junpeng Guo, SPIE Optics and Photonics Annual Conference, August 25-29, 2013, San Diego, California, USA.

SCHOLARSHIPS, AWARDS & AFFILIATIONS

SINCE Aug 2015	Received scholarship fund total of \$ 75,000 over three years from Graduate Research Scholars Program (GRSP) - The Alabama Experimental Program to Stimulate Competitive Research (ALEPSCoR) funded by the National Science Foundation (NSF)	
JAN 2015	First place award at The Science & Technology Open House (EPSCoR) 2015 poster competition	Montgomery, USA
2014-2018	University of Alabama in Huntsville. Graduate Dean's List recipient for excellent achievement 2014- 2018	Huntsville, USA
SINCE 2014	Member of Phi Kappa Phi society	
SINCE 2015	Member of IEEE	
SINCE 2016	Member of SPIE – University of Alabama in Huntsville- Student Chapter	
SINCE 2016	Member of Optical Society of America (OSA)	

SKILLS

- More than 15 years of clean room experience using different tools and instruments were involved in PICs and IC chips fabrication, E-beam lithography, dry plasma etching, photolithography, sputtering, thermal evaporating, ellipsometer, RIE and ICP dry plasma etch, SEM, AFM, PECVD, LPCVD .etc
- Using various lab instruments and equipment's for testing optical, electrical, and electronic circuitry and component (oscilloscopes, OSA, DCA, BERT, multimeters, etc.)

- L-edit design tool, K-layout, Windows XP, Microsoft Office, MATLAB, Python, HFSS and Ansoft (EM design tools), COMSOL, EM Photonic and PathLoss.