Abdulaziz Salman Aljohani

Electrical Engineer

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Summary

Recent Electrical Engineering graduate from Taibah University with hands-on experience gained through training in the Supply and Maintenance Department at King Salman bin Abdulaziz Medical City (KSAMC). My senior project involved designing and simulating an active terahertz optoelectronic modulator using metamaterials, which deepened my knowledge of advanced communication technologies. I completed electives in High Voltage, Power Electronics, and Communication Systems, and have a solid foundation in Control Systems (including PID controllers) and Renewable Energy technologies.

Work Experiences

- **King Salman Bin Abdulaziz Medical City (KSAMC), Medina, Saudi Arabia**

Electronics Engineer (Cooperative Training) **06-2024 | 08-2024**

- Electrical Maintenance & Testing: Participated in inspection and functional testing of power distribution panels, low-voltage motors, and transformers, ensuring compliance with safety standards.
- Preventive Maintenance & Documentation: Assisted in executing PM schedules for critical care units, HVAC systems, and medical equipment, contributing to uninterrupted operations.
- Control Systems Integration: Gained exposure to control logic used in hospital infrastructure, reinforcing knowledge of industrial automation.
- Inventory & Supply Chain Management: Supported procurement tracking and optimized spare part availability through structured inventory systems.
- Compliance & Safety: Applied hospital-specific electrical safety standards (IEC, NEC) in daily operations and learned risk mitigation strategies.

Projects

- **Graduation project: Design and Simulate Active Terahertz Metamaterial Optoelectronic Modulators**

Project Objectives: **08-2024 |05-2025**

- Develop a high-frequency optoelectronic modulator for terahertz communication systems.
- Leverage metamaterials to enhance modulation efficiency and tunability.

My Role:

- Led the research, design, and simulation of the modulator structure using CST Studio Suite.
- Handled the Modulator Overview, Design Methodology, and Results sections for final documentation and presentations.
- Integrated principles from electromagnetics, semiconductor physics, and solid-state electronics.
- Performed analysis on the modulation response, tunability, and energy efficiency to meet advanced THz system requirements.

Education

Bachelor of Electrical Engineering, Taibah University **09-2019 |06-2025**

Membership

Saudi Council of Engineers (SCE), Electrical Engineer **06-2025 | Present**

Courses and Certificates

- Power Electronics, Taibah University **2025**
- High volt engineering, Taibah University **2025**
- Communication Systems, Taibah University **2025**
- Electromagnetic waves, Taibah University **2025**
- Engineering Topics in power, Taibah University **2024**
- Transformer Testing and Maintenance, KSAMC **2024**
- LV Motor Starting, Control, Protection Solutions and "Grounding & Protection systems", SCE **2023 - 2024**

Technical Skills

- MATLAB/SIMULINK
- Antenna Design (e.g., CST)
- C++ & VHDL Programming
- Electronic Circuit Design (Multisim, Circuit Lab, PSIM)
- Power Systems & Electrical Machines
- Control Systems Modelling (e.g., PID Controllers)

Soft Skills

- Microsoft Office
- Analytical Problem Solving
- Working under pressure
- Leading a team (Graduation project leader)
- Communication skills
- Risk Assessment & Mitigation Planning

Language

- Arabic: Native
- English: Fluent