NITER

Engr. Shakhawat Parvez

Electrical and Electronic Engineering

Bio

Welcome to my Official Webpage!

Assalmu Alaikum, I am Shakhawat Parvez, serving as a Lecturer in this esteemed department since January 2019. Prior to this, I held a full-time lecturer position in the Department of Electrical and Electronic Engineering at a private university for over three years. I attained my B.Sc. engineering degree in Electrical and Electronic Engineering (EEE) in 2014 from the prestigious Khulna University of Engineering & Technology (KUET), where I achieved Summa Cum Laude distinction (position 4th out of 120 students), ranking in the top 3% of my class.

From January 2016, I worked as a visiting researcher in the same department. During this time, I designed an innovative electromagnetic band-gap structure, the dumbbell annular ring resonator, which significantly enhanced the performance of the quasi-lumped ultra-wideband (UWB) band-pass filter. Throughout this period and during my senior year, I devoted much of my time to conducting research and actively participating in numerous technical seminars and international conferences.

My research journey in computational nanoelectronics began with my pursuit of the M.Sc. Engineering degree in EEE since 2020. My research primarily revolves around the impact of 2D nano contacts on the performance of oxy-nitride-based perovskite solar cells. The

allure of the nano-verse's physics lies in understanding quantum phenomena amidst subatomic particles. The intriguing electron-metal-electron and light-matter interactions at the quantum level unveil unseen properties of nanostructures, inspiring me to delve into their fundamental physics and explore their core.

Drawing from my previous experiences, I have chosen to focus on the theoretical modeling of 2D nanomaterials as contacts on photovoltaics, with the goal of advancing green and renewable energy sources. My core research interest lies in discovering nonconventional novel materials through the use of computational quantum chemistry, aimed at enhancing the carrier generation.

Please feel free to reach out to me (via Researchgate or LinkedIn) for any collaborative research or contributions related to theoretical modeling of 2D nano-contacts.

Education

Degree Name	Group/Major Subject	Board/Institute	Country	Passing Year
B.Sc. Engineering (B.Sc. Eng.)	Electrical and Electronics Engineering (EEE)	Khulna University of Engineering & Technology (KUET)	Bangladesh	2014

Experience

Job Title	Organization	Location	From Date	To Date
Lecturer	National Institute of Textile Engineering & Research (NITER)	Savar, Dhaka	January 2019	Present
Lecturer	Daffodil International University	Ashulia, Savar, Dhaka	January 2016	October 2018

Research Activities

Research Interest

Subject	Description	Research Interest (Goal/ Target Indication)
Optoelectronics and Photonics		Nano-photonics, photonics integrated circuits, optoelectronic device fabrication
Nanomaterials		Metamaterials and nanomaterials synthesis, solid-state materials and devices

Microwave Filter	RF and microwave ultra-wideband (UWB) filters

Invited Talk

Serial No.	Invited Talk
1.	**Title** "Quarter Wavelength Open Stub Band Pass Filter Based on Dumbbell Annular Ring Resonator For UWB Applications**", organized by IEEE Bangladesh section (Microwave Theory and Techniques Society) at Dept. of EEE, BUET, December 2017.**
2.	**Title** "A Novel Quasi-Lumped High Pass Filter with Multiple Transmission Zeros", organized by **IEEE Bangladesh section ((Microwave Theory and Techniques Society) at Dept. of EEE, CUET, Bangladesh, February 2019.**

Membership

Collaboration & Membership Name	Type	Membership Year	Expire Year
IEEE Photonics Society	Member	2015	Present
IEEE Electron Devices Society	Member	2015	Present
Institute of Engineers (IEB), Bangladesh	Associate Member	2015	Present

Publications

Conference Proceedings

SL. No-	Paper Name	Link
13	Analysis on Novel Metamaterial Resonator: A Critical Study to Enhance the Performance by Tuning Parameters	*IEEEXplore Link*
12	Quarter Wavelength Open Stub Band Pass Filter Based on Dumbbell Annular Ring Resonator For UWB Applications	*IEEEXplore Link*
11	A Quasi-Elliptic Low Pass Filter Based on Complementary Split Ring Resonator With Sharp Selectivity and Wide Stopband	*IEEEXplore Link*
10	A Novel Quasi-Lumped High Pass Filter with Multiple Transmission Zeros	*IEEEXplore Link*
9	Chebyshev Quarter Wavelength Wideband Bandstop Filter Based on Dumbbell Annular Ring Resonator	*IEEEXplore Link*

8	Chebyshev type-I low pass filter using annular ring resonator: A comparative performance analysis for different substrates	*IEEEXplore Link*
7	Uniform high-Q factored 3:9 annular ring resonator in coupled-line bandpass filter: Design and applications	*IEEEXplore Link*
6	The 1x1 annular ring: Bandwidth enhancement of microstrip asymmetric couple-line bandpass filter with superior matching and lower insertion loss	*IEEEXplore Link*
5	Dumbbell annular ring with circular patterned microstrip low-pass filter with higher selectivity, wider stopband and lower insertion loss	*IEEEXplore Link*
4	Demonstration on performance characteristics of microstrip low-pass filter for various substrates employing Tschebycheff distribution	*IEEEXplore Link*
3	Determination of appropriate substrate for microstrip low-pass filter employing square designed Tschebycheff distribution	*IEEEXplore Link*
2	Advanced investigation on EBG structures: A critical analysis to optimize the performance of asymmetric couple-line bandpass filter	*IEEEXplore Link*
1	Investigation on EBG structures: A critical analysis to optimize the performance of asymmetric couple-line bandpass filter	*IEEEXplore Link*

Award

Award Type	Title	Year	Country	Description
Academic	**Dean's List Award**	2010-2014	Bangladesh	For excellent academic performance throughout the Bachelor study level

Contact

Academic

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Institute – Faculty

Name of the Department: Electrical and Electronic Engineering

Position: Lecturer