Amin Nabawy Ibrahim Abdelal

Address: New Elmarg , Kaliobeya ,Egypt
Phone: (+20)1273653839 – (+20)1557979726
Email: amin.abdelall@feng.bu.edu.eg

Personal Information

- **Birth date:** 6 NOV 1994
- **Gender:** Male
- **Marital Status:** Married
- **Military Status:** Completed

Objective

Obtain a PhD position specializing in graphene nanostructures, laser-based nanofabrication, and functional material optimization, aiming to enhance the performance of flexible sensors for wearable and IoT applications, with an emphasis on scalable and industry-relevant solutions.

Education

M.Sc. in Engineering Physics, 2026
Basic Science Department, Faculty of Engineering at Shoubra, Benha University, Egypt.
Topic: Studying Properties of Flexible Graphene Thin Films in Advanced Devices

Supervisors: Asst. Prof. Amr Hessein Hassan, Asst. Prof. Mohammed Gamil Mohammed, Asst. Prof. Shaimaa Ali Mohammed

B.Sc in Mechanical Power Engineering, 2018
Mechanical Engineering Department, Faculty of Engineering at Shoubra, Benha University, Egypt. (**Excellent Honors**)

Work Experience

Teaching Assistant for Engineering Physics, Basic Science Department, Faculty of Engineering at Shoubra, Benha University, Egypt.
04/2026 – Present

Volunteer Research Assistant at Center of Photonic and Smart Materials (CPSM), Zewail city of science, technology and innovation.
10/2022 - Present

Demonstrator for Engineering Physics, Basic Science Department, Faculty of Engineering at Shoubra, Benha University, Egypt.
03/2020 - 04/2026

Technical Skills

- **Thin film preparation**
- **Operation of Laser machines**
- **Knowledge of some vector graphics software**
- **Analysis of different material characterization including**
  - ✓ X-ray diffraction
  - ✓ Scanning electron microscopy
  - ✓ Raman spectroscopy
  - ✓ FTIR spectroscopy
  - ✓ UV visible spectroscopy
  - ✓ X-ray photoelectron spectroscopy
  - ✓ Electrical measurements
- **Perform and analysis of different sensor characterizations**
  - ✓ Sensitivity
  - ✓ response /recovery time
  - ✓ hysteresis
  - ✓ stability – …
- **Adept at translating complex scientific data into clear, impactful visual representations with proficiency in storytelling**
- **Basic Arduino knowledge in setups building for measurement or validation.**

Research Area

- Engineered Graphene-Based Nanostructures via Laser Processing
- Controlled Heteroatom Doping
- Laser-Induced Graphene (Infrared and Visible)
- Flexible Temperature and Strain Sensors
- Nanomaterials Characterization and Device Integration.

Computer skills

- Microsoft office
- OriginLab
- AutoCad
- CorelDraw – Inkscape
- ChemDraw
- Photoshop – Camtasia.

Publications

[1] **A. Nabawy**, M. Gamil, S. A. Mohamed, and A. Hessein, "High-performance flexible temperature sensor based on heteroatom doped laser-reduced graphene oxide," *Emergent Mater., 2025*, https://doi.org/10.1007/s42247-025-01226-1.

[2] M. T. Al-Shemy, X. Yang, Y.Yang, Q. Wang, **A. Nabawy**, A. Hessein, Samir Kamel, Gamal Turky "Metamaterial-inspired cotton textile functionalized with polyaniline-methylcellulose@rGO-CuS Nanohybrids: Tunable negative dielectric permittivity and enhanced piezoresistivity," *Int. J. Biol. Macromol*., vol. 360, p. 151964, 2026, https://doi.org/10.1016/j.ijbiomac.2026.151964.