

Senior Member, IEEE

Current Position: [Associate Professor, Head of Electrical Engineering Department, Faculty of Engineering, Kafrelsheikh University, Egypt](#)

Google Scholar:

<https://scholar.google.com/citations?user=CA3JjMIAAAAJ&hl=en>

LinkedIn:

<https://www.linkedin.com/in/hany-abdelsalam-593672109/>



PROFESSIONAL EXPERIENCES

- October 6, 2020 – present : **Coordinator of International Relations of Kafrelsheikh University, Egypt**
- September 11, 2019 – present: **Head of Electrical Engineering Department, Faculty of Engineering, Kafrelsheikh University, Egypt**
- December 2016 – present: Associate Professor, Electrical Engineering Department, **Kafrelsheikh University, Egypt**
- November 2014 – June 30, 2016: Postdoc Fellow, Electrical and Computer Engineering Department, **Clemson University, Clemson, SC, USA.**
- November 2013 - May 2014: Visiting Scholar Postdoc, Real Time Power and Intelligent System (RTPIS) laboratory, Electrical and Computer Engineering Department, **Clemson University, Clemson, SC, USA.**
- September 2012 – December 2016: Assistant Professor, Electrical Engineering Department, **Kafrelsheikh University, Egypt**
- July 2011 – September 2012: Assistant Professor, Electrical Power and Machines Department, **Tanta University, Egypt**
- Fall 2010 – Spring 2011: Research Assistant, Electrical and Computer Engineering Department, **Southern Illinois University Carbondale (SIUC), IL, USA**
- Summer 2008: PhD Trainee, Electrical and Computer Engineering Department, **Michigan Technological University (MTU), MI, USA**
- February 2000 – April 2008 Assistant Lecturer, Electrical Power and Machines Department, **Tanta University, Egypt**
- March 1997 – January 2000: Teaching Assistant, Electrical Power and Machines Department, **Tanta University, Egypt**

COMMUNITY SERVICE AND ENVIRONMENTAL DEVELOPMENT (2021)

- **Member of the Egyptian Society of Energy Efficiency Engineers.** The Egyptian Society of Energy Efficiency Engineers concerns with energy saving and hence cost reduction, especially the industrial running cost. This reduction in cost can increase the industrial development and global competing. In addition, the energy saving ensures the energy sustainability (*EGYPT'S VISION 2030: Objective 5: Integrated and Sustainable Ecosystem*).
- **Participating** in the consultant works of the consulting office, Faculty of Engineering, Kafrelsheikh University.

COORDINATOR OF KAFRELSHEIKH UNIVERSITY INTERNATIONAL RELATIONS OFFICE (2020-2021)

- **Preparing and Coordinating** Different Types of Scientific Agreements Between Kafrelsheikh University and International Universities.
- **Responsible for Data Entry and Submission** for Different Types of Rankings (Britain Times THE Impact and WUR Rankings, QS Quacquarelli Symonds World and Arab Rankings, Shanghai Ranking, and Green-metric Ranking).
- **Preparing** Reports of University Rankings Results.
- **Preparing** Database for the Kafrelsheikh University Data Portals and International Scientific Agreements.
- **Coordinator** of the Welcome Booklet of Kafrelsheikh University 2020/2021.
- **Attended** the Virtual THE MENA UNIVERSITIES SUMMIT, New York University, Abu Dhabi, 6-8 APRIL 2021.
- **Attended** an Online Training for QS Ranking Methodology on February 2, 2021.
- **Coordinator** of the events of the Egyptian-Russian Humanitarian Year (2021-2022).
- **Joint point** of the potential collaboration with University of Sharjah, UAE (2021).

LABORATORY PREPARATION EXPERIENCE - 2020

- **Preparing** the technical specifications of electrical engineering real-time laboratory including the hardware in the loop (HIL) smart grid wind power plant with DFIG.
- **The Lab has the following applications:** Protection Systems, Power System Controls, Power Electronics Simulation, Modular Multilevel Converter, Microgrid, Onboard Power Systems, Hybrid and Electrical Transportation.

- **The Lab supports** undergraduate, postgraduate and researchers at different fields of the *Electrical Power and Machines Program*. **It facilitates** as a superior computation environment for the machine/deep learning for the undergraduate and postgraduate work of the *Computers and Systems Program*. **It is also extendable** as a cyber-physical system for the undergraduate and postgraduate work of the *Electronics and Communications Program*.

HYBRID LEARNING EXPERIENCE

- **Preparing** the Electrical Engineering Department's **Hybrid Learning Plan** for the academic year 2020/2021.
- **Coordinator and supervisor** of the Electrical Engineering Department's **Hybrid Learning** for the academic year 2020/2021.

ONLINE DISTANT LEARNING EXPERIENCE

- **Coordinator and supervisor** of the Electrical Engineering Department's online distant learning starting at March 15, 2020 to April 30, 2020.
- **Preparing Daily and Weekly Reports** of the Electrical Engineering Department's online distant learning starting at March 15, 2020 to April 30, 2020.

QUALITY ASSURANCE AND ACCREDITATION ACTIVITIES

- **Founder** of the Electrical Engineering Department Programs database in the **Dropbox application**. That database enables all the department's members to participate, modify and continuously improve the courses and programs' specifications and reports **ONLINE [January 2020 to Present]**.
- **Coordinator** of the External Evaluation of Electrical Engineering Department Programs (Egyptian Professors evaluators and **USA** professor evaluator) **[January 2020 to February 2020]**.
- **Coordinator** of the External Evaluation of Mechanical Engineering Department Undergraduate and Postgraduates Programs (**USA** professor evaluator) **[February 2020 to March 2020]**.
- **Coordinator** of Electrical Engineering Department: September 2019 to Present.
- **Coordinator** of Electrical Power and Machines Engineering Undergraduate Program: 2017 to Present.
- **Coordinator** of Electrical Power and Machines Engineering Diploma Program: December 2019 to Present.

- **Setup** the Academic Reference Standards (**ARS**) of Postgraduate Programs of Faculty of Engineering Kafrelsheikh University: [Diploma, MSc, and PhD - January 2020].
- **Setup** the Academic Reference Standards (**ARS**) of Undergraduate Programs of Electrical Engineering Department, Faculty of Engineering Kafrelsheikh University: [Electrical Power and Machines, Computers and Systems, and Electronics and Electrical Communication - January 2020].
- **Chair** of Continuous Improvement Committee of the Electrical Engineering Department Programs: January 2020 to Present.
- **Chair** of the Response to the Internal and External Evaluators Comments Committee of the Electrical Engineering Department Programs: January 2020 to Present.
- **Arranging and supervising** the Electrical Engineering Department's committees that converted the programs and curriculum specifications from NARS 2009 to NARS 2018. [January to May 2021]

EDUCATION

❖ **Ph.D. in Electrical and Computer Engineering May 2011**

Southern Illinois University, Carbondale, Illinois - **USA**

Dissertation title: A Centralized Wide Area Control of FACTS for Damping Power System Inter-Area Oscillations.

❖ **M.Sc. in Electrical Power and Machines Engineering December 1999**

Mansoura University, Mansoura - **Egypt**

Thesis title: Voltage Stability Analysis in Electrical Power Systems.

❖ **B.Sc. in Electrical Power and Machines Engineering June 1995**

Tanta University, Tanta - **Egypt**

Graduation Project Title: Analysis of Kafrelsheik City Distribution Network.

RESEARCH INTERESTS

Current: Power system control, Artificial intelligence application in power system, Data analytics, internet of things (IoT) and blockchain applications in electric smart grid.

Previous: Secure and resilient operation of distribution system, Integration of renewable energy in power systems, power system situational awareness, distribution

grid optimization and resiliency, power system control, power system security assessment, real-time tuning and control of power system, power quality, smart grid.

TEACHING INTERESTS

Power area courses: power system analysis, power system transients and dynamics, power system stability and control, advanced control of power system, power electronics basic course.

TEACHING GOALS:

- ✓ **My philosophy in teaching** and advising is to give a chance for students to innovate. With this methodology, students can obtain knowledge with a strong background and gain of course material basics.
- ✓ **As a lecturer**, I strive to give my students a fundamental understanding of both the basics and complex course applications. Above all, I want to install a sense of critical thinking when applying the fundamental concepts to real-world applications. In my course objectives, I prefer to integrate students learning both the hand derivations to solve a problem and adjacent software applications.
- ✓ **As an advisor**, I have found that students have a more fulfilling and beneficial learning experience when they are driven to research what they are most passionate about. It is my job to guide them wholistically toward their ambitions.

SOFTWARE SKILLS

- * **MATLAB/Simulink:** For Power System/Smart Grid Analysis. Optimization and Control
- * **Python:** For Smart Grid Analysis
- * **Real-time Digital Simulator (RTDS-RSCAD):** For Power System and Smart Grid Testing
- * **Power system analysis toolbox (PSAT):** For Steady State And Dynamic Analysis
- * **PMUs connection tester (Power System Sophisticated Measurement and Protection Devices)**
- * **Microsoft Office, Latex, Database, Information Technology, Windows, ...**

COURSES THAT I TOUGHT

- Computer Applications in Power System (Undergraduate course, 2011)
- Flexible AC transmission Systems FACTS (Post graduate course, 2011)
- Nonlinear Control in Electrical Power System (Post graduate course, 2012)
- Advanced Control in Power System (Undergraduate course 2011, 2012, 2014, 2016, 2017, 2018, 2019)

- Supervisor of the electrical power system control and machine drive laboratory, 2012-2013 (leading four demonstrators working in the BSc level laboratory)
- Technical English Language (Undergraduate course, 2013)
- Power System Analysis (Undergraduate course 2012, 2013, 2016, 2018 2020)
- Control of Electrical Power System (Undergraduate course, 2013, 2014)
- Power Electronics courses (Undergraduate course, 2016, 2017, 2018, 2019)
- Power System Analysis for Transient States (Postgraduate level, 2016)
- Electrical Power Quality (Postgraduate level, 2016, 2018, 2019)
- Power System Dynamics and Control (Postgraduate course, 2017, 2018)

CO-ADVISOR FOR THE FOLLOWING GRADUATE STUDENTS (CLEMSON UNIVERSITY, USA):

- Dan Suriyamongkol (PhD, Graduated December 2015)
- Oleg V. Sivov (MSc, Graduated May 2016)
- Joseph M. Lavalliere (MSc, Graduated May 2016)
- Ismael Esin (PhD)
- Sean Kantra (PhD)
- Shane Kimble (MSc)

Also I was helping other students of my supervisor's research group (more than 20 students).

UNDERGRADUATE GRADUATION PROJECTS

- Advisor: Impact of Wind Turbine on Power System Voltage and Dynamic Stability (2011-2012) – Tanta University. [One project]
- Advisor: Modeling and Simulation of Distributed Generation in Distribution System (2012-2013) – Kafrelsheikh University. [One project]
- Co-advisor: The Critical Infrastructure Resilience of the Distribution Grid (Clemson University, USA). 2014 and 2015. [Two projects]
- Advisor: Distribution System Operation Using Data Encryption (2016-2017) – Kafrelsheikh University. [One project_9 students]
- Advisor: Distribution System Automation using internet of things (IoT) (2018-2019) – Kafrelsheikh University. [One project_10 students]

- Advisor: Efficient Energy Management using internet of things (IoT) (2018-2019) – Kafrelsheikh University. [One project_10 students]
- Advisor: Building Energy Management using internet of things (IoT) (2019-2020) – Kafrelsheikh University. [One project_8 students]
- Advisor: Energy Management of Smart Homes using internet of things (IoT) and Blockchain (2019-2020) – Kafrelsheikh University. [One project_9 students]
- Advisor: Data Analytics of Photovoltaic (PV) System Using Artificial Intelligence (Deep Learning) (2019-2020) – Kafrelsheikh University. [One project_7 students]

RESEARCH PROJECTS:

- Nov 2014 – present: Clemson University Electric Power Research Association (CUEPRA).
 - 1- Power system situational awareness using PMU stream from utility
 - 2- Impact of wind power variation on the distance protection of MOV- protected series compensated transmission line.
- Nov. 2014 – present: Center for Advanced Power Engineering Research (CAPER), Clemson University.
 - 1- Critical Infrastructure Resilience of the Distribution Grid
 - 2- Analysis of PV integration in distribution system
- Nov 2013 – May 2014: NSF-supported project (USA):
Award Number: 1312260
Project Title: AIR Option 2: Research Alliance Situational Intelligence for Smart Grid Optimization and Intelligent Control

PROPOSALS AND PROGRESS REPORTS of Research PROJECTS:

- 1- Contributed in the following research projects proposals and progress reports (Clemson University, South Carolina, USA 2015 – 2016):
 - Proposal of: Interactive Distribution Grids Operation through Distributed Grid Intelligence and Customer-side Energy Management, Feb. 2015

- Proposal of: Decentralized frequency response and frequency control for distributed energy systems, March 2015
 - Progress report of: the Critical Infrastructure Resilience of the Distribution Grid 2015, 2016.
- 2- Updated the annual CUEPRA Assessment report 2014-2015 (Clemson University, South Carolina, USA):

PROFESSIONAL ACTIVITIES, WRKSHOPS AND MEMBERSHIPS:

Activities:

- **Chair and Coordinator of the Workshop: Application of Data Science, IoT, AI, and network Security in Electrical Engineering, October 8, 2019 – Electrical Engineering Department, Faculty of Engineering, Kafrelsheikh University.**
- Chair of a paper session in the 49th North American Power Symposium (NAPS2017), Morgantown, WV, USA, September 17-19, 2017.
- Attended a tour in the Duke energy Distribution Management System, Charlotte, NC, USA, March 9, 2016 as one of the Critical Infrastructure Resilience of the Distribution Grid project activities. In that tour, I saw the distribution operator's visualization console - what operators are shown, and what they look for to detect trouble.
- Co-chair of a paper session in the 47th North American Power Symposium (NAPS2015), Charlotte, NC, USA, October 4 - 6, 2015.
- Judged two paper sessions in the 47th North American Power Symposium (NAPS2015), Charlotte, NC, USA, October 4 – 6, 2015.
- Attended Clemson University Electric Power Research Association (CUEPRA) Fall meeting, CURI, Charleston, SC, USA, March 2015.
- Attended the Smart Metering Manufacturing Process tour at Itron Manufacturing Facility in Oconee, SC, USA, March 14, 2014.

Membership:

- Senior Member, IEEE. 2014 to present
- Member of the Egyptian Engineers Syndicate.

- Kafrelshikh University's Students IEEE Branch Counselor -2014.
- Member in a committee for preparing the graduate courses (Diploma, MSc and PhD): (1) graduate courses of the Electrical Engineering department, Kafrelsheikh University, Egypt. 2012-2013, 2014, and (2) general courses of the Faculty of Engineering, Kafrelsheikh University, Egypt
- Member of the quality assurance for accreditation committee, Faculty of Engineering, Kafrelsheikh University, Egypt. 2012-2013
- Member of the department board, Electrical Engineering department, Faculty of Engineering, Kafrelsheikh University, Egypt. (2013)
- Member of the Cultural and Research board, Faculty of Engineering, Kafrelsheikh University, Egypt. (2013)

AWARDS:

- Kafrelshikh University (Egypt) prize for the published research articles in international reviewed journals, 2017. (1) papers
- Kafrelshikh University (Egypt) prize for the published research articles in international reviewed journals, 2016. (2) papers
- Kafrelshikh University (Egypt) prize for the published research articles in international reviewed journals, 2015. (1) paper
- Kafrelshikh University (Egypt) prize for the published research articles in international reviewed journals, 2014. (1) paper

SELECTED PUBLICATIONS

Journal Papers:

1. Oleg V. Sivov, **Hany A. Abdelsalam** and Elham B. Makram, "Adaptive Setting of Distance Relay for MOV-Protected Series Compensated Line Considering Wind Power", Electric Power Systems Research Journal, Elsevier, vol 137, pp. 142-154, August 2016.
2. Abdelsalam A. Ahmed and **Hany A. Abdelsalam**, "Mitigation of Transformer Energizing Inrush Current Using Grid-Connected Photovoltaic System", International Journal of Electrical Power & Energy Systems (JEPE), Elsevier, vol 79, pp. 312-321, July 2016.

3. **Hany A. Abdelsalam** and Almoataz Y. Abdelaziz, “A New Strategy for Selection of Switching Instant to Reduce Transformer Inrush Current in a Single-Phase Grid-Connected PV System”, Electric Power Components and Systems Journal, Taylor & Francis Group, June 2015.
4. Zhanhe Liu, Xufeng Xu, **Hany A Abdelsalam**, Elham Makram, “Power System Harmonics Study for Unbalanced Microgrid System with PV Sources and Nonlinear Loads”, Journal of Power and Energy Engineering, May 2015.
5. **Hany A. Abdelsalam** and Almoataz Y. Abdelaziz, “A Brief Overview of Nanotechnology Applications in Smart Power Grid”, Electric Power Components and Systems Journal, Taylor & Francis Group, Vol. 42, No. 3-4, February 2014.
6. **Hany A. Abdelsalam**, A. Y. Abdelaziz,, “Use of Nanotechnology in Smart Power Grid”, Journal of Bionanoscience, Volume 7, Number 6, December 2013 , pp. 660-664.
7. **Hany A. Abdelsalam** and Almoataz Y. Abdelaziz, “Wide Area AVR Controller for Damping Oscillations Based on Inter-Area Modes”, Electric Power Components and Systems Journal, Taylor & Francis Group, April 2013.
8. K. M. Shebl, G. E. M. Aly, M. E. Abdel-Karim, and **H. A. Abdelsalam**,” DSP-BASED IMPLEMENTATION OF A SINGLE PHASE UPFC”, Mansoura Engineering Journal - June 2007, Vol. 32 No.2.
9. A. Attia, E. E. Abd Raboh, and **H. A. Abdelsalam**, “Voltage Stability Assessment Based On Transient Energy Function”, Mansoura Engineering Journal (MEJ), Mansoura , Egypt , Vol. 24, No. 2, june 1999.

Conference Papers:

10. Ahmed Diab, Abdelsalam A. Abdelsalam, and **Hany A. Abdelsalam**, “Fuzzy-based Adaptive Sliding Mode Control for a Direct-Driven PMSG Wind Energy System”, The 21th International Middle East Power Systems Conference, MEPCON'14, Cairo, Egypt, December 2019.
11. **Hany A. Abdelsalam** and Ibrahim Elashry, “A Secure Method to Form Microgrids for Distribution Feeder Resiliency Improvement”, 49th North American Power Symposium (NAPS2017) on Sept 17 - 19, 2017.

12. **Hany A. Abdelsalam**, Dan Suriyamongkol, and Elham B. Makram, “A TSA-Based Consideration to Design LQR Auxiliary Voltage Control of DFIG”, 49th North American Power Symposium (NAPS2017) on Sept 17 - 19, 2017.
13. Sean Kantra, **Hany A. Abdelsalam** and Elham B. Makram, “Application of PMU to Detect High Impedance Fault Using Statistical Analysis”, 2016 PES General Meeting, Boston, MA, USA, July 17 - 21, 2016.
14. Joseph M. Lavalliere, **Hany A. Abdelsalam** and Elham B. Makram, “Impact of PV on Peak Load Shaving on an Actual Distribution System”, 47th North American Power Symposium (NAPS2015) on October 4 - 6, 2015.
15. Dan Suriyamongkol, **Hany A. Abdelsalam** and Elham B. Makram, “Trajectory Sensitivity Analysis Application for Power System Security Assessment with Wind Generation”, 47th North American Power Symposium (NAPS2015) on October 4 - 6, 2015.
16. Oleg V. Sivov, **Hany A. Abdelsalam** and Elham B. Makram, “Operation of MOV-protected Series Compensator with Wind Power during Faults”, 47th North American Power Symposium (NAPS2015) on October 4 - 6, 2015.
17. **Hany A. Abdelsalam** and Almoataz Y. Abdelaziz, “Future of Smart Grid with the Development in Nanotechnology: An Overview”, The Sixteenth International Middle East Power Systems Conference, MEPCON’14, Cairo, Egypt, 23–25 December 2014.
18. **Hany A. Abdelsalam**, Abdelsalam A. Abdelsalam and Almoataz Y. Abdelaziz, “Utilizing the Grid-Connected Photovoltaic System for Reducing Transformer Inrush Current”, The Sixteenth International Middle East Power Systems Conference, MEPCON’14, Cairo, Egypt, 23–25 December 2014.
19. **Hany A. Abdelsalam** and G. Kumar Venayagamoorthy, “Equation Chapter 1 Section 1 Real-Time Tuning of Power System Stabilizer”, The Sixteenth International Middle East Power Systems Conference, MEPCON’14, Cairo, Egypt, 23–25 December 2014.
20. Paranietharan Arunagirinathan, **Hany A. Abdelsalam** and G. Kumar Venayagamoorthy, “Remote Power System Stabilizer Tuning Using Synchrophasor Data”, IEEE Symposium on Computational Intelligence Applications in Smart Grid (CIASG), Orlando, Florida, USA, Dec. 9-12, 2014.

21. **Hany A. Abdelsalam**, Almoataz Y. Abdelaziz and V. Mukherjee, "Optimal PMU Placement in a Distribution Network Considering Network Reconfiguration", IEEE International Conference on Circuit, Power and Computing Technologies (ICCPCT-2014), Tamilnadu, India, 20-21 March 2014.
22. **Hany A. Abdelsalam**, Almoataz Y. Abdelaziz, Reham A. Osama and Reham H. Salem, "Impact of Distribution System Reconfiguration on Optimal Placement of Phasor Measurement Units", IEEE Clemson University Power System Conference (PSC2014), Clemson, SC, USA, 11-14 March 2014.
23. **Hany A. Abdelsalam**, A. Y. Abdelaziz, R. A. Osama and B. K. Panigrahi, "Effect of Photovoltaic and Wind Power Variations in Distribution System Reconfiguration for Loss Reduction using Ant Colony Algorithm", 4th International Conference, SEMCCO 2013, Chennai, India, December 19-21, 2013, pp 504-514.
24. **Hany A. Abdelsalam** and Constantine J. Hatziadoniu, "A Robust Wide Area Controller of Multiple FACTS for Damping Oscillations in Multi-Area Power System Using the H^∞ Method", Power System Conference 2011 PSC11, March 15-18, 2011 at Clemson University, Clemson, SC, USA, 2011.
25. **H. A. Abdelsalam**, M. Abdelkrim, G. E. M. Aly, and K. M. Shebl, "Using UPFC for Power Flow Control and Dynamic Stability," Tenth International Middle-East Power Systems Conference (MEPCON'2005) Dec. 13-15, 2005, Port Fouad, Port Said, Egypt.
26. **H. A. Abdelsalam**, G.E. M. Aly, M. Abdelkrim and K.M. Shebl, "Optimal location of the Unified Power Flow Controller in electrical power system," Proc. of the Large Engineering Systems Conference on Power Engineering – LESCOPE-2004, Westin Nova Scotian, Canada, pp. 41-46, July 28-30, 2004.
27. A. Attia, and **H. A. Abdelsalam**, "An Efficient Algorithm To Assess Voltage Stability Based On Transient Energy Function", Six Middle-East Power System Conference (MEPCON'98), Mansoura, Egypt, pp 740-745, Dec. 1998.