Abdullah Al Shadi

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Research interests

- Semiconductor Devices
- Novel Materials
- Nanotechnology
- Energy Harvesting
- Renewable Energy
- Device Fabrication
- VLSI Technology
- Embedded System
- Hardware Prototyping
- IoT Electronics

Education

Khulna University of Engineering & Technology, Bangladesh — **Khulna, Bangladesh**
BSc. in Electrical and Electronic Engineering — Jan. 2019– Mar. 2024
CGPA: 3.21 (out of 4)

Publications

Journals

- Muneef Hasan, et al."A comprehensive analysis of structural, electronic, optical, mechanical, thermodynamic and thermoelectric properties of direct band gap Sr3BF3 (B = As, Sb) photovoltaic compounds: DFT-GGA and mBJ approach", *Inorganic Chemistry Communications, Volume 171*, January 2025, 113607. ***(IF :4.4)*** (View)
- "Comprehensive Investigation of Strain-Induced Transformations in Lead- Free FrSnA3 (A = Cl, Br, and I) Perovskite: Unraveling Structural, Electronic, Optical, and Mechanical Properties through DFT Calculations", *2025,* ***[Manuscript under review].***

Conferences

- Abdullah Al Shadi, et al. "Investigation of the impacts of different parameters of Buffer Carbon Trapping in AlGaN/GaN HEMTs", *4th International Conference on Electrical, Computer and Communication Engineering (ECCE),* 13-15 February 2025. (View)
- Bijoy Sorker, et al. "First-Principles Investigation of the Structural, Electronic, Mechanical, and Optical Properties of A3NBr3 (A = Ca, Sr, and Ba)", *4th International Conference on Electrical, Computer and Communication Engineering (ECCE),* 13-15 February 2025. (View)

Projects

- **USB-C to UART Converter (KiCad)**
  - *Designed a compact USB-C to UART converter with ESD protection and voltage level shifting using FT-332 IC. Completed schematic, footprint creation, PCB layout, and 3D visualization using KiCad.*
- **DC Motor Speed Controller (KiCad)**
  - *Developed a PWM-based speed controller using a 555 timer and transistor driver. Executed schematic design, custom footprints, and PCB layout with real-time speed control via potentiometer.*
- **Servo Motor Tester (KiCad)**
  - *Created a standalone PWM generator for servo testing using a 555 timer IC. Handled full schematic design, PCB layout, and 3D model generation in KiCad.*
- **AC to DC Power Supply KiCad)**
  - *Designed a regulated power supply converting 230V AC to 5V/12V DC. Completed end-to-end schematic, footprint design, PCB layout, and safety-focused component selection in KiCad.*
- **DC Motor Control using Full Bridge Power Converter for Locomotive Train Machine**
  - *Implemented a DC motor control system using a power electronics-based H-bridge converter to regulate speed and direction. Integrated microcontroller-based control, highlighting real-world application of electric vehicle drive systems.*
- **IOT based voice controlled smart home automation**
  - *Developed a voice-activated home automation system using a voice assistant to control household appliances, enabling hands-free interaction and enhancing user convenience.*
- **Designing a Single Phase, Shell Type Transformer**
  - *Collaboratively designed and built a 220V/12V, 400VA single-phase transformer. Achieved practical implementation of transformer theory with results closely matching design specifications.*

- **Flat Wiring Design with Cost Estimation using AutoCAD software**
  - *Designed a floor plan and performed conduit wiring layout using AutoCAD. Calculated required illumination and appliance placement with a cost-effective wiring estimate of BDT 82,298.*
- **Autonomous Line Follower Robot**
  - *It's an Arduino based project. The robot can follow a given path by avoiding all the barriers and reaching the final destination. It is mainly a competition-based project to reach the final destination as soon as possible.*

Software Skills

- ***Programming Languages:*** Python, C, C++, MATLAB
- ***Hardware:*** PLC, Arduino IDE, STM32
- ***Other Skills:*** Circuit Design, PCB Layout, Signal Processing, Embedded Systems
- ***Designing Tools:*** Adobe Illustrator
- ***Software and Tools:*** AutoCAD, Simulink, Proteus, TCAD, PSpice, KiCad, SCAPS
- ***Web Technologies:*** HTML, CSS
- ***Office Tools:*** Word, Excel, PowerPoint

Experiences

- **Executive-Projects & Product Development,** Super Star Group — May.2025-Present
  - *Design and implement PCB layout of rechargeable Fan*
  - *Develop the existing product quality*
  - *Find the way of cost minimization*
- **Organizing Secretary,** EEE Makers Hub — Jan. 2023– Mar. 2024
  - *Organized technical events, workshops, and seminars to promote skill development.*
  - *Led technical initiatives, demonstrating strong organizational and leadership skills.*
  - *Established connections with industry professionals for potential collaborations and opportunities.*

Awards and Achievements

- Education Board Scholarship for a good result in Higher Secondary Education — 2018
- Regional Champion of National Creative Talent Hunt (Science) — 2015
- Education Board Scholarship for a good result in JSC Examination — 2013

Certifications

- 30 Days Masterclass on PLC — November, 2024
- MATLAB Programming for Engineers and Scientists — October, 2022
- Mastering Programming with MATLAB — June, 2022
- Introduction to Programming with MATLAB — May, 2022
- Python For Beginners Course In-Depth — June, 2022

Language skills

- English (IELTS Band -7)
- Bangla (Native)

Reference

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