Curriculum Vitae

Name: Hossam Eldin Abdallah Talaat, Ph.D.

Nationality: Egyptian

Cell. Phone: +20-1273677792

Current Position: Vice-Dean for Postgraduate Studies
Head of Electrical Engineering Department,
Professor of Electrical Power Systems,
Faculty of Engineering& Technology, Future University in Egypt.

On leave from: the Department of Electrical Power Engineering and Machines, Faculty of Engineering, Ain Shams University

Business Address:

Electrical Engineering Department, Faculty of Engineering& Technology, Future University in Egypt, End of South 90th Street, New Cairo, Egypt.

E-mail: hossam.eldeen@fue.edu.eg

hossam_talaat@eng.asu.edu.eg

Scholar Google Account

http://scholar.google.com/citations?hl=en&user=p3ewGZkAAAAJ

1. Degrees Held

- Ph.D. in Electrical Power Engineering, with the Highest Honor Degree (Trés Honorable), Thesis Title: "Design of an Adaptive Multivariable Stabilizer – Implementation on a laboratory dynamic model Constructed around a Micro-Alternator", University of Grenoble, France, September 1986.
- M.Sc. in Electrical Power Engineering and Machines, Thesis Title: "Optimal control of Transients in Power Systems", Ain Shams University, Cairo, Egypt, April 1980.
- B.Sc. in Electrical Power Engineering, Distinction with Honors, Ain Shams University, Cairo, Egypt, June 1975.

2. Employment

Dates	Position	Affiliation
• Oct. 2021-Present	Vice-Dean	Postgraduate and Research Affairs, Faculty of Engineering & Technology, Future University in Egypt
• Oct. 2018-Present	Head of Department	Department of Electrical Engineering, Faculty of Engineering & Technology, Future University in Egypt.
• June 2016-2020	Director	Quality Assurance Unit, Faculty of Engineering& Technology, Future University in Egypt.
• Feb. 2015-Present	Professor	Department of Electrical Engineering, Faculty of Engineering& Technology, Future University in Egypt.
• Jan 2015-Present	CEO & GM	UGEC (United Group for Engineering Consultancy) - consultancy office
• Aug. 2014-Feb. 2015	Emeritus Professor	Department of Electrical Power Engineering and Machines, Faculty of Engineering, Ain Shams University, Cairo, Egypt.
• Jan. 2013-Aug. 2014	Head of Department	Electrical Power Engineering and Machines Department, Faculty of Engineering, Ain Shams University, Cairo, Egypt.
• Oct. 2009-Sept. 2011	Director	Continuing Engineering Education center, Faculty of Engineering, Ain Shams University, Cairo, Egypt.
• Oct.2007-Jan. 2012	Professor	Department of Electrical Power Engineering and Machines, Faculty of Engineering, Ain Shams University, Cairo, Egypt.
• Sept. 2001-Oct. 2007	Professor	Electrical Engineering Department, College of Engineering, King Saud University, Riyadh, Kingdom of Saudi Arabia.
• Mar. 2000-Sept. 2001	Professor	Department of Electrical Power Engineering and Machines, Faculty of Engineering, Ain Shams University, Cairo, Egypt.
• Jun. 1995-Jan. 2000	Associate Professor	Department of Electrical Power Engineering and Machines, Faculty of Engineering, Ain Shams University, Cairo, Egypt.
• Sept. 1989 - Jun. 1995	Assistant Professor	Electrical Engineering Department, Faculty of Engineering, United Arab Emirates Univ., Al-Ain, United Arab Emirates.
• Jan. 1987 - Sept. 1989	Assistant Professor	Department of Electrical Power Engineering and Machines, Faculty of Engineering, Ain Shams University, Cairo, Egypt.
• Feb. 1982-Dec. 1986	Researcher	Laboratoire d'Electrotechnique, Ecole National Superieur d'Ingenieur Electricien de Grenoble, University of Grenoble, France.
• April 1980 - Feb. 1982	Teaching Assistant	Department of Electrical Power Engineering and Machines, Faculty of Engineering, Ain Shams University, Cairo, Egypt.
• Sept. 1975 - April 1980	Assistant	Department of Electrical Power Engineering and Machines, Faculty of Engineering, Ain Shams University, Cairo, Egypt.

3. Professional Membership

- A member of the Board of the Credit Hours Engineering Programs (CHEP) - Faculty of Engineering, Ain Shams University, Sept. 2012- 2015.
- A member of the Electrical Technical Committee, Saudi Buliding Code, July 2003- March 2006.
- A member of the Egyptian National board of Electricity and Energy Researches – Scientific Research and Technology Academy, 1999-2001. The board was composed of 27 members, selected from the Egyptian Universities and Electrical Utilities.
- A member of Planning of Electrical Energy Systems Section, Scientific Research and Technology Academy, 1999-2001.
- Chairman of the IEC Technical Committee No. 49 – IEC Egypt (Piezoelectric and Dielectric Devices for Frequency Control and Selection), 1999-2009.
- Chairman of the IEC Technical Committee No. 93 – IEC Egypt (Design Automation), 1999-2009.

4. Design of Industrial Power Projects

Supervisor of industrial projects of substation design and infrasrtructure in Egypt and Kingdom of Saudi Arabia. These projects have been conducted under the umbrella of UGEC (United Group for Engineering Consultancy) or by UGEC staff members.

- **Construction of New 66/11 KV COLANGEEL Substation EETC - EGYPT**

  Providing complete base and detailed engineering design services to the construction of the new 66/11 kV substation in west Mansora . DConstruction of New 33/13.8 KV S/S #7826 and Remote End S/S #8914, Hail area, Saudi Arabia; Providing complete base and detailed engineering design services to the construction of the new 33/1.8 kV substation in Hail area. The project also includes the necessary modifications/additions to the protection, control, communication, SCADA and associated equipment in Remote S/S #8914

- **Reinforcement of Substations #7803 & S/S #7804, Saudi Arabia**

  Providing complete detailed engineering design services to convert the existing 33 kV OHL feeder panels at 33/13.8 kV S/S #7804 to UG cable feeder panels with complete pilot wire differential protection scheme in accordance with SEC (COA) spec. 15-2-1 to be compatible with feeder panels at S/S #7803.

- **Replacement of 13.8 kV Fuji Panels at Substation S/S #8082, Saudi Arabia**

  Providing complete engineering design services to replace the existing 13.8 kV switchgears of 132/13.8 kV S/S #8082 with new switchgears with same configuration. The project als includes the necessary modifications/ additions to the protection, control, communication, SCADA and associated equipment.

- **Upgrading of Transformer Protection Relays in Jubail Area, Saudi Arabia**

  Providing complete engineering design services to Replacement of existing transformer protections set # 1 and set # 2 in the following substations with new panels comprising numerical protection relays. Relay sets #1 and #2 shall be mounted in separate panels
  a. Jubail North Substation 230/34.5 kV (#T781, #T771)
  b. Jubail South East Substation 230/115 kV (#T771, #T741, #T761, #T716)
  c. Jubail South West Substation 230/34.5 kV (#T771, #T731)
  The project also includes Modify, upgrade and/or replace the transient fault recorders, SOE, SCADA and annunciator systems as required to accommodate any additional channels that may needed for the new protection relay

- **Replacement of AVR Systems for Distribution Substations at Asir and Jazan Regions, Saudi Arabia**

  Providing the detailed engineering design to replace the existing AVR panel of 6 Sub-transmission substation in Southern Operating Area. The project also includes the necessary modifications/ additions to the protection, control, communication,

SCADA and associated equipment. a. ASIR HOSPITAL 33 / 13.8 kV Substation b. WADI BIN HASHBEL 33/13.8 kV Substation c. LAJWAN 33/13.8 kV Substation d. NAFIA 33/13.8 kV Substation e. Al-Soghra 33/13.8 kV Substation f. Al- Zafeer 33/13.8 kV Substation
➢ **Replacement of Existing 33 KV SWGR at S/S 7907 in Hail City.**
➢ **Replacement of 3x20 MVA,33/13.8KV S/S-7625 in Sajir, Dawadmi Area.**
➢ **Replacement of 33/13.8KV, 10 MVA Power Transformer at S/S# 7031,7062,7125 by 20 MVA, 33/13.8KV,YNyno Power Transformer**
➢ **Construction of new 33/13.8kV substation# SULAHI - ABHA -Southern Area- Saudi Arabia.**
➢ **Review 66kV base and detail schematics of Extension EL SHABAB S/S EETC - EGYPT**
➢ **Modification of 110 KV Bay AD05 for 380/110KV SAZ Substation.**

5. Electrical Safety and Codes/Regulations
أنشطة السلامة الكهربائية والأكواد واللوائح

- **A member of the Electrical Technical Committee, Saudi Buliding Code, July 2003-March 2006**

  Effective participation in the tasks of the committee including careful revising of the IEC 60364 regulations, and the addition of some requirements related to Saudi Arabia.

- **عضوية اللجنة الفنية الكهربائية لكود البناء السعودي في الفترة من يوليو 2003 حتى مارس 2006**

  حيث قمت بالمشاركة الفعالة في عدد من مهام اللجنة منها مراجعة مدققة للوائح IEC 60364 للنظر في مدى مناسبة تطبيقها في المملكة العربية السعودية

- **Preperation of 5 illustrative guides issued by the Saudi Ministry of Energy and Industry (as a consultant at AMAD) to simplify the application of the electrical requirements of the Saudi Buliding Code SBC, these are:**
  1) The general illustrative guide,
  2) The illustrative guide for the designer (in two parts).
  3) The illustrative guide for the contractor.
  4) The illustrative guide for the owner.
  5) The illustrative guide for the supervisor and inspector.

- قمت بإعداد عدد 5 أدلة استرشادية تم إصدارها بواسطة وزارة الطاقة والصناعة السعودية (بصفتي استشاري بمكتب آماد)، وذلك بغرض تبسيط تطبيق المتطلبات الكهربائية الخاصة بكود البناء السعودي، وهي كالتالي:
  1. الدليل الإرشادي العام.
  2. الدليل الإرشادي للمصمم (في جزئين).
  3. الدليل الإرشادي للمقاول.
  4. الدليل الإرشادي للمالك.
  5. الدليل الإرشادي للمشرف والمفتش.

- **Prepare the training materials and ppt presentations and supervise the delivery of a 5-days training program entitled "The electrical requirements of the Saudi Buliding Code SBC".** The program was delivered in Riyadh, Dammam, and Jeddah in the periods 1-5/9/2012,8-12/9/2012 and 15/19/2012 respectively.

- **قمت بالإشراف على تنفيذ برنامج تدريبي تحت عنوان "المتطلبات الكهربائية لكود البناء السعودي"، شاملا إعداد المادة التدريبية والعروض التقديمية بشكل كامل والمتابعة اليومية لتنفيذ البرنامج التدريبي.** وتم تنفيذ هذه الدورة في ثلاثة مدن سعودية: الرياض، الدمامن، جدة في الفترات 1-2012/9/5، 8-2012/9/12، 15-2012/6/19 على التوالي.

- **Participating in the 3rd Electrical Safety Experts Symposium, organized by AMAD on 5-6/11/2014 and. The participation was a paper entitled ” Downed Conductor Detection”.**
  - **المشـاركة في الندوة الثالثة لخبراء السـلامة الكهربائية، التي تم تنظيمها بواسـطة مكتب آماد في الفترة 5-6/11/2014 وبرعاية الشركة السعودية للكهرباء** وكانت المشاركة بعنوان "اكتشاف حالة سقوط موصل لحل مشكلة عدم تمكن أجهزة الحماية من اكتشاف هذا النوع من الأعطال.

- **Participating in the 4rd Electrical Safety Experts Symposium, organized by AMAD in the period 22-23/3/2017, by a paper entitled ”Arc fault protection avoiding electrical fires - Considerations for high-occupancy locations”.**
  - **المشاركة في الندوة الرابعة لخبراء السلامة الكهربائية، التي تم تنظيمها بواسطة مكتب آماد في الفترة 22-23/3/2017 وبرعاية الشـركة السـعودية للكهرباء** وكانت المشـاركة بعنوان "الحماية من أعطال القوس الكهربائي لتجنب الحرائق الكهربائية مع الاهتمام بالمواقع ذات الإشغال العالي"

6. Research Interests

- ***Power System Protection:***
  - Adaptive and Optimal Coordination of Overcurrent Relays.
  - Predictive Out-of-Step Relaying Using Fuzzy Classification.
  - Microprocessor-based Real Time Digital Simulator for Protective Relaying Testing.
  - Application of Artificial Intelligence Techniques in Fault Location determination.
  - Distance protection of six-phase transmission lines using fault induced high frequency transients and wavelets.
  - Protection of Series Compensated Transmission Lines using Artificial Neural Networks.

- ***Power System Control:***
  - Artificial Intellligence Based Load Frequency Control of Multi-Area Systems.
  - Optimal and Adaptive Load Frequency Control Using H^{∞} and Artificial Neural Networks.

- ***Power System Dynamics and Stability:***
  - Design of Optimal, Self-Tuning, Genetic Algorithm, Neural Networks and Fuzzy Power System Stabilizers.
  - Transient Security Assessment Using Pattern Recognition, Fuzzy Logic and Neural Networks.
  - Generator Tripping Emergency Control Strategy for Dynamic Security Enhancement Using Fuzzy Logic.

- ***Power Distribution Systems:***
  - New Technologies: Distributed Geneartion, Smart Grids and Microgrids.
  - Reconfiguration of Distribution Networks for Load Balancing Using Search Optimization Techniques.
  - Distribution System Service Restoration Using Expert Systems.

7. Research Activities

- Application of Artificial Intelligence techniques (Neural Networks, Knowledge-Based systems, Genetic Algorithms, and Fuzzy Logic) to Power System Analysis, Control, and Protection (Since 1992 till now).
- Application of Optimal and Adaptive Control techniques for the Enhancement of Power System Stability (Since 1976 till now).
- Implementation of computer, microprocessor and microcontroller–based systems to a number of laboratory setups for the purpose of control, measurements and protection (Since 1982 till now).
- Sharing a Joint research with the National Energy Control Center – Egyptian Electricity Authority, under the title "Developing New Strategies for Load Frequency Control of the Egyptian Power System with the Consideration of the Interconnection with Neibour Countries". This research includes the design of new control strategies based on optimal control and fuzzy logic and their application to the multi-area system comprising the Egyptian System and the systems interconnected to it (Libya and Jurdan Power Systems).
- Co-Supervising a Research Project with the Egyptian German Electrical Manufacturing Company "EGEMAC". The Objective was the Design and Manufacturing of a prototype of a Multi-Function Digital Relay based on a microcontroller. This project includes the design and implementation of hardware part (signal conditioning and interfacing circuits) and firmware part (written in assembly language).
- Sharing a Joint Research with Prof. Dr. El-Hawary, Vice Dean, Faculty of Engineering, DalTech, DALHOUSIE University, Halifax, Canada, under the title "Emergency Control and Security Assessment of Power Systems Using Fuzzy Logic Technique" (1997-2000).
- A Visiting professor to Faculty of Engineering, DalTech, DALHOUSIE University, Halifax, Nova Scotia, CANADA, during April / May 1998.
- The Pricipal Investigator of a research project sponsored by Faculty of Engineering – United Arab Emirates University under the title, " Fuzzy Logic Based Power System Dynamic Security Assessment" (1994).

8. Funded Research Projects

- ✓ Co-Investigator of the Research project No.4 of Saudi Aramco Chair in Electrical Power under the title: “Impact of Distributed Generation on Reliability and Power Quality of Distribution Systems”, Budget SR150,000 (2010-2012).
- ✓ Co-Investigator of the Research project No.1 of Saudi Aramco Chair in Electrical Power under the title: “Downed Conductors Detection”, Budget SR300,000 (2010-2012).
- ✓ Co-Investigator of the Research project of the Saudi Electricity Company # S0302 under the title" Integrated economy-security assessment of power systems", budget SR460,000 (2003-2005).
- ✓ Pricipal Investigator of the National research project # AR40 sponsored by PARCI, King Saud University, under the title “Design and Implementation of Fuzzy Logic Stabilizer for Improving Power System Stability", budget SR176,000 (2003-2007).
- ✓ Investigator of the Research Grant # 2/427 funded by the research center of the college of Engineeing, King Saud Unversity under the title “Adaptive Coordination of Overcurrent Relays”, budget SR30,000 (2006-2007).
- ✓ Investigator of the Research Grant # 38/422 funded by the Research Center of the College of Engineeing, King Saud Unversity under the title “Microcontroller-Based Intelligent Transmission Line Fault locator”, budget SR30,000 (2002-2005).
- ✓ Co-Investigator of the Research Grant# 12/425 funded by the Research Center of the College of Engineeing, King Saud Unversity under the title “Effects of Electrical Supply Voltage Dips in Process Industry Applications”, budget SR40,000 (2005-2007).

9. Evaluation of Research Projects

A. Awarded the Golden prize (first class) as a distiguished evaluator of the year 2004, from King Abdulaziz City for Science and Technology "KACST".

حاصل على الجائزة الذهبية (الفئة الأولى) للمقيم المتميز لعام 2004 – الإدارة العامة لمنح البحوث – مدينة الملك عبدالعزيز للعلوم والتقنية – المملكة العربية السعودية

B. Reviewer of the following Research Projects

sn	Research Project Title	Funding Body	Duration	Date
1	Modeling, Control and Simulation of Energy Storage Systems for Smart Grids from Dynamics Perspective	Qatar National Research Fund: NPRP12S-0318-190396	48 Months	2019-2023
2	Real Time Management of Comprehensive Resilience of Qatar's Power System with High PV Penetration	Qatar National Research Fund: NPRP12S-0307-190251	36 Months	2019-2022
3	Protection and Control of power system in presence of high penetration of renewable energy sources and FACTS elements	Qatar National Research Fund: NPRP11S-1125-170027	36 Months	2018-2021
4	Reconfiguration of the Egyptian Electrical Grid for Large Penetration Level of Renewable Energy Systems (Solar and Wind Energy) and Energy Storage	Competitive Funding Projects, Postgraduate, Research and Cultural Affairs Sector, Mansoura University	18 Months	2014-2015
5	Energy Efficiency Information and Awareness	National Energy Efficiency Programme, King Abdulaziz for Science and Technology (KACST), Saudi Arabia	10 Months	2005-2006
6	Optimal Planning of Transmission Systems	Research Grants Programs, King Abdulaziz for Science and Technology (KACST), Saudi Arabia	28 Months	2003-2005
7	Air-Conditioning Dynamic Load Modeling for Voltage Recovery Simulations for SEC-WR Network (Evaluation of Proposal only)	Research Grants Programs, King Abdulaziz for Science and Technology (KACST), Saudi Arabia	42 Months	**2005-2008**
8	Design of Energy Effiency Card for Appliances (Evaluation of Proposal only)	Energy Technologies Research Program, King Saud University	12 Months	**2007**

10.Evaluation of Research Work of Faculty Staff Applying for Promotion

A. A Member of 2 Promotion Committees (5-members), June 2015.

B. Reviewer for the following candidates

قام بتحكيم الأبحاث الخاصة ببعض أعضاء هيئة التدريس المتقدمين للترقية حسب البيان التالي

Target Position	University of Candidate	Promotion Committee	No. of Papers	Areas of papers	Date
Associate Professor	Mutah Univ., Jordan	Mutah Univ. promotion committee	7	- Power Quality - HVDC - Solar Energy	May 2019
Professor	External	Supreme Council of Universties, Egypt	3	Power system control	Apr. 2018
Associate Professor	Mansoura University	Supreme Council of Universties, Egypt	8	- Renewable Energy Systems - Power system Protection - Power Quality	Jul. 2017
Associate Professor	Mansoura University	Supreme Council of Universties, Egypt	8	- Renewable Energy Systems - Power system Analysis	Mar. 2017
Associate Professor	Assiut University	Supreme Council of Universties, Egypt	8	- Renewable Energy Systems	Oct. 2016
Associate Professor	Kafr Elsheikh University	Supreme Council of Universties, Egypt	8	- Renewable Energy Systems - Power System Control - Machines Control	Sep. 2016
Associate Professor	Benha Univeristy	Supreme Council of Universties, Egypt	8	Power System Control	Dec. 2015
Associate Professor	Port Said University, Egypt	Supreme Council of Universties, Egypt	8	- Power system stability - Power System Control - Machines Control	Apr. 2014
Professor	Ajman University of Science& Technology	Ajman University Promotion Committee	7	- MEMS Applications - Semiconductors Resistivity - LabView Model of Hybrid System	Apr. 2014
Associate Professor	University of Sadat City	Supreme Council of Universties, Egypt	10	- Machines Control - Power System Control - Renewable Energy Systems	Oct. 2013
Professor	Qassim University, Saudi Arabia	Academic Council, Saudi Arabia	8	- Power system stability assessment - Load Frequency Control - AVR and Governor Control - Induction motor speed Control - Control of Wind Generators	Oct. 2010

11.Technical Journals' Peer Reviewer

Peer Reviewer of more than 40 technical papers for the following international and regional journals:

- IEEE Transactions on Power Delivery.
- IET Proceedings - Generation, Transmission and Distribution.
- Electric Power Systems Research (EPSR).
- International Journal of Electrical Power and Energy Systems (IJEPES).
- International Journal of Emerging Electric Power Systems (IJEEPS).
- European Transactions on Electrical Power (ETEP) .
- Ain Shams Engineering Journal,Elsevier.
- Journal of King Saud University, Engineering Sciences.
- Kuwait Journal of Science & Engineering.
- Engineering Journal of the University of Qatar

12.Ph. D. Thesis Supervised

1-	High-Phase Order Power Transmission Lines Relaying Approach Based on the Wavelet Analysis of the Fault Generated Traveling Waves	June 2001
2-	Emergency Control of Synchronous Generators Using Artificial Intellligence	Mar 2000
3-	Artificial Intellligence Based Load Frequency Control of Multi-Area Systems	Oct 1999
4-	Distribution System Service Restoration Using Artificial Intellligence	Oct 1998

13. M.Sc. Thesis Supervised

1.	Optimal Design of Protection Schemes for Distribution Networks Including Distributed Generation	May 2015
2.	Design, Implementation and Experimental Investigation of an Artificial Intelligence Based Power System Stabilizer	Apr. 2015
3.	Local Islanding Detection Using Intelligent Techniques	Feb. 2015
4.	Protection of AC Feeding System for Electrified Railways	Jan. 2015
5.	Intelligent Management System for Motor Control Centers	Dec. 2014
6.	Smart Current Differential Protection for Transmission Lines	Aug. 2014
7.	Adaptive Distance Protection for Power Networks with FACTS	Jun. 2014
8.	Simulation, Analysis and Assessment of Voltage Sag (dip) in Distribution Networks	Feb. 2014
9.	Adaptive Protection Scheme For Distribution Network With Distributed Generation	Feb. 2014
10.	Maximum Power Point Tracking of Grid Connected Photovoltaic Using Artificial Neural Networks"	Jul. 2012
11.	Digital relay Performance During Power Quality Disturbances	Dec. 2010
12.	Distance Relaying under Arcing Fault Conditions	Sep. 2010
13.	Reconfiguration of Distribution Networks for Load Balancing Using Ant-Colony Optimization Technique	Jun. 2007
14.	Microprocessor-based Real Time Digital Simulator for Protective Relaying Testing	Jun. 2005
15.	Power Transmission System fault Classification using AI Technique	Sep. 2000
16.	Optimum load shedding Techniques for Power Systems	Jun. 2000
17.	GA Approach for Load Frequency Control of Power Systems	Sep. 1999
18.	Adaptive Coordination of Overcurrent Relays in Distribution Networks	Jul. 1999
19.	AI Based Approach for Protective Relaying Schemes	Aug. 1997
20.	Pattern Recognition Technique for Out-Of-Step Protection	Jan. 1990
21.	Methods of locating Short Circuit Positions in Electrical Power Networks	Jul. 1989

14. Membership of Conferences' Committees

- Conference Chairman of the 16th international middle east power systems conference, MEPCON'2014, Cairo, December 23-25, 2014.
- Chairman of Session PS3 (Power System Control) of 16th international middle east power systems conference, MEPCON'2014, Cairo, December 23-25, 2014.
- A member of the Scientific Committee of the Seventh Saudi Engineering Conference, Riyadh, December 2-5, 2007.
- Co-Chairman of Session R&D-EE2 (Research and Development in Electrical Engineering), Seventh Saudi Engineering Conference, Riyadh, December 2-5, 2007.
- A member of the Technical Committee of the Seventh international middle east power systems conference, MEPCON 2000, Cairo, March 28-30, 2000.
- Co-Chairman of Session #C4 (Application of AI in Protection Eng.), Seventh international middle east power systems conference, MEPCON 2000, Cairo, March 28-30, 2000.
- Vice Chairman, and a member of the Organization and Technical Committees of the Second Symposium on Electrical Energy in the UAE, Al-Ain, November 1991.
- Co-Chairman of Session #5 (Power System Analysis) of the Second Symposium on Electrical Energy in the UAE, Al-Ain, November 1991.

15.Conferences Attended

Date	Location	Theme	Organizer
05/11 – 06/11/2014	Riyadh- Saudi Arabia	Third Electrical Safety Symposium Experts	Ministry of Water& Electricity
23/12 - 25/12/2014	Cairo – EGYPT	16th International Middle East Power System Conference (MEPCON'2014)	Ain Shams University
10/6 - 14/6/2012	Istanbul, Turkey	PMAPS'2012: International Conference on Probabilistic Methods Applied to Power Systems	Istanbul Technical University
2/12 – 5/12/2007	Riyadh – KSA	Seventh Saudi Engineering Conference	King Saud University
28/3 - 30/3/2000	Cairo – EGYPT	Seventh International Middle East Power System Conference (MEPCON'2000)	Ain Shams University
29/8 – 2/9/1999	Budapest	Power Tech'99	IEEE
27-30 /9/1997	Cairo – EGYPT	Technical, Economical, and Environmental Aspects of Power Systems to Satisfy Electricity Needs in Africa	CIGRE - Egypt
6-7 / 5/ 1992	Dubai – UAE	Operation and Maintenance of Electrical Power Generators	CIGRE - GCC
17-19 / 11/ 1991	Al Ain - UAE	Interconnection of the UAE Power Networks	UAE Univ.
Jan. 1989	Giza - Egypt	First International Middle East Power System Conference (MEPCON'1989)	Cairo & Assiut University
July 1983	Copenhagen	Applied Control and Identification	IASTED
July 1982	Paris	Modelling and Simulation	AMSE

16.Exernal Reviewer of Academic Programs

	Program	Faculty/Institute	Date
1	Technical Diploma in Electrical Power Engineering Diploma in Electrical Power and Machines Engineer. Diploma in Power System Operation and Control Diploma in Power Electronic Applications M.Sc. in Electrical Power and Machines Engineering M.Eng. in Electrical Power and Machines Engineering Ph.D. in Electrical Power and Machines Engineering	Faculty of Engineering, Assiut University	June 2015
2	B.Sc. in Electrical Engineering and Control (Credit Hours system)	Shoubra Faculty of Engineering, Benha University	May 2015
3	B.Sc. in Electrical Power Engineering	International Academy for Engineering and Media Science	April 2015
4	M.Sc. in Renewable Energy Engineering M.Eng. in Renewable Energy Engineering	Faculty of Engineering, British University in Egypt	March 2015
5	Ph.D. in Electrical Power Engineering Ph.D. in Electrical Protection Engineering M.Sc. in Electrical Power Engineering M.Sc. in Electrical Protection Engineering	Faculty of Engineeing, Helwan University	October 2013
6	B.Sc. in Electrical Energy Engineering (Credit Hours system)	Faculty of Engineering, Cairo University	April 2010

17.Development of Engineering Education

- A member of the Evaluation of Industrial and Engineering Institutes Committee, 4th round, Ministry of Higher Education, April 2015 – Now.
- A member of the Academic Committee of King Saud University for developing a "Highly Competitive College of Engineering", 2006-2007.
- A member of the Academic Committee of the College of Engineering, King Saud University, 2002-2007.
- Chairman of the Academic Committtee of the Electrical Engineering Dept, King Saud University, 2002-2007. During this period, a new non-thesis master program has been introduced, thesis M.Sc. program and Ph.D. program have been renewed.
- Designing a set of experiments on the TQ power system simulator to serve understanding the concepts of power system operation, protection and control (2006-2007).
- Chairman of the departmental committee for developing the curriculum of the undergraduate studies of the Power Engineering Department, Faculty of Engineering, Ain Shams University, February-July 2000.
- A member of several committees at UAE University aiming to develop new curricula of the College of Engineering. These developments focused on the proper use of computers and digital equipment to enhance teaching methods and to encourage self-learning.
- Assisting in a workshop organized at UAE University under the theme " On Designing a New Engineering Curriculum".
- The representative of the Electrical Engineering Department in the committee of the College of Engineering- UAE University for designing M.Sc. study plan in energy Engineering.
- Assisting in developing the study plan of undergraduate and M.Sc. programs at Ain Shams University (1996-1998).
- Assisting in constructing two new Laboratories at Ain Shams University (during 1996-1998): Electrical Power Measurements Lab and Power System Analysis Lab. This includes citing the objectives, selection of the equipment and/or software, and testing of the equipment.

18.Short Courses delivered

1-	Advanced Power System Protection
2-	Power System Operation and Control
3-	Power Distribution Systems
4-	Power Flow Studies
5-	Power System Stability
6-	MATLAB and Simulink Application in Power System Analysis
7-	Power System Dynamics Using SimPowerSystem Toolbox
8-	PLC - Basic Course
9-	PLC - Advanced Course
10-	PLC - Specialised Training
11-	Spreadsheet Lotus 123
12-	Introduction to Microprocessors

19.Seminars

1-	HIF Detection: Literature Review and Experience with a Pilot Scheme
2-	Power System Simulators Powerful Teaching Tools
3-	Power System Analysis using PowerWorld Simulator
4-	Artificial Intelligence applications in Power System Operation and Control
5-	Artificial Intelligence applications in Power System Protection
6-	Power System Transient Security Assessment
7-	Recent Developments in Power System Protection

20.Industry Consultations

Enterprise	Description	Date
Saudi Aramco	Design, Implementation, and Testing of a Pilot Project for High Impedance Fault Detection system	2010 - 2012
The Egyptian German Electrical Manufacturing Co. (EGEMAC)	Design, Implementation and Testing of a prototype multi-function digital relay. The functions include: overcurrent (inverse and definite), thermal overload, unbalanced, fault recording.	July 99 – Jul. 2000
Faculty of Girls – Ain Shams Univ.	Modernizing of Distribution Network, Distribution Boards, and Distribution Transformers.	Sep 1998- Oct 1999
Helwan Company for metalic industries (Military Factory 63)	Study of upgrading and automating the Quadruple Rolling Mill Plant 1300. The study includes the detailed design of the distributed control system using PLC's and a supervisory computer.	Sep 1999
ADWIA- Egypt, 10th of Ramadan Project (factory of medicines)	Complete Design for Electrical work: Distribution Boards, Networks, Fire Alarm System, etc...	March - June 1998
Egyptian Electrical Cables Company	Investigating the problem of power failure to the production line of high and medium voltage cables by installing a disturbance analyzer	July 1998
International Company for cables	Design of PCB's for control circuits of power converters	May 1998
Ain Shams University	Examining the distribution boards and networks at various locations of the University to check if they comply with specifications (Committee of Inquiry)	January 1998
International Company for cables 10th of Ramadan	Study of Development and Upgrading of Production Line of Telephone Cables using PLC and supervisory computer	Sept. 1997
International Company for cables 10th of Ramadan	Study of Load Characteristics of the factory using a data acquisition system	Mar. 1997

21.Graduate Courses Taught

- Adavanced Power System Operation and Control
- Microprocessors Applications in Power System
- Microprocessor based Power System Protection
- Artificial Intelligence Applications in Power Systems
- Advanced Power System Protection
- Power System Dynamics

22.Undergraduate Courses Taught

- Power System Analysis
- Advanced Power System Analysis
- Power System Control
- Advanced Power System Control
- Power System Protection
- Power System Planning
- Fundamentals of Power Systems
- Electric Machinery
- Fundamentals of Electric Circuits
- Electric Circuit Analysis
- Electric Circuits and Machines (for Non-Electrical)
- Power System Lab
- Automatic Control Lab
- System Simulation
- Electrical Measuments and Digital Instruments
- Microprocessor and Its Application to Power System
- Classical Control Theory
- Advanced Control Systems
- Discrete-Time Control systems

Graduation Projects Supervised

- Earthing of LV Systems
- Design of PV Generation System for Supplying a Smart Village
- Home Energy Management Systems
- Smart Grid

- Power Transformer Protection based on Artificial Neural Network
- Optimal Coordination of Overcurrent Relays
- Design and Implementation of a SCADA System for the Power System simulator
- Optimal Operation of a Power System using PowerWorld Simulator
- Distribution Automation system
- Flexible AC Transmission Systems
- Voltage Sag Analysis and Mitigation
- Design and Implementation of a Digital Overcurrent Relay
- Computer Control of SVC for Enhanced Performance of Transmission Line
- Design and Implementation of a Power System Simulator
- Design and Implementation of Programmable Load Simulator
- An Intelligent PCB Drilling Machine
- Supervisory Control and Data Acquisition "SCADA" of Power System Simulator
- Fuzzy Logic based Temperature Control
- Dynamic Stability of a Simplified Power System
- Graphical Interface Package for Power System Analysis

23.University Activities

- Director of Continuing Engineering Education Center, 2009-2011.
- Chairman of Alumni Committee – Faculty of Engineering, Ain Shams University, 2008-2009.
- Coordinator of the Power Group – Electrical Engineering Department – College of Engineering – King Saud University, 2001-2007.
- Member of the Students Activities Advisory Committee, 2006-2007.
- Chairman of the students' activities Committee at Faculty of Engineering, UAE University, 1992-1993.
- Supervisor of the Engineering Association for Students, Faculty of Engineering, UAE University, 1992-1993.
- Supervisor of the Electronic Engineering Association for Students (Girls), Faculty of Engineering, UAE University, 1992-1993.
- Member of the Society Services Committee, Faculty of Engineering, UAE University, 1991-1992.
- Member of the Training and Journey Committee, Faculty of Engineering, UAE University, 1991-1992.

24.Publications

Journal Papers

1) Shaheen M.A.M.; Hasanien H.M.; Mekhamer S.F.; Talaat H.E.A., “A chaos game optimization algorithm-based optimal control strategy for performance enhancement of offshore wind farms”, Renewable Energy Focus, Vol. 49 , Art. 100578, 10.1016/j.ref.2024.100578, 2024.
2) Shaheen M.A.M.; Hasanien H.M.; Mekhamer S.F.; Talaat H.E.A., “Walrus optimizer-based optimal fractional order PID control for performance enhancement of offshore wind farms”, Scientific Reports14, Issue 1, 10.1038/s41598-024-67581-x, 2024.
3) Eltohamy M.S.; Abdel Moteleb M.S.; Talaat H.E.A.; Mekhamer S.F.; Omran W.A., “ A novel approach for power ramps classification in wind generation”, Scientific Reports, Vol. 13, Issue 1, 10.1038/s41598-023-48443-4, 2023.
4) Shaheen M.A.M.; Hasanien H.M.; Mekhamer S.F.; Talaat H.E.A., “Various Control Techniques for Converter-Based DC Power Transmission in Offshore Wind Systems: A Comprehensive Review”, 2023 24th International Middle East Power System Conference, MEPCON 2023.
5) Asim A.M.; Ahmed O.A.; Ibrahim A.M.; El-Khattam W.A.; Talaat H.E., “A Novel Dynamic Li-Ion Battery Model for the Aggregated Charging of EVs”, World Electric Vehicle Journal, Vol. 14, Issue 12, 10.3390/wevj14120336, 2023.
6) BNF Fanos, MH Soliman, HEA Talaat, MA Attia, “Modern Active Voltage Control in Distribution Networks, including Distributed Generation, Using the Hardware-in-the-Loop Technique,” Symmetry, Vol. 15, Issue 1, 10.3390/sym15010090, 2023.
7) Ibrahim N.M.A.; Talaat H.E.A.; Shaheen A.M.; Hemade B.A., “Optimization of Power System Stabilizers Using Proportional-Integral-Derivative Controller-Based Antlion Algorithm: Experimental Validation via Electronics Environment”, Sustainability (Switzerland), Vol. 15, Issue 11, 10.3390/su15118966, 2023
8) Eltohamy M.S.; Moteleb M.S.A.; Hossam Talaat E.A.; Mekhamer S.F.; Omran W.A., “Impacts of High Wind Penetration Levels on Estimating and Allocating Reserve Needs”, 2023 24th International Middle East Power System Conference, MEPCON 2023.
9) Eltohamy M.S.; Moteleb M.S.A.; Hossam Talaat E.A.; Mekhamer S.F.; Omran W.A., “Characterization of Short-Term Wind Power Variations and Estimation of Reserve Requirements for High Wind Generation Shares”, Indonesian Journal of Electrical Engineering and Informatics, Vol. 11, Issue 4, 10.52549/ijeei.v11i4.4930, 2023.
10) Naguib M.; Omran W.A.; Talaat H.E.A., “Performance Enhancement of Distribution Systems via Distribution Network Reconfiguration and Distributed Generator Allocation Considering Uncertain Environment”, Journal of Modern Power Systems and Clean Energy, Vol. 10, Issue 3, 10.35833/MPCE.2020.000333, 2022.
11) BA Hemad, NMA Ibrahim, SA Fayad, HEA Talaat, “Hierarchical Clustering-Based Framework for Interconnected Power System Contingency Analysis”, Energies 15 (15), 5631, 10.3390/en15155631, 2022.

12) MS Eltohamy, HEA Talaat, MSA Moteleb, SF Mekhamer, WA Omran, “A Probabilistic Methodology for Estimating Reserve Requirement and Optimizing Its Components in Systems With High Wind Penetration,” IEEE Access 10, 106148-106168, 10.1109/ACCESS.2022 .3211305, 2022.

13) MS Eltohamy, MSA Moteleb, HEA Talaat, SF Mekhamer, WA Omran, “A novel approach for the power ramping metrics”, Indonesian Journal of Electrical Engineering and Informatics (IJEEI) 9 (2), 313-333, 2021.

14) M EL-Azab, WA Omran, SF Mekhamer, HEA Talaat, “Congestion management of power systems by optimizing grid topology and using dynamic thermal rating”, Electric Power Systems Research 199, 107433, 2021.

15) M Eltohamy, M Moteleb, H Talaat, S Mekhemer, W Omran, “Power system flexibility metrics evaluation and power ramping analysis for high variable renewable generation shares” EAI Endorsed Transactions on Energy Web 8 (31), 2021.

16) MH Soliman, HEA Talaat, MA Attia, “Power system frequency control enhancement by optimization of wind energy control system”, Ain Shams Engineering Journal 12 (4), 3711-3723, 2021.

17) MMH Elroby, SF Mekhamer, HEA Talaat, MAM Hassan, “FACTS allocation considering loads uncertainty, steady state operation constraints, and dynamic operation constraints”, Int. J. Electr. Comput. Eng 11 (2), 945-955, 2021.

18) SM Sadek, WA Omran, MAM Hassan, HEA Talaat, “Data driven stochastic energy management for isolated microgrids based on generative adversarial networks considering reactive power capabilities of distributed energy”, IEEE Access 9, 5397-5411, 2020.

19) SM Sadek, WA Omran, MAM Hassan, HEA Talaat, “Adaptive robust energy management for isolated microgrids considering reactive power capabilities of distributed energy resources and reactive power costs”, Electric Power Systems Research 199, 107375, 2021.

20) RR Sorial, MH Soliman, HM Hasanien, HEA Talaat, “A vector controlled drive system for electrically power assisted steering using hall-effect sensors”, IEEE Access 9, 116485-116499, 2021.

21) M Said Ahmed Farag Yahia, WA Omran, HEA Talaat, “A decentralized charging strategy for plug-in-electric vehicles in parking lots”, Journal of Al-Azhar University Engineering Sector 16 (58), 34-48, 2021.

22) Elroby M.M.H.; Mekhamer S.F.; Talaat H.E.A.; Moustafa. Hassan M.A., “Population based optimization algorithms improvement using the predictive particles”, International Journal of Electrical and Computer Engineering, Vol. 11, Issue 2, pp. 945-955, 10.11591/ijece.v11i2, 2021.

23) SM Sadek, WA Omran, MA Moustafa, HEA Talaat, “Day-Ahead Energy Management for Isolated Microgrids Considering Reactive Power Capabilities of Distributed Energy Resources

and Reactive Power Costs", International Journal of Renewable Energy Research (IJRER) 10 (4), 1857-1868, 2020.

24) M El-Azab, WA Omran, SF Mekhamer, HEA Talaat, "Allocation of FACTS devices using a probabilistic multi-objective approach incorporating various sources of uncertainty and dynamic line rating", IEEE Access 8, 167647-167664, 2020.

25) M.M.H. Elroby, S.F. Mekhamer, Hossam E.A. Talaat, M.A. Moustafa, "Generalized optimal placement of PMUs considering power system observability, communication infrastructure, and quality of service requirements", International Journal of Electrical and Computer Engineering, V. 10, N. 3, P. 2824, IAES, 2020.

26) M. El-Azab, W.A. Omran, S.F. Mekhamer, Hossam E.A. Talaat, "A probabilistic multi-objective approach for FACTS devices allocation with different levels of wind penetration under uncertainties and load correlation", International Journal of Electrical and Computer Engineering, V. 10, N. 4, P. 3898, IAES, 2020.

27) M.S. Eltohamy, M.S. Abdel-Moteleb, Hossam E.A. Talaat, S.F. Mekhemar, W.A. Omran, "Wind Power Ramps Analysis for High Shares of Variable Renewable Generation in Power Systems", Indonesian Journal of Electrical Engineering and Informatics (IJEEI), V. 8, N. 2, PP. 256-272, 2020.

28) Bassam A. Hemade, Hamed A. Ibrahim, Hossam E.A. Talaat, "Steady-state Security Assessment Based on K-Means Clustering Algorithm and Phasor Measurement Units", Recent Advances in Electrical & Electronic Engineering, V. 13, N. 4, PP. 559-570, Bentham Science Publishers, 2020.

29) Bassam A. Hemade, Hamed A. Ibrahim, Hossam E.A. Talaat, "Conceptual Analysis of Different Clustering Techniques for Static Security Investigation", International Journal of Intelligent Systems and Applications, V. 10, N. 2, PP. 25, Modern Education and Computer Science Press, 2019.

30) Nader M.A. Ibrahim, Basem E. Elnaghi, Hamed A. Ibrahim, Hossam E.A. Talaat, "Modified Particle Swarm Optimization Based on Lead-Lag Power System Stabilizer for Improve Stability in Multi-Machine Power System", International Journal on Electrical Engineering and Informatics, V. 11, N. 1, PP. 161-181, School of Electrical Engineering and Informatics, 2019.

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32) Nader M.A. Ibrahim, Basem E. Elnaghi, Hamed A. Ibrahim, Hossam E.A. Talaat, "Performance assessment of bacterial foraging based power system stabilizer in multi-machine power system", International Journal of Intelligent Systems and Applications, V. 11, N. 7, P. 43, Modern Education and Computer Science Press, 2019.

33) Mohamed A.M. Shaheen, Hany M. Hasanien, S.F. Mekhamer, Hossam E.A. Talaat, "Optimal power flow of power systems including distributed generation units using sunflower optimization algorithm", IEEE Access, V. 7, PP. 109289-109300, IEEE, 2019.

34) M.M.H. Elroby, S.F. Mekhamer, Hossam E.A. Talaat, M.A. Moustafa, "Optimal placement of phasor measurement units considering islanding contingency, communication infrastructure, and quality of service", Heliyon, V. 5, N. 10, P. e02538, Elsevier, 2019.

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37) Amr M. Ibrahim, Noha M. Bastawy, Hossam E. Talaat, " An Adaptive Hybrid Approach for Protection of Transmission Line Compensated with UPFC", Journal of Science and Engineering, Vol. 07 (01), 2016, pp. 034-049.

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40) Noha M. Bastawy, Hossam E.A. Talaat, Amr M. Ibrahim, "Fault Detection and Classification Based on DWT and Modern Approaches for T.L Compensated with FACTS", American Journal of Electrical Power and Energy Systems, Vol. 2, No. 6, 2013, pp. 149-155.

41) Hossam E.A. Talaat and Essam Al-Ammar, “Allocation and Sizing of Distributed Generation Units for Minimizing Distribution Network Losses Using Genetic Algorithms”, Int. Journal on Power System Optimization, January-June 2012, Volume 4, No. 1, pp. 1– 7, International Science Press.

42) Hossam E.A. Talaat, A. Alsulaiman and A. Abdennour, “Design and Experimental Investigation of a Decentralized GA-Optimized Neuro-Fuzzy Power System Stabilizer”, International Journal of Electrical Power and Energy Systems, Vol. 32, Issue 7, Sept. 2010, pp. 751-759.

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44) AA Hajjar, MM Mansour, HA Talaat, "High-phase order power transmission lines relaying approach based on the wavelet analysis of the fault generated traveling waves", International Journal of Electrical Power and Energy Systems, Vol. 32 (7), pp. 751-759.

45) E.A. Mohamed, Hossam E.A. Talaat and E.A. Khamis, “An ANN Based Fault Diagnosis System for Tapped HV/EHV Power Transmission Lines”, JKAU: Eng. Sci., Vol. 20 No.1, pp: 3-28, 2009.

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47) A.Y. Abdelaziz, A.M. Ibrahim, M.M. Mansour and Hossam E.A. Talaat, “Modern Approaches for Protection of Series Compensated Transmission Lines”, *Electric Power Systems Research*, Vol. 75, 2005, pp. 85-98.

48) A.Y. Abdelaziz, Y.G. Mostafa, A.M. Ibrahim, M.M. Mansour and Hossam E.A. Talaat, “Protection of Series Compensated Transmission Lines using Travelling wave”, *Scientific Bulletin, Faculty of Engineering*, *Ain Shams University*, Vol. 39, No. 1, March 2004.

49) Hossam Attia, F. Hashiesh, M.M. Mansour, Hossam E.A. Talaat, H. Mashaly, “A fault location estimation approach using synchronized sampling”, Ain Shams University Scientific Bulletin, Sept. 30th, 2003.

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51) A.Y. Abdelaziz, Hossam E.A. Talaat, A.I. Nosseir, Ammar A. Hajjar, An adaptive protection scheme for optimal coordination of overcurrent relays, *Electric Power Systems Research*, Vol. 61, No. 1, 2002, pp. 1-9.

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53) Hossam E.A. Talaat, “ Adaptive Load Frequency Control Using Neural Network-Based Inverse Controller”, *Scientific Bulletin, Faculty of Engineering, Ain Shams Univ.*, Vol. 34, No. 4, Dec. 1999, part II.

54) Hossam E.A. Talaat, A.Y. Abdelaziz, A.I. Nosseir, A.A. Hajjar, “ Optimal Coordination of Directional Overcurrent Relays Using Linear Programming: An Enhanced Formulation”, *Scientific Bulletin, Faculty of Engineering, Ain Shams Univ*., Vol. 34, No. 4, Dec. 1999, part II.

55) Hossam E.A. Talaat, M.A. El-Sharkawy, H.E. Moustafa, K. Yassin, “ Robust Load-Frequency Control Based on H∞ - Optimal Control”, *Scientific Bulletin, Faculty of Engineering, Ain Shams Univ*., , Vol. 34, No. 2, June 1999, part II, pp.201-214.

56) Hossam E.A. Talaat, "Predictive Out-of-Step Relaying Using Fuzzy Rule-Based Classification", *Electric Power Systems Research*, Vol.48, No.3, 1998, pp. 143-149.

57) A.M. Sharaf, R.M. El-Sharkawy, Hossam E.A. Talaat, M.A.L. Badr, "Fault Detection on Radial and Meshed Transmission Systems Using Hilbert Transform", *Electric Power Systems Research*, Vol. 41, 1997,pp. 185-190.

58) Hossam E.A. Talaat, R.M. El-Sharkawy, M.M. Mansour, M.A.L. Badr, "A Knowledge-Based System for the Coordination of Distance Relays in Meshed Power Systems", *Scientific Bulletin, Faculty of Engineering, Ain Shams Univ*., , Vol. 32, No. 4, Dec. 1997, part II, pp. 479-493.

59) A.M. El-Arabaty, Hossam E.A. Talaat, M.M. Mansour, and A.Y. Abd-Elaziz, "Out- Of- Step Detection Based On Pattern Recognition", *International Journal of Electrical Power & Energy Systems*, Vol.16, No.4, August 1994.

60) Hossam E.A. Talaat, and A.D. El-Koshairy, "Analysis and Practical Aspects of Neutralizing Rotor Leakage and Magnetizing Reactances of a 3-phase Induction Motor", *Dirasat Hundasia, Faculty of Engineering, United Arab Emirates Univ*., Vol.6, No.6, Al-Ain, UAE, December 1993.

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Conference Papers

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65) Mohamed A.M. Shaheen, Hany M. Hasanien, S.F. Mekhamer, Hossam E.A. Talaat, "Optimal Power Flow of Power Systems Using Hybrid Firefly and Particle Swarm Optimization Technique", 21st International Middle East Power Systems Conference (MEPCON), PP. 232-237, 2019.

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