

Electronic Engineer in Nanotechnology

M.Sc. in Applied Science (Nanotechnology), graduated with distinction.

B.Sc. in Electronic Engineering (Nanotechnology)

Khaled Abd Alnabi | Tel Aviv | **052-3683928** | khaled.abdalnabi98@gmail.com | [Linkedin.com](https://www.linkedin.com/in/khaled-abd-nabi-98).

Summary

- **Electronic Engineer** specializing in **Nanotechnology** with a strong academic and research background in **semiconductor materials**, **nanofabrication**, and **device engineering**.
- Holds an **M.Sc. in Applied Science** (Nanotechnology), graduated with distinction, and a **B.Sc. in Electronic Engineering** (Nanotechnology).
- Hands-on experience in **nanomaterials synthesis**, **micro/nanofabrication processes** (PVD, CVD, lithography, etching), and **advanced material characterization** (FESEM, TEM, Raman, XRD).
- Skilled in **semiconductor physics**, **IC design fundamentals**, and microcontroller programming (**C++**, **Assembly**) with a focus on integrating materials science into next-generation electronic devices.

Education

2023–2025 **M.Sc. in Applied Science (Nanotechnology), University of Malaya (UM)**

- Graduated with Distinction (CGPA 3.75)
- First and only student to complete this pioneering program – demonstrating initiative, research capability, and excellence.

2019–2023 **B.Sc. in Electronic Engineering (Nanotechnology), Multimedia University (MMU)**

2018–2019 **Foundation in Engineering, Multimedia University (MMU), Malaysia**

Projects & Research

2025 Optimizing Output Power for Graphene-Based Free-Standing Triboelectric Nanogenerator (FT-TENG)

- Synthesized graphene oxide (GO) via simplified **Hummers' method** and integrated **GO/graphene nanoplatelets** into neoprene rubber.
- Characterized **surface morphology** and dispersion using **FESEM** and **Raman spectroscopy**, confirming improved conductivity.
- Tested performance (**Voc**, **Vp-p**, **Vrms**, **wear rate**, **friction**) using **Oscilloscope** and **Wear Monitor**, achieving optimized energy output.

2023 Freestanding Triboelectric-Layer Mode Nanogenerator (TENG) via Rotating Circle – MMU

- Designed and fabricated flexible **TENG structures** for energy harvesting.
- **Converted AC pulse** output to near-DC using advanced material layering and rotational designs.
- Conducted **electrical** and **mechanical performance testing** using oscilloscopes and multimeters.

2021 Reminder System – MMU

- Designed a piezoelectric sensor (barium titanate-based) integrated into a smart door handle for automation.
- Developed and tested using Arduino Uno and Bluetooth-enabled signal processing.

Technical Skills

Nanotechnology & Materials Science: Nanomaterial synthesis, surface characterization (FESEM, TEM, Raman, XRD), thin film deposition (PVD, CVD), photolithography, etching.

Semiconductors & Electronics: Knowledge of semiconductor materials (Si, SiO₂, SiGe, compound semiconductors) and devices (diodes, BJTs, CMOS), with Solid-state devices, VLSI, IC design fundamentals, and microelectronic circuit analysis.

Device Design & Fabrication: TENGs, piezoelectric sensors, optoelectronic components (LEDs, photodiodes, solar cells), and N/MEMS systems.

Wafer Process & Device Fabrication: Oxidation, diffusion, ion implantation, epitaxial growth, gate oxide formation, metallization, and photolithography.

Programming: C++, Assembly (microcontroller applications).

Instrumentation: Oscilloscope, Reciprocating Friction & Wear Monitor, rotation-speed controllers.

Research & Development: Scientific publication, data analysis, and experimental documentation across wet and dry lab environments.

Experience

2025 – Present **Electrical Control Engineer** – פרפקט הנדסת, Jerusalem

- Gaining practical exposure to industrial electrical systems assembly, wiring, and quality standards while pursuing R&D opportunities in nanotechnology and electronic materials.
- Provided technical guidance and training to team members on wiring, panel organization, and assembly requirements, explaining the rationale behind each process to enhance quality and efficiency.

Awards

2023 **Best Final Year Project & Poster Showcase (Engineering, MMU)**

2020/2022 **Dean's Award for Academic Excellence**

Languages

Arabic – Native | **English** – Fluent