



الأكاديمية العربية للعلوم والتكنولوجيا والنقل البحري

Arab Academy for Science, Technology & Maritime Transport

## CURRICULUM VITA

# Yasser Gaber Abdel-Razek Dessouky



## PERSONAL DATA

- Date of birth** : 23 / 3 /1969
- Nationality** : Egyptian
- Gender** : Male
- Telephone** : Home (+2 03 – 58 46 300)  
Mobile (+2 0100 – 6030 – 790)  
Work: Direct Line (+2 03 561 1818)  
AASTMT (+2 03 5622388/66), Ext 1069  
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- Current Job** : Dean of Scientific Research and Innovation,  
[Arab Academy for Science, Technology and Maritime Transport](#) (AASTMT).
- E-mail** : [ygdessouky@yahoo.edu](mailto:ygdessouky@yahoo.edu) and [ygd@aast.edu](mailto:ygd@aast.edu)
- Web Page** : [Home Page of Professor Yasser Gaber Dessouky](#)
- Home Address** : 16 Ibrahim Nossier Street, Flat 705, Loran, Alexandria, Egypt
- Correspondence** : Dean of Scientific Research and Innovation, Arab Academy for Science, Technology and Maritime Transport (AASTMT), Abu Kir Campus, P.O.Box:1029, Miami, Alexandria, Egypt.
- Marital Status** : Married and having two boys and one girl.
- English skills** : Excellent, got the Ph.D. degree from a British University.
- References** : Professor Ismail Abdel Ghafar Ismail Farag, President of the AASTMT  
E-mail: [ismail.ghafar@aast.edu](mailto:ismail.ghafar@aast.edu)
- Hobbies** : Sporting (Football, Tennis, Squash and Swimming), and Reading.

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## EDUCATION

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- Ph.D. degree from Heriot-Watt University, United Kingdom in July 1998.
- M.Sc. degree in Electrical Engineering from Alexandria University in September 1993.
- B.Sc. degree with the merit of **Distinction** in Electrical Engineering from Faculty of Engineering, Alexandria University in July 1991.

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## PROFESSION AND TEACHING

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### PROFESSION

- Dean of Scientific Research and Innovation, Arab Academy for Science, Technology and Maritime Transport, AASTMT, from May 2014 till now.
- Director of Scientific Research and Innovation, Arab Academy for Science, Technology and Maritime Transport, AASTMT, from July 2013 till May 2104.
- Head of Technology, Innovation and Commercialization Office (TICO), Arab Academy for Science, Technology and Maritime Transport, AASTMT, from July 2013 till now.
- Program Chair, Electrical and Control Engineering Department, College of Engineering and Technology, Arab Academy for Science, Technology and Maritime Transport, AASTMT, from February 2011 till September 2012.
- Vice Dean for International Affairs, College of Engineering and Technology, Arab Academy for Science, Technology and Maritime Transport, from August 2008 till September 2012.
- Professor of Power Electronics and Machines Drives, Department of Electrical and Control Engineering, Arab Academy for Science, Technology and Maritime Transport, Since 2006.
- Assistant Professor in the Department of Electrical and Control Engineering of the Arab Academy for Science, Technology and Maritime Transport in July 2002.
- Spent one year in the Campus of the Arab Academy for Science, Technology and Maritime Transport in Qatar in the Department of Computer Science and Technology in October 2001.
- Appointed in the Department of Electrical and Control Engineering of the Arab Academy for Science, Technology and Maritime Transport as a Graduate Teaching Assistant (GTA) in July 1991, and appointed as a lecturer in 1998.

### TEACHING

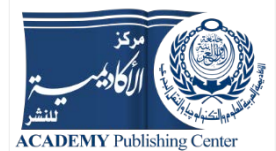
- Teaching postgraduate courses in microprocessor based process control, digital circuit design, vector control of electric machines, electric drives, power electronics, generalized machine theory, dynamics of electric machines, special machines, renewable energy resources, in the AASTMT since 1998 till present.

- Teaching undergraduate courses in electrical circuits, electrical measurements and instrumentation, electrical machines, machine drives, special machines, power electronics and classical and advanced automatic control in the AASTMT since 1998 till present.
- Part time teaching: Electric Machines in Faculty of Engineering, Alexandria University, 2011/2012.
- Teaching courses in numerical analysis, artificial neural network and microprocessor control, in the AASTMT in Qatar, in 2001 for one year.
- Teaching Assistant (TA) for undergraduate courses in digital logic design, electronic circuits courses and electrical machines, in Heriot Watt University of UK, from 1994 to 1997.
- Teaching Assistant for undergraduate courses electrical machines, electrical power, electrical circuits and automatic control, in the AASTMT, from 1991 to 1994.

## ACADEMIC EXPERIENCE AND ACTIVITES

### ACADEMIC EXPERIENCE

- Editor in Chief for the Journal of [Renewable Energy and Sustainable Development](#).  
pISSN: **2356-8518** and eISSN: **2356-8569**
- One of the main founders of [Academy Publishing Center](#)  
APC of AASTMT.
- The founder of [AASTMT annual grant](#) for supporting scientific research in the AASTMT.
- Renewable Energy Expert in the [ESCWA](#) (Economic and Social Commission for Western Asia) of the United Nation since October 2014.
- A member of the Steering Committee of International Associated Laboratory for Mediterranean collaborations on Renewable Energies and Sustainable Building, **HyRES Laboratory**, France.
- AASTMT coordinator for the QS University Rankings in 2015-2016.
- Chairman of Energy Technology and Sustainable Development Track:  
2<sup>nd</sup> International Conference on Industry Academia Collaboration, IAC 2015, 7-9 April 2015, Exhibition Hall, Cairo, Egypt.
- Chairman of the (UK-Egypt enhanced research networks in renewable energy to support economic development) workshop, 22-15 February 2015, AASTMT, Alexandria Campus, Alexandria, Egypt.
- The AASTMT Legal Entity Appointed Representative (**LEAR**) in the European Commission, Research Executive Agency, Brussels, Belgium since October 2014.



- The AASTMT representative in the Egyptian Science, Technology and Innovation Observatory, ESTIO of the Ministry of the Scientific Research since July 2014.
- Completed a distance learning training course ND08b-2013 by European Patent Office, titled 'Pre-filing searches and consultancy services for local IP Centers', 4 Nov. – 20 Dec. 2013.
- The AASTMT representative in the [DeserTech University Network](#), DUN, Hamburg Germany (Registration number: VR 21658/ Hamburg-Germany) since Jan 2013.
- Scientific Committee member of the [MedRE' Cup](#) (Mediterranean Renewable Energy Cup: Challenges to promote of the use and the exploitation of renewable energies) organized by the Mediterranean Network of the Schools of Engineers, RMEI in France in December 2012.
- The AASTMT representative in the [Research, Development and Innovation Network](#), RDIN, Ministry of Higher Education and Scientific Research since May 2012.
- Chairman of the '[Development of Clean Energy Resources](#)', workshop in May 2012 in the AASTMT, Egypt in May 2012.
- Representative of the Egyptian Network of the Institute of Engineering and Technology, BEIE/IET Alexandria Subsection since March 2012.
- The Chair of Industry Relations Subcommittee, Institute of Electrical and Electronics Engineers, IEEE Egypt Alexandria Subsection since January 2012.
- Chairman of the '[Future of Hybrid Technology for Automotive Application](#)', workshop sponsored by IEEE, IET and NSF in the AASTMT, Egypt in January 2011.
- General Secretary of the 'Adapting Cities for Climate Change' workshop, 9<sup>th</sup> March 2010 hosted by the AASTMT and the involved parties were The British Foreign Office, Chatham House and Chevening, in March 2010.
- During **ABET** accreditation, Sept. 2009 - July 2011, the Liaison (team leader) of the College of Engineering and Technology in the AASMT, for seven programs where they have been full-accredited for six years.

### **INTERNATIONAL STEERING AND SCIENTIFIC COMMITTEE MEMBERSHIP**

- Organizing Committee member of the International Conference on Renewable Energy (INCORE2016) in Sharm El-sheikh, Egypt February 3-6, 2016.
- International Steering Committee member for MED GREEN FORUM, Florence, Italy, 26-28 August 2015.
- Program Committee member of the International Workshop on PV Cell Systems organized conjointly with the Mediterranean Conference on Information & Communication Technologies (MedICT'15), 7-9 May 2015, Mohamed Premier University, Oujda, Morocco.

- International Program Committee member for the MGEF 2015: Mediterranean Green Energy Forum Conferences on March 26-28, 2015 in Marrakech, Morocco.
- Session Chair in the 16<sup>th</sup> International Middle East Power Systems Conference, MEPCON'14, Ain Shams University, 23 - 25 December, 2014 in Cairo, Egypt.
- International Advisory Committee member of the [3<sup>rd</sup> International Conference on Information Processing and Electrical Engineering](#) (ICIPEE'14), University of TEBESSA, Algeria, November 2014.
- International Steering Committee member for [16<sup>th</sup> International Power Electronics, Motion Control Conference, Exposition](#), PEMC, in Antalya, Turkey on 17-19 September, 2014.
- A General Committee Chair of the [International Symposium on Smart Sensors and Information Engineering](#) (ISSSIE 2014) on 16-17 August, 2014 in Dalian, China.
- Scientific Committee member for the International Conference for Industry Academia Collaboration 2014, IAC 2014, Cairo 3-5 March 2014.
- General secretary of the '[Global Climate Change, Biodiversity and Sustainability](#): Challenges and Opportunities – Focused on The Arab MENA Region and Euro-med' workshop, sponsored by the AASTMT, the Smithsonian Conservation Biology Institute (Virginia, USA) and the University of Prince Edward Island (PEI, Canada), April 15-18, 2013, Alexandria, Egypt.
- A Session Chairman in The 15<sup>th</sup> International Middle East Power Systems Conference, MEPCON2012, 23-25 December 2012, Alexandria, Egypt.
- International Technical Program Committee member of the [2<sup>nd</sup> International Conference on Communications, Computing and Control Applications](#) (CCCA'12), December 6-8, 2012, in Marseilles, France.
- Scientific Committee member for 'Towards a smart solution for water, energy saving and ECO housing development' workshop sponsored by the AASTMT, Academy of Scientific Research and Technology and Egyptian Green Building Council, 22 November 2012, Alexandria, Egypt.
- Local Organizing Committee member for the International Conference on '[Coastal Zone Management of River Deltas and Low Land Coastlines](#)', March 6-10, 2010, organized by Coastal Research Institute (CoRI) and the AASTMT, Alexandria, Egypt, in March 2010.
- Session chairman in International Conference for Computer Technology and Applications in ICCTA08, ICCAT09 and ICCAT11 conferences, Alexandria, Egypt in 2008, 2009 and 2011.

### **EXTERNAL EXAMINER**

- External examiner for a Ph.D. student in Universidad de Valladolid, Spain, in Jan 2016.
- External examiner for a Ph.D. student in University of Aix-Marseilles, France, in Nov 2015.
- External examiner for a Ph.D. student in Strathclyde University UK, in October 2009.

- External examiner for M.Sc. students in:
  - Arab Academy for Science, Technology and Maritime Transport, Cairo Campus, Egypt 2012.
  - Alexandria University 2011, Egypt.
- External examiner for many B.Sc. graduation projects since 1998, in:
  - Alexandria University, Egypt.
  - Ain Shams University, Egypt.
  - Tanta University, Egypt.
  - Arab Academy for Science, Technology and maritime Transport, Cairo Branch, Egypt.

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## PEER REVIEWING

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### TRANSACTIONS AND PERIODICALS

- The Transactions on Power Electronics PE of the Institute of Electrical and Electronics Engineering IEEE of USA since May 2015.
- [TELKOMNIKA](#) Indonesian Journal of Electrical Engineering from Advanced Engineering and Science, since May 2015
- [International Journal of Innovative Research in Science, Engineering and Technology](#) (IJIRSET)
- The Transactions on Industry Applications IAS of the Institute of Electrical and Electronics Engineering IEEE of USA since August 2014.
- [International Journal of Power Electronics and Drive Systems](#) (IJPEDS) since Jan 2014.
- The proceedings of the Power Electronics, PEL of the Institute of Electrical and Technology IET of UK since 2012.
- The Journal of Power Electronics, JPE of the Korean Institute of Power Electronics since 2012.
- The European Power Electronics quarterly published EPE Journal published by the EPE Association, recognized as a European specialized Journal on Power Electronics, Drives and Applications since 2012.
- Ain Shams Engineering Journal (ASEJ), Production and Hosting by Elsevier B.V. on behalf of Faculty of Engineering, Alexandria University since 2012.
- Alexandria Engineering Journal, AEJ, Production and Hosting by Elsevier B.V. on behalf of Faculty of Engineering, Alexandria University since 2012.
- International Journal of Renewable Energy Research-IJRER, Turkey since 2012.
- International Journal of Power Electronics (IJELEC) Inder-Science Publisher since 2012.
- The Transactions on Industrial Electronics IE of the Institute of Electrical and Electronics Engineering IEEE of USA since 2011.

- The proceedings of the Renewable Power Generation, RPG of the Institute of Electrical and Technology IET of UK since 2009.

### **INTERNATIONAL CONFERENCES:**

- The [International Conference on Renewable Energy Research and Applications](#), ICRERA 2015, 22-25 November 2015, Palermo Italy
- The [17<sup>th</sup> Conference on Power Electronics and Applications](#), EPE'15-ECCE Europe, Geneva, Switzerland, 8<sup>th</sup> - 10<sup>th</sup> September 2015.
- The [9<sup>th</sup> International Conference on Power Electronics](#) ICPE 2015 ECCE Asia, Seoul, South Korea, June 1-5, 2015.
- The 24th IEEE International Symposium on Industrial Electronics, will be held in Búzios, Rio de Janeiro, Brazil during June 3-5, 2015, ISIE15
- [Jointly Organized Conferences:](#)
  - CESA 2015: 6th Multi-Conferences on Computational Engineering in Systems Applications,
  - CCCA 2015: 3rd Communications, Computing and Control Applications,
  - MGEF 2015: Mediterranean Green Energy Forum,
  - March 24-26, 2015 in Marrakech, Morocco.
- 8th [IEEE GCC Conference & Exhibition](#), IEEE sections of Gulf Cooperation Council Countries, Towards Smart Sustainable Solutions, Sultan Qaboos University, Muscat Oman 1-4 Feb. 2015.
- The 16<sup>th</sup> International Middle East Power Systems Conference, MEPCON'14, Ain Shams University, 23 - 25 December, 2014 in Cairo, Egypt.
- Second [International Conference on Electrical Engineering and Control Applications](#) ICEECA'14 on 18-20 November, 2014 in Constantine, Algeria.
- The [3<sup>rd</sup> International Conference on Information Processing and Electrical Engineering](#) (ICIPEE'14), University of TEBESSA, Algeria, November 2014.
- [International Symposium on Smart Sensors and Information Engineering](#) (ISSSIE 2014) on 16-17 August, 2014 in Dalian, China.
- The European Power Electronics, EPE 2014 – ECCE Europe Conference on 26-28 August, 2014 in Lappeenranta, Finland.
- The European Power Electronics EPE 2013 – ECCE Europe Conference on 3-5 September, 2013 in Lille, France.
- The International Middle East Power Systems Conference, MEPCON'12, Alexandria University on 23-25 December, 2012 in Alexandria, Egypt.



- The 15<sup>th</sup> International Power Electronics and Motion Drives Conference and Exposition, EPE-PEMC2012, ECCE Europe on 4-6 September 2012 in Novi Sad, Serbia.
- The Greece International Conference on Industrial Technology, IEEE-ICIT'12 on 19-21 March, 2012 in Island of Kos, Greece.
- The 14<sup>th</sup> European Power Electronics Conference, EPE2011, UK.
- The 8<sup>th</sup> International Conference on Power Electronics, ICPE2011, Korea.

### **GRANTS AND FUNDING AGENCIES**

- EraNetMed2015, International Bureau, the German Aerospace Agency (DLR), European and International Cooperation, in June 2015.
- The ISESCO Journal of Science and Technology published by ISESCO Center for Promotion of Scientific Research (ICPSR) of the Islamic Educational, Scientific and Cultural Organization (ISESCO) in Rabat, MOROCCO since July 2014.
- The Information Technology/Academia Collaboration (ITAC) Program at the Information Technology Industry Development Agency (ITIDA) since April 2014.
- Misr El-Kheir Foundation, Governorate Economic and Social Revival (GESR) - Social Business Incubators, April 2014.
- A peer reviewer and Judge for the ROV Egypt Championship in the AASTMT in March 2014 to Lead to International Championship in USA in July 2014.
- Technology Innovation & Entrepreneurship Center (TIEC) Graduation Projects Competition, IbTIECar, since August 2013.
- ERAfrica, International Bureau, the German Aerospace Agency (DLR), European and International Cooperation, in June 2013.
- Intel Science and Engineering Foundation, ISEF of the Egyptian Ministry of Education, since 2012.
- The Qatar Notational Research Fund, QNRF since 2008.

### **AFFILIATION AND INDUSTRIAL EXPERIENCE**

### **EDITORIAL BOARD MEMEBERSHIP**

- [International Journal of Renewable Energy Technology](#)
- [International Journal of Renewable Energy Technology](#), UK, Jan 2015.
- Renewable energy & power quality journal and annual meeting of the international conference on renewable energies and power quality (ICREPQ), Spain since Jan. 2015.
- [International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering](#), since Jan. 2015.



- An editorial board member for the ISESCO Journal of Science and Technology by ISESCO Center for Promotion of Scientific Research (ICPSR) of the Islamic Educational, Scientific and Cultural Organization (ISESCO) in Rabat, MOROCCO since July 2014.
- An Associate Editor of the [Basic Research Journal of Engineering Innovation](#) (BRJENG), since March 2014.
- An editorial board member for the [International Journal on Advanced Electrical Engineering](#) (IJAE), Djelfa University, Algeria, ISSN 2335-1209, since July 2013.
- An editorial board member for the [International Journal of Electrical and Electronics Engineering](#) (IJE), of the International Academy for Science, Engineering and Technology (IASET), since September 2012.
- An editorial board member for the [International Journal of Advanced Renewable Energy Research](#) (IJARER) since September 2012.
- An editorial board member for the [International Journal of Electrical and Electronics Engineering Research](#) (IJEER), of Transstellar Journal Publications and Research Consultancy, (TJPRC) since July 2012.

## **AFFILIATION**

- A member of Steering Committee of the Regional Informatics Center, Arab Academy for Science ,Technology and Maritime Transport AASTMT, since August 2014.
- Member of [World Society of Sustainable Energy Technology](#) (WSSET), University of Nottingham, UK since March 2014.
- Member of the [World Renewable Energy Network](#), WREN Council in Brighton UK since July 2013.
- Member of the Steering Committee for the [World Renewable Energy Congress](#), WRENUK in Brighton UK since July 2013.
- A member of the Energy Sector of the Institute of Engineering and Technology IET, UK since January 2013.
- A member of the [African Network for Solar Energy](#) (ANSOLE) since December 2012.
- Member of the committee of Projects and Small Enterprise, Egyptian Engineering Syndicate, Alexandria Branch from November 2011 to November 2012.
- Smart Grid Community, Institute of Electrical and Electronics Engineers (IEEE) since 2012.
- Electric Vehicle Community, Institute of Electrical and Electronics Engineers (IEEE) since 2012.
- Member in the Institute of Engineering and Technology IET since 2010.
- Senior Member in Institute of Electrical and Electronics Engineers IEEE since 2009.

- Member of the board of Réseau Méditerranéen des Ecoles d'Ingénieurs (RMEI), Ecole Centrale Marseille in France since 2009.
- Member in the Electrical Engineering Society in Egypt since 2009.
- Energy Conversion Society, Institute of Electrical and Electronics Engineers (IEEE) since 1998.
- Power Electronics Society, Institute of Electrical and Electronics Engineers (IEEE) since 1998.

### **INDUSTRIAL EXPERIENCE**

- A consultant with the [Blue Power Company for Renewable Energy](#), 4 Besheer Nema st., Heliopolis, Cairo, Egypt since Feb 2012.
- Consultant with the Fox Industrial Power Electronics Company for power electronics Trade, 54 Omar Zafraan St., Ibrahemia, Alexandria, Egypt since 2008.

### **HONORS AND AWARDS**

- ECCE 2012 Presentation Award Winner for the paper, 'A Novel Topology for Enhancing the Low Voltage Ride through Capability for Grid Connected Wind Turbine Generators', ECCE 2012, IEEE Energy Conversion Congress and Exposition, September 15- 20, 2012, Raleigh, North Carolina, by R.A. Ibrahim, M.S. Hamad, **Y.G. Dessouky** and B.W. Williams.
- DESERTEC University Network, DUN, Best Paper Award for the paper, 'A Novel Topology for Enhancing the Low Voltage Ride through Capability for Grid Connected Wind Turbine Generators', by R.A. Ibrahim, M.S. Hamad, **Y.G. Dessouky** and B.W. Williams, the 3<sup>rd</sup> Dii Desert Energy Conference 7-9 November 2012 in Berlin, Germany.

### **INVITATIONS**

- Invited Key Note Speaker by the German Academic Exchange Service (DAAD), "German-Arab Knowledge Transfer Colloquium on Resilience of Industrial Urban Systems" workshop in Duisburg-Essen University, Germany, 1-5 December 2015.
- Invited key note speaker by International Program Committee member for the MGEF 2015: Mediterranean Green Energy Forum Conferences on March 26-28, 2015 in Marrakech, Morocco.
- Invited key note speaker by World Renewable Energy Congress 13-WREC XIII, 'Renewable Energy in the service of Mankind', University of Kingston, LONDON – UK, 3-8 August, 2014. Invited by the ESCWA Technology Centre (ETC) of United Nations Economic and Social Commission for Western Asia (UN-ESCWA) to attend a Regional Workshop on Creating the

Right Ecosystem for Knowledge Valorization: A Case Study of ODTU Teknokent (Science and Technology Park), 16-18 June, 2014, Ankara, Turkey.

- Invited key note speaker by European Commission, JRC – Institute of Energy and Transport, Energy Security Unit, Netherlands to E&IA Workshop on Costs, Benefits and Impact Assessment of Smart Grids for Europe and beyond, Antalya, Turkey, 23-25 April 2014.
- Invited key note speaker by the British Council under Researcher Links scheme with the Egypt STDF (Science and Technology Development Fund) on the Solar and Wind Energy Systems workshop at the University of Nottingham 3-6 March 2014.
- Invited key note speaker by European Commission, JRC – Institute of Energy and Transport, Energy Security Unit, Netherlands to E&IA Workshop on Smart Grid and Power Highways, Antalya, Turkey, 18-20 September 2013.
- Invited Key Note Speaker by the [International Innovation in Knowledge Based and Intelligent Engineering Systems](#), KES International, West Sussex, United Kingdom to the Mediterranean Green Energy Forum MGEF-13, Fes, Morocco, 16-20 June 2013.
- Invited Key Note Speaker by the Faculty of Engineering, Alexandria University, in the “The future of Energy in Egypt” Alumni Association for Alexandria University, in April 2013.
- Invited by Kassel University, Germany to a Mobility Exchange grant from the German Academic Exchange Service (DAAD), from 22 to 24 Feb 2013.
- Invited Key Note Speaker by the German Academic Exchange Service (DAAD), in the “Energy engineering and DESERTEC” workshop in Dresden, Germany, from 10 to 13 December 2012.
- Invited by the Association of Arab Universities (AARU) to attend a workshop, ‘Cooperation between Arab Universities in Scientific Research’, 28 November 2012, Amman, Jordan.
- Invited by the Association of Arab Universities (AARU) to attend a workshop, ‘Determination of the scientific research priorities in the Arab Universities’, 8 October 2012, Amman, Jordan.
- Invited Key Note Speaker by the Réseau Méditerranéen des Ecoles d’Ingenieurs (RMEI) in the, “2<sup>nd</sup> Michelangelo Workshop of Civitavecchia: The Mediterranean is facing major challenges through its Youth”, April 13-14, 2012, Civitavecchia, Italy.

## **AREA OF INTEREST AND RESEARCH ACTIVITIES AND OBJECTIVES**

### **GOOGLE SCHOLAR ADDRESS:**

<http://scholar.google.com.eg/citations?hl=en&user=2IccTsMxUawC>

### **SCOPUS ADDRESS:**

<http://www.scopus.com/authid/detail.url?authorId=7004307085>

### **RESEARCH GATE ADDRESS:**

### **AREA OF INTEREST**

- Power Electronics and Industrial Applications.
- Electrical Machine Drives and Applications.
- Electrical Machine Modeling and Simulations.
- Hybrid Technology for Automotive and Transportation Applications.
- Grid Connection, DC Grids based on DC Transformers.
- Distributed Generation.
- Renewable Power Generation and Green Technologies.
- Renewable Energy and Sustainable Development Technologies.
- Energy management, Cleaner Production, Energy Efficient Systems.
- Active Filters and Power Quality in Electrical Power System.
- Power Management and Control Applications for Power systems.
- Development of a clean and efficient power-generation.
- Efficient Smart Homes: communication, control and power management.
- Unmanned Ariel Vehicle (UAV)
- Parameter Identification in Industrial Processes.
- Microcomputer Based Control System and Digital Logic Design.
- Adaptive Control Applications.

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➤ Scientific Research and Innovation Management.

➤ Commercialization and Entrepreneurship.

### **RESEARCH OPPORTUNITIES/OBJECTIVES:**

Since being a professor in the department of Electrical and Control Engineering Dept. in 2006, our research group has been successful in maintaining a high level of academic output. We currently have a balanced research portfolio including research and projects aimed at achieving a transfer of research to the commercial sector. This has allowed the growth of the research team. Future plans must sustain this activity through the identification of research opportunities, postgraduate researcher recruitment and the attraction of suitable funding.

- **High power/high voltage power electronic applications.** This area offers significant research potential and is recognized as a key technology for the integration of new generation technologies and the development alternative power distribution architectures. In particular the area of high voltage dc transmission is receiving significant attention from both industry and government sectors.

- **Power Electronics for Transport Technologies.** Moves to reduce carbon emissions tend to concentrate on the development and integration of low emission sources of energy. Complimentary to this, there is a need to address other sources of emissions. From the perspective of power electronics there are significant research opportunities in the field of electricity based transport technologies (Both flexible and fixed route). This research must address; management of high energy density storage technologies, high efficiency drive trains and refuel/recharge systems. If transportation energy is to be sourced via the electricity supply network, integration of this significant new load will present significant challenges.
- **Power electronics for high performance high reliability environments.** Electronic energy conversion is becoming increasingly common in high performance, safety critical environments.
- **High Voltage and Medium Voltage DC distribution and transmission.** DC power networks are becoming a significant research area for industry and academia. Expertise in system modeling and fundamental converter design places the group in a strong position to exploit this area.
- **Integration of Renewable Energy Generation.** The research group achieved high levels of research output from the generator interface theme. It is planned to continue this activity.
- **Novel Power Conversion Applications.** The group has worked to develop power supplies. Such systems drive a need for novel power electronic devices and converter topologies. It is hoped that this area can be expanded in future.
- **Control of Inverters for Generator Grid Interface.** Increasingly distributed generation is to be operated at variable frequency or DC output. This introduces the need for a power electronic interface. Whilst the behavior of conventional generation is fixed by the generator dynamics, inverter interfaces bring the mixed blessing of flexible control.
- **Scientific Research and Innovation Management.** Innovation management allows the organization to respond to external or internal opportunities, and use its creativity to introduce new ideas, processes or products.
- **Commercialization and Entrepreneurship.** Entrepreneurship is the process which, by applying management concepts and techniques, standardizing the product, designing processes and tools, leads to an enhanced yield from resources and to the creation of new markets and new customers.

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## GRANTS AND PROJECTS

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- The AASTMT PI of the (Joint mAster of Mediterranean Initiatives on renewabLe and sustAinable energy, JAMILA), Tempus Project No. 544339-TEMPUS-1-2013-1-IT-TEMPUS-JPCR,

Coordinator Sapienza University of Rome and the EU Partners are Northumbria University (UK) and University of Cadiz (Spain) and from Egypt Ain Shams University and Alexandria University.

- The AASTMT PI of the Erasmus + International Mobility KA 107 with Universidad de Valladolid, Valladolid, Spain in the academic year 2015/2016.
- The AASTMT PI of the Erasmus + International Mobility KA 107 with Università degli Studi di Napoli Federico II, Napoli, Italy in the academic year 2015/2016.
- The AASTMT PI of the Erasmus + International Mobility KA 107 with Sapienza University of Rome, Italy in the academic year 2015/2016.
- A member of the research team of 22M US\$ grant from National Research Foundation of Korea to construct the Durable Building & Infrastructure Research Center DuraBI, Hanyang University ERICA, Korea to achieve creative economy and sustainability in the construction industry including: Reliable durability models for structures, Innovative & new materials and methods for structure durability, and ICT-based durability evaluation models (Sept 2015- August 2022).



- The AASTMT Principal Investigator PI of High Opportunity for Mediterranean Executives Recruitment, HOMERe, to connect graduates with Mediterranean business through international internships in companies. The consortium consists of four countries of the northern shores (Spain, France, Greece and Italy) and five countries of the southern shores (Algeria, Egypt, Lebanon, Morocco and Tunisia) around the Mediterranean, from January 2015 till December 2016.



- The PI of the (Towards smart Grids: Design and Development of Energy Efficient Smart Home) project, in Feb 2015 for two years for one million Egyptian Pound, funded by Information Technology Academia Collaboration (ITAC) of the Information Technology Industry Development Agency (ITIDA), Advanced Research Projects (ARP) program, ID ARP2014.R16.7, Round 16.



- Smart Electric Meter with Wireless Power Transfer System, Graduation Project sponsored by the Academy of Scientific Research and Technology, for 15,000 Egyptian, Jan 2015- Dec 2015.



- UK-Researcher Links grant from the British Council in August 2014 for 35,400 Sterling to organize a workshop in Renewable Energy in Feb 2015.



- Supporting Grant from [Smart-CI](#): Smart Critical Infrastructure Research Center, VT-MENA Project, Faculty of Engineering, Alexandria University to prepare a proposal entitled Automatic Load Balancing for Smart Grids, ID: 206, April-September 2014.



- The AASTMT Principal Investigator of the ErAfrica project funded by the European Union, entitled 'Development of an advanced high-efficient low-cost power-generation with minimum carbon emission from hybrid-fuel supplies', March 2014 - Feb 2017, for 980,000 Euro. The grant holder is Stavanger Univ. of Norway, with three other partners from Belgium, Turkey and South Africa, and three partners from Egypt (Blue Power Company, Ain Shames University and Alexandria University).





- The AASTMT Principal Investigator of a TEMPUS project funded by the European Union, entitled '[Highway and Traffic Engineering: Curricular Reform for Mediterranean Area](#)', Project No. (544460-TEMPUS-1-2013-1-IT-TEMPUS-JPCR), October 2013- October 2016, for 1.4 Million Euro. The grant holder is Università degli Studi di Napoli Federico II of Italy, with 10 Partners from France, Spain, Greece, Sweden, Lebanon, Morocco, Tunis and Egypt.



Co-funded by the  
Tempus Programme  
of the European Union

- The Director of Technology, Innovation and Commercialization Office (TICO), funded by the Academy of Scientific Research and Technology (ASRT) of the Egyptian Ministry of Scientific Research, July 2013- June 2015, for about 75,000 US\$.



- The Director of Grants, International Cooperation Office (GICO), supported by the Academy of Scientific Research and Technology (ASRT) of the Egyptian Ministry of Scientific Research, July 2013- June 2015.
- The Director of Technology Innovation Support Centre (TISC), supported by the Academy of Scientific Research and Technology (ASRT) of the Egyptian Ministry of Scientific Research, July 2013- June 2015.
- The Principal Investigator of project funded by the Academy for Scientific Research and Technology, ASRT of the Egyptian Ministry of Scientific Research for an Undergraduate project entitled, 'Utilization of Solar Energy Using Mirrors for Power Generation and Water Desalination', for about 10,000 US\$, March 2013 to Dec 2013.

## ADVISING AND SUPERVISION

- **B.Sc. Graduation project Supervision:** Supervised more than twenty undergraduate projects in Electric Machine Drives, Industrial Power Electronics, Renewable Power Generation and Green Technology and Energy Systems.
- **M.Sc. Supervision:**  
**Finished:**

1. 'Application of solar energy system for submersible water pumping', Rasha Saad Foaud, AASTMT, Alexandria, May 2014.
2. 'Automatic Load Balancing for Smart Grids using Genetic Algorithms balancing load share using genetic algorithm', Ahmed Abdel Lateef, AASTMT, Alexandria, Dec 2013.
3. 'Regulated static converter using scot transformer', Hesham Hussin, Alexandria University, December 2012.
4. 'Stabilized power AC-DC-AC converter using polygon transformer', Nermeen Biomy, AASTMT, Alexandria, May 2012.
5. 'Harmonic Elimination and Power Quality Improvement Using Shunt Active Power Filters', Nahla E. Zakzouk, AASTMT, Alexandria, Nov. 2009.
6. 'Vector Control of Permanent Magnet Synchronous Motor Using Digital Signal Processor', Ahmed A. Abo Shady, AASTMT, Alexandria, July 2008.
7. 'Operation control of multilevel inverters for induction motors', Samia M. Abd Alaah, AASTMT, Alexandria, July 2007.
8. 'Artificial neural network based vector controlled-induction motor drives', Mona F. Moussa, AASTMT, Alexandria, Spet. 2004.
9. 'Voltage control of self-excited induction generator driven by wind speed', Eman H. Beshr, AASTMT, Alexandria, July 2003.

#### Running:

10. 'Smart Meter for Solar systems', Mokhtar Mohmaed, Tanta University.
11. 'Smart-Grid Technologies: H2 storage', Abdualla Ahmed, Tanta University.
12. 'Wind Energy Technologies', Ashraf El Bardaweeliy, AASTMT, Cairo.
13. 'Mixed Pole Machine', Moustafa Amin, AASTMT, Alexandria.
14. 'High Voltage DC Technology', Mohamed Tawfeek El Adal, AASTMT, Alexandria.
15. 'Distribution Generation Technologies', Mahmoud El Mahay, AASTMT, Alexandria.
16. 'High Voltage DC Technology', Nehal Abdel Ghafour, AASTMT, Alexandria.

#### ▪ PhD Supervision

#### Finished:

1. 'Field Oriented Control and On-line Identification of Sensorless Permanent Magnet Brushless DC Motor', Mona Fouad Moussa, by Channel System with Alexandria University, July 2008.

2. 'Low Voltage Ride-Through of Permanent Magnet Synchronous Generator Wind Energy Systems', Rania Assem Ibraheem, by Channel System with Strathclyde University in UK, Jan 2015.
3. 'Power Management in DC Grids' Rana Maher by channel system with Aix-Marseille University in France.

#### Running:

1. 'Power Management Control of Fully Fed Induction Generator', Salwa Yousry, by channel system with Staffordshire University in UK.
2. 'Traffic flow simulation: mixed traffic situations with pedestrians and vehicles', Ahmed Abdel Lateef, University of Duisburg-Essen, Germany.

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Y.G. Dessouky, 'Operation of a switched reluctance motor from a single-phase ac supply', Invention, The Patent Office in UK, GB2419246, 2006.

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