

# Dr. ADEL SALEH AB BELKHIR

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## PROFESSIONAL SUMMARY

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Accomplished Ph.D. holder and Senior Lecturer in Electrical Engineering with extensive leadership experience spanning both higher education and critical industrial infrastructure management. Served robustly as Head of the Electrical and Electronic Technologies Department at the Higher Institute of Engineering Technologies, alongside pivotal technical leadership as Head of the Electrical Engineering Department at Tripoli Medical Center, overseeing large-scale power infrastructure execution. Holds a Ph.D. from Altınbaş University (Turkey) and an M.Sc. from the University of Newcastle (UK). Highly specialized in power quality improvement, hybrid renewable energy integration (PV/Wind), and microgrid modeling. Backed by elite international technical training in Germany, Austria, and with Daewoo (South Korea) focusing on critical backup power, central UPS design, and substation control.

## WORK EXPERIENCE

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### Head of Electrical and Electronic Technologies Department

**Higher Institute of Engineering Technologies** – Tripoli, Libya

*[11-2024] – Present*

- Provide strategic and academic leadership for the department, overseeing curriculum development, faculty allocation, and laboratory modernization.
- Deliver advanced lectures on power systems, electrical machines, and control engineering, mentoring undergraduate engineering students.
- Supervise graduation research projects and drive departmental initiatives aligned with international engineering education standards.

### Head of Electrical Engineering Department (Infrastructure Execution)

**Tripoli Medical Center (TMC)** – Tripoli, Libya

*[1996] – [2006]*

- Directed the full technical preparation, commissioning, and execution of the massive electrical power infrastructure for Tripoli Medical Center.
- Supervised the installation, synchronization, and programming of critical central backup generator networks and mission-critical central UPS systems to ensure zero-downtime operation for Intensive Care Units (ICU) and central operating theaters.
- Managed cross-functional technical teams and collaborated with international contractors to audit, maintain, and operate main substations and power distribution grids.

## EDUCATION

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**Doctor of Philosophy (Ph.D.) in Electrical Engineering**  
**Altınbaş University** – Istanbul, Turkiye [2021]

**Master of Science (M.Sc.) in Electrical Engineering**  
**University of Newcastle** – Newcastle, United Kingdom [2008]

## PUBLICATIONS & RESEARCH PAPERS

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### Published Peer-Reviewed Papers:

- A. S. Balkhir, "Deep Neural Network Controller Based Power Quality Improvement to Hybrid PV/Wind Systems," November 2021.
- A. S. Balkhir, "Design and Simulation of a Standalone Solar Power System to Supply Wafa Oil Field Wells with Electrical Energy Using Pvsyst Software" [Published in Arabic: تصميم ومحاكاة نظام طاقة شمسية مستقل  
مصمم ومحاكاة نظام طاقة شمسية مستقل مستغل], [مجلة ليبيا للعلوم التطبيقية والتقنية], [Pvsyst], [التغذية ابار حقل الوفاء النفطي بالطاقة الكهربائية باستخدام برنامج  
pvsyst], June 2024..
- A. S. Balkhir, "A Proposal for a Simulation Study of an Active Filter Operating with Fryze Algorithm in Three-Phase Electrical Circuits" [Published in Arabic: مقترح دراسة تشبيهية لمرشح فعال يعمل بخوارزمية فريز في الدوائر  
مقترح دراسة تشبيهية لمرشح فعال يعمل بخوارزمية فريز في الدوائر], Comprehensive Sciences Journal (مجلة العلوم الشاملة), November 2024.
- A. S. Balkhir, "Study and Simulation of Currents According to IEC vs ANSI Standards in Ship Power Systems" [Published in Arabic: دراسة ومحاكاة لتيارات القصر وفقا لـ IEC vs ANSI في أنظمة الطاقة للسفن:  
دراسة ومحاكاة لتيارات القصر وفقا لـ IEC vs ANSI في أنظمة الطاقة للسفن:], Comprehensive Sciences Journal (مجلة العلوم الشاملة), November 2024.

### Forthcoming / Accepted Research:

- A. S. Balkhir, "Modeling and Analysis of the Electric Microgrid of the Hospital"

## PROFESSIONAL TRAINING & INTERNATIONAL CERTIFICATIONS

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- **Advanced Training on Backup Generation Systems & Central Power Networks** – Specialized study and operations deployment – Vienna, Austria (August 2001).
- **Advanced Programming, Operation, and Maintenance of Central Industrial UPS Systems** – Tailored for high-security environments (Intensive Care Units & Central Surgical Theaters) – Hamburg, Germany (November 2000).
- **Operational Systems Course for Main Power Supply Grid & Transformational Substations** – Comprehensive training on electrical supply management and industrial control systems, Daewoo, South Korea (April 1998).

## SKILLS & EXPERT COMPETENCIES

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**Core Technical Expertise:** Power Quality Optimization, Hybrid Renewable Energy Systems (PV/Wind Integration), Deep Neural Network (DNN) Controllers, Hospital Microgrid Modeling, Substation Operation, Centralized UPS Architecture, Large-scale Backup Generator Synchronization, Industrial Circuit Fault-Analysis, Pvsyst, Engineering Simulation.

**Academic & Institutional Governance:** Departmental Leadership, University-level Instruction, Academic Program Auditing, Graduate Research Supervision, Cross-border Contractor Management, Project Commissioning.

## LANGUAGES

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- Arabic: Native speaker (Mother tongue)
- English: Fluent / Academic Proficiency (Educated in the United Kingdom)