Curriculum Vitae

Personal Data

Name	Ahmed Hassan Hamed Okilly
Address	Electrical Engineering Department, Faculty of Engineering, Assiut University, Assiut, 71516, Egypt.
Current Job	Assistant professor (lecturer), Assiut University, Egypt.
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Nationality	Egyptian
Social status	Married
Date of Birth	21 Apr 1990

Education

➢ **(2018-2022) PhD** in Electrical Engineering, from Electrical & Electronics and Communication Engineering Department, Koreatech University, Cheonan, Republic of Korea. The title of thesis is **"Optimal Design and Implementation of a High-Power Density Two-Stage AC-DC Power Supply in Telecom Power Server Applications".** With overall GPA of 4.46/4.5.

➢ **(2014-2017) M. Sc.** in Electrical Engineering, Faculty of Engineering, Assiut University, Assiut, Egypt. The title of thesis is **"High Voltage Direct Current Transmission Systems for Enhancing Power System Performance"**. With general grade distinction of 93.60%.

➢ **(2007-2012) B.Sc.** in Electrical Engineering, Faculty of Engineering, Assiut University, Assiut, Egypt, with cumulative average grade **very good** with honor degree **(84.33%).** Also, The Graduation project: **"Electrification Design and Power System Distribution of anew City"** with a Graduation project grade: **Excellent.**

- ➤ **Postdoc Researcher**
  - o **Affiliation:** In the Electrical & Electronics and Communication Engineering Department, Koreatech University, Cheonan, Republic of Korea.
  - o **Period:** From Aug., 2022 till Dec. 2023.
  - o **Project title:** Fault diagnosis and life time predication techniques for the IGBT power modules utilized in the high power density traction inverter.
  - o **Supervisor:** Prof. Jeihoon Baek.
  - o **Main Tasks:**
    1. Design and implementation of the experimental setup for the advanced power cycling test for the life time predication of the IGBT power module.
    2. Proposed and design the voltage, current and temperature sensors for the (collector emitter voltage, collector current and the junction temperature) measurement.

- ➤ **Assistant professor(Lecturer)**
  - o **Affiliation:** At the Electrical Engineering Department, Assiut University, Assiut, Egypt.
  - o **Period:** From Oct., 2023 till Now.
  - o **Main Tasks:**
    1. Teaching electrical engineering courses to under-graduate students and also teaching courses to postgraduate students of master's and doctoral studies.

2. Carrying out scientific research tasks and supervising graduate students. Following up on students' various graduation projects.

➢ **Teacher Assistant**

- o **Affiliation**: At the Electrical Engineering Department, Assiut University, Assiut, Egypt.

- o **Period**: From Aug., 2017 till Sep. 2023.

- o **Main Tasks:**

  1. Assisting in teaching work, helping in solving exercises, and conducting laboratory experiments for various students of the Department of Electrical Engineering.

  2. Helping under-graduate students to complete graduation projects, which is considered one of the most important graduation requirements at Assiut University.

➢ **Demonstrator**

- o **Affiliation:** At the Electrical Engineering Department, Assiut University, Assiut, Egypt.

- o **Period:** From January, 2012 till July, 2017.
- o **Main Tasks:**

  1. Assisting in teaching work, helping in solving exercises, and conducting laboratory experiments for various students of the Department of Electrical Engineering.

  2. Helping under-graduate students to complete graduation projects, which is considered one of the most important graduation requirements at Assiut University.

3. Conducting scientific research for the purpose of scientific publishing, obtaining a master's degree, and promotion to the position of teacher assistance. Because, this period also considered as the MSc degree study.

Publications (Hint: my name is marked in bold)

1. **Okilly AH**, Choi S, Kwak S, Kim N, Lee J, Moon H, Baek J. Estimation Technique for IGBT Module Junction Temperature in a High-Power Density Inverter. Machines. 2023 Oct 26;11(11):990.
2. Moniruzzaman M, **Okilly AH**, Choi S, Baek J. GPU-based Multivariate IGBT Lifetime Prediction. In2023 IEEE Energy Conversion Congress and Exposition (ECCE) 2023 Oct 29 (pp. 3510-3517). IEEE.
3. Haque MS, Moniruzzaman M, Choi S, Kwak S, **Okilly AH**, Baek J. A Fast Loss Model for Cascode GaN-FETs and Real-Time Degradation-Sensitive Control of Solid-State Transformers. Sensors. 2023 Apr 29;23(9):4395.
4. **Okilly AH**, Kim N, Lee J, Kang Y, Baek J. Development of a Smart Static Transfer Switch Based on a Triac Semiconductor for AC Power Switching Control. Energies. 2023 Jan 3;16(1):526.
5. **Okilly AH**, Lee J, Kim N, Kwak S, Baek J. Design and Optimal Control of a Two-Stage Efficient and High PF AC-DC Converter for High-Power Density Industrial Applications. In2022 14th International Conference on Software, Knowledge, Information Management and Applications (SKIMA) 2022 Dec 2 (pp. 170-175). IEEE.
6. **Okilly AH**, Baek J. Magnetic Power Components Design Analysis and Manufacturing for an-Isolated High-Power Density Telecom DC-DC Converter Stage. 전기학회논문지. 2022 Jul;71(7):959-66.
7. **Okilly AH**, Baek J. Design and Fabrication of an Isolated Two-Stage AC–DC Power Supply with a 99.50% PF and ZVS for High-Power Density Industrial Applications. Electronics. 2022 Jun 16;11(12):1898.
8. **Okilly AH**, Kim N, Kwak S, Baek J. Digital Control Bridge/Bridgeless PFC Converters with Modified Current Controller for ZCD Reduction. In2022 IEEE International Conference on Power Systems Technology (POWERCON) 2022 Sep 12 (pp. 1-6). IEEE.
9. **Okilly AH**, Baek J. Design of Wide Input Voltage Range and High PF Two-Stage AC-AC Converter Suitable for Inductive Loads. 전기학회논문지. 2022 Apr;71(4):632-41.
10. **Okilly AH**, Jeong H, Baek J. Optimal IP Current Controller Design Based on Small Signal Stability for THD Reduction of a High-Power-Density PFC Boost Converter. Applied Sciences. 2021 Jan 7;11(2):539.

11. **Okilly AH**, Baek J. Optimal Design Analysis with Simulation and Experimental Performance Investigation of High-Power Density Telecom PFC Converters. Applied Sciences. 2021 Aug 27;11(17):7911.
12. **Okilly AH**, Kim N, Baek J. Inrush current control of high-power density DC–DC converter. Energies. 2020 Aug 19;13(17):4301.
13. G.El-Saady, El-Nobi A. Ibrahim and **Ahmed H.Okilly**, "Sequential Technique Based AC-DC Power Flow Analysis for Medium and Long Transmission Systems", Middle East Power System (MEPCON) Conference, Egypt, Dec 2015.
14. G. El-Saady, El-Nobi A. Ibrahim and **Ahmed H. Okilly**, "Analysis and control of HVDC transmission power system", Power Systems Conference (MEPCON), 2016 Eighteenth International Middle East, pp. 190-198, IEEE, Dec 2016.
15. G.El-Saady, El-Nobi A. Ibrahim and **Ahmed H.Okilly**. "HVDC FACTS Controller for Load Frequency Control System", Fourth International Conference on Energy Engineering (icee-4), December 26-28, 2017.
16. **AH Okilly**, Y Kang, N Kim, S Kwak, J Baek "Fault Diagnosis for Power Electronic Components in Regenerative Power Converters Utilizing Breaking Power of Urban Railway: Approaches and Detection Technique" Korean Society of Mechanical Engineers Spring/Autumn Conference, Jun 2022, pp: 239-240.

Experience

1) During my PhD study and Postdoc research periods, I participated and worked in different projects with different fund organizations such as Ministry of Land Infrastructure and Transport of the Korean government, National Research Foundation of Korea (NRF), the MSIT, and many other funding organizations.

2) My graduation project title was "**Electrification Design and Power System Distribution of anew City**". In this project I studied the designing of the complete distribution system of a new city actually under construction, I designed the medium and low voltage circuits of all the buildings in this city, all the expected loads in this city is estimated, the expected short circuits currents and voltage drops is also calculated manually and using ETAP and Matlab software to make a comparative study for system proper and safety operation. Indoor Lighting, sockets, cables wiring and HVAC systems are designed using dialux and AutoCAD software analysis, medium voltage circuits, cables design of the city and distribution transformers is also studied.

3) From Oct 2012 to Oct 2013 and during the period of military service in the Egyptian army, I worked as a technical engineer in the signal corps in the Egyptian armed forces.

4) My master Thesis title was "**High Voltage Direct Current Transmission Systems for Enhancing Power System Performance**". An electric power system with DC links requires a special analysis for power flow study that takes their characteristics into account. The thesis proposed an AC-DC load flow algorithm to solve a power flow problem with DC links. The algorithm is called sequential technique. The essential feature of the proposed algorithm is that it is fast and easy to be implemented in real time. This algorithm is tested using medium and long transmission standard test systems. Results using the proposed sequential method are compared with a previous work using modified Newton Raphson Method .A comparison between HVAC and HVDC transmission systems based on power losses are also performed.

5) My PhD Thesis title was "**Optimal Design and Implementation of a High-Power Density Two-Stage AC-DC Power Supply in Telecom Power Server Applications**". In this thesis, we proposed the optimal design of the two stage AC-DC telecom power converters with power density about 2KW, PF more than 99.9% and efficiency about 99%, the complete power converter was manufactured and tested also in our lab.

6) I assisted in teaching the following courses
   1. University: Assiut university
      Degree: Undergraduate courses

   List of courses:
   - Electric Circuits (1) (1st Year)
   - Electric fields (1) (1st Year)
   - Electric Circuits (2) (2nd Year)
   - Electrical measurements (2nd Year)
   - Electrical Power Systems (3rd Year)
   - Power Electronics (3rd Year)
   - Power System Control (4th Year)
   - Power System Analysis (4th Year)
   - Electrical Tests (1st and 3rd Years)
   - Power Distribution System (4th Year)

2. **University: Assiut university**
       Degree: MSc degree courses

   List of courses:
   - Renewable Kinetic Energy Technologies
   - Power system Harmonics.

Activities

- Reviewer at peer-review journals (Applied Sciences, Electronics, Energies).
- Organization of the Thirteen International Middle East Power Systems Conference (MEPCON'2009), which held at the Electrical Engineering Department, Assiut University, Assiut, Egypt, in the period of 20 to 23 of December 2009.
- I attended Faculty and Leadership development project "FLDP" courses which develop research, publication, presentation, and communication skills with attending more than 14 training courses and internships programmers.

List of training courses: (Some of them not all**)**
   1. **"Strategic planning"**
      Training center: Faculty and leadership development center (Assiut University-Egypt).
      Period: 20-22 May 2014
   2. **"Effective presentation"**
      Training center: Faculty and leadership development center (Assiut University-Egypt).
      Period: 16-17 May 2015
   3. **"Design and conduct scientific research"**
      Training center: Faculty and leadership development center (Assiut University-Egypt).
      Period: 29-30 Nov. 2015
   4. **"Analytical and creative thinking"**
      Training center: Faculty and leadership development center (Assiut University-Egypt).
      Period: 29-30 May 2016.
   5. **"How to compete for a research fund"**
      Training center: Faculty and leadership development center (Assiut University-Egypt).
      Period: 27-29 September 2016.
   6. **"How to design the E-course?"**
      Training center: Faculty and leadership development center (Assiut University-Egypt).
      Period: 24-25 July 2017.
   7. **"Organizing scientific conferences"**
      Training center: Faculty and leadership development center (Assiut University-Egypt).

Period: 15-17 Aug. 2021
8. **"Preparing a proposal for a competitive research project"**
   Training center: Faculty and leadership development center (Assiut University-Egypt).
   Period: 13-15 Aug. 2023

Skills

- o Simulation Programs: ETAP, MATLAB / MATLAB SIMULINK, Dialux, AutoCAD, Powerex, PSIM, Multisim, TINA, ANSYS.
- o PCB design Using different software such as cadence and Easyeda.
- o Experimental setup of the different power electronic testing circuits with different loading and operation conditions.
- o Microsoft Office programs (Word, Excel, Visio and Power Point).

References

1. **Gabr Elsaady Ahmed**
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