

Safia Aktar Dipa

Circuit House, Nabinbag, Gopalganj-8100, Bangladesh

Email: dipa.eee@bsmrstu.edu.bd Phone: +880-1642700616 Linkdin: [linkedin.com/in/safia-aktar-dipa](https://www.linkedin.com/in/safia-aktar-dipa)

Research Interests

Biophysics, Biomedical Imaging, Biomedical Signal processing, Biophotonics, Biomedical Engineering.

Education

University of Dhaka

- Master of Science in Biomedical Physics and Technology

Dhaka, Bangladesh
March 2023

Rajshahi University of Engineering & Technology

- Bachelor of Science in Electrical and Electronic Engineering

Rajshahi, Bangladesh
December 2018

Chuadanga Govt. College

- Higher Secondary School Certificate Examination; GPA: 5.00/5.00

Chuadanga, Bangladesh
July 2013

Chuadanga Govt. Girls' High School

- Secondary School Certificate Examination; GPA: 5.00/5.00

Chuadanga, Bangladesh
March 2011

Professional Experience

Bangabandhu Sheikh Mujibur Rahman Science and Technology University (BSMRSTU)

Lecturer, Department of Electrical and Electronic Engineering

Gopalganj, Bangladesh
October 2023 – Present

Conducted Courses: Electrical Circuits, Microprocessor, Interfacing and System Design, Power System Protection, High Voltage Engineering, Electrical Circuit Laboratory, Microprocessor, Interfacing and System Design Laboratory, Power System Laboratory, Power System Protection Laboratory.

Noakhali Science and Technology University (NSTU)

Lecturer, Department of Electrical and Electronic Engineering

Noakhali, Bangladesh
June 2023 – October 2023

Conducted Courses: VLSI, Biomedical Measurement and Signal Processing, Measurement and Instrumentation, Biomedical Measurement and Signal Processing Laboratory, Research Methodology.

City University

Lecturer, Department of Electrical and Electronic Engineering

Dhaka, Bangladesh
April 2019 – June 2023

Conducted Courses: Digital System Design, Electronic Circuits, Electrical Circuits, Electrical Machine, Mobile and Cellular Communication, Optical Fiber Communication, Electrical Circuit Laboratory, Electrical Machine Laboratory, Power System Laboratory.

Publications

"Effects of temperature on electrical impedance of biological tissues: ex-vivo measurements"

- Published on Journal of Electrical Bioimpedance, vol. 15, no. 1, Sciendo, 2024, pp. 116-124. <https://doi.org/10.2478/joeb-2024-0013>.

"Effects of Temperature on Electrical Bioimpedance of Biological Tissues"

- Abstract published on 1st International Dhaka Science Conference for Women-WSTC 2023.

"Advanced Switching Technique based High-Frequency Magnetic Linked Asymmetric Multistring Inverter with Reduced THDs."

- Published on "2nd International Conference on Sustainable Technologies for Industry 4.0 (STI)-2020", 19-20 December, Dhaka.
- Suggests an advanced modulation technique for the enlargement of the performance of high frequency magnetic linked asymmetric multi-string multilevel inverter to reduce the THD and switching losses.

Poster Presentation

- Participated on oral poster presentation on "1st International Dhaka Science Conference for Women-WSTC 2023".

Graduate Research Experience

"Effects of Temperature on Electrical Impedance of Biological Tissues"

- Electrical impedivity and transfer impedance of biological tissues were measured over the frequency range 1Hz to 10MHz using an impedance spectrometer (Sciospec ISX-5, Germany). Freshly excised animal tissues (lamb, cow, chicken), fish, fruits, vegetables were considered as biological tissues. It was observed that the impedivity and transfer impedance values decreased with increased temperature at all frequencies.

Undergraduate Research Experience

“Design of a Photonic Crystal Fiber for Nearly Zero Flat Dispersion with Low Confinement Loss”

- Designed six rings of air holes hexagonally arranged in the cladding region and a two rings of microstructure core which is also hexagonally arranged using Comsol. The air holes are filled with different liquids.
- Dispersion parameter varies from -0.43 ps/km/nm to +0.35 ps/km/nm at the wavelength of 1500 nm – 1800 nm. The confinement loss of PCF with ethanol fills in 3 rings is 2.04×10^{-12} dB/m for pitch diameter of 2.56 μm and the hole diameter of 1.9 μm .

Project Experience

Undergraduate Projects

- Speed measurement of vehicle
- Designing and operating an FM Transmitter.
- Light Intensity Control to Reduce Power Consumption

Supervised Projects

- A Gesture controller Wheelchair to Monitor the Health of Disabled Person.
- IoT Based Automatic Hand Sanitization System & Social Distance Maintaining Protocol Due to Covid-19 Situation.
- IoT Based Three Phase Transmission Line Fault Detection.
- Smart Water Spraying Robot with Video Monitoring and Fire Detection System.
- Solar Powered Remotely Operated Robot for Seed Implementation, Watering and Fertilizing.
- Design and Construction of GSM Based Electricity Theft Identification System.
- Automatic Transfer Switch by Using Programmable Logic Controller (PLC).

Computer Skills

- **Programming Languages:** C, PLC Ladder diagram, MATLAB, 8086 Assembly language.
- **Numerical Analysis:** Matlab, Microsoft Excel
- **Circuit Simulation and Design:** COMSOL, Matlab Simulink, Proteus, Microwind, AutoCAD.
- **Document Preparation Systems:** Microsoft Word, PowerPoint.

Language

- English
- Bengali (Mother Language)

Awards

- Received “Khandakar Lutfi Rabbani-Nazmunnesa Memorial Scholarship, 2021-2022” at University of Dhaka.
- Received “Book Award 2020” from the University of Dhaka.

Leadership and Management Skills

- Organized the “Rag Program-2024” and “EEE Alumni Association Reunion Program-2024” at BSMRSTU.
- Advisor and president of “Programming and Soft Skills development club” of BSMRSTU.
- Organized “EEE Olympiad-2023” at NSTU.
- Acted as president and organizing member of “English Language Club” of City University.