

## Curriculum Vitae of Dr HEBA HASSAN



### 1. PERSONAL DETAILS

**Name:** Heba Ahmed Hassan

**Title:** Dr, MIET, MIEEE, Associate Practitioner of the Higher Education Academy in the United Kingdom.

**Nationality:** Egyptian

**Address:** Department of Electrical and Computer Engineering, College of Engineering, Dhofar University, P.O. Box: 2509, Salalah, Post Code: 211, Sultanate of Oman

**Telephone:** 00968 23225810, Ext: 126

**E-mails:** heba\_hassan@du.edu.om , hebahassan@ieee.org

**Website:** <http://www.du.edu.om/faculty%20names/CE%20faculty%20name.htm>  
[http://www.du.edu.om/faculty%20names/CVs/PDF%20CVs/CE/Heba\\_Hassan.pdf](http://www.du.edu.om/faculty%20names/CVs/PDF%20CVs/CE/Heba_Hassan.pdf)

### 2. EDUCATION DETAILS

Dates	University	Qualifications	Year
From: January 2001 To: December 2004	University of Ulster, School of Electrical and Mechanical Engineering, Northern Ireland, United Kingdom	- PhD in Electrical Engineering - Thesis Title: 'Modelling and Simulation Study of Robust Adaptive Control for FACTS'.	2004
From: October 1995 To: July 1999	Electrical Power Systems Group, Electrical Power and Machines Department, Faculty of Engineering, Cairo University, Egypt	- MSC in Electrical Power Engineering and Machines - Thesis Title: 'Eigen-value Based Methods for Improving Power Systems Dynamic Stability'. - Graduated with Distinction (92%) in the MSC Courses.	1999
From: September 1990 To: July 1995	Electrical Power and Machines Department, Faculty of Engineering, Cairo University, Egypt	- BSC in Electrical Power Engineering and Machines - Graduated with Distinction, First degree Honours (94%). - Rank: First in the Department (1/220) and First in the Faculty of Engineering in 1995. - Graduation Project was in the area of electrical power distribution.	1995

### **3. PRESENT EMPLOYMENT**

**Currently, I am on a Secondment/Sabbatical Leave from Cairo University, where I hold a permanent full-time Assistant Professor position:**

**Employer's Name and Address:** Department of Electrical and Computer Engineering, College of Engineering, **Dhofar University**, P.O. Box: 2509, Salalah, Post Code: 211, Oman.

*Dhofar University (DU) has been run by the American University of Beirut (AUB) since 1<sup>st</sup> September 2004; its curriculum and policies were prepared by an AUB team who continues to provide technical support and consultation to ensure the delivery of quality education.*

**Date of Employment:** 1.9.2008 until now.

**Post Title:** Acting Chairperson of Chemical Engineering Department and Assistant Professor at the Department of Electrical and Computer Engineering (ECE).

#### **Brief Description of Duties:**

- Acting Chairperson of Chemical Engineering Department which involved starting a new department from scratch.
- Representative of the College of Engineering at the University Strategic Planning Committee.
- Chair of the College Scientific Research Committee.
- Member of the College of Engineering Board.
- Member of the Department of Electrical and Computer Engineering Board.
- Chair of the Department of Chemical Engineering Board.
- Member of the College Academic/Administrative Committee.
- Member of the University Board of Graduate Programs.
- Granted a University Research Board (URB) seed research grant for one year entitled 'Recent Advances in Flexible AC Transmission Systems (FACTS)' for the amount of 1000 Omani Rials in October 2008.
- Teaching in average 5 modules per semester for ECE students. This involved preparations for teaching and assessment, production of module documentation as well as marking and preparation of examination papers.
- Successful in developing a number of new modules which were newly offered in the new University Catalogue, such as:
  - Fall Semester 2008-2009: Control Systems (EECE 360) and Power Electronics (EECE 462).
  - Spring Semester 2008-2009: Power Systems I (EECE 361), Power Systems II (EECE 463) and Power Systems Simulation Lab (ECE 361L).

#### **4. CAREER HISTORY**

**From: 15<sup>th</sup> January 2005, To: 31<sup>st</sup> August 2008**

**[1] A Full-Time Assistant Professor [Permanent Job since 2005 until now] at Electrical Power and Machines department, Faculty of Engineering, Cairo University, Egypt.**

**[2] Part-Time Assistant Professor at the following private Higher Education Institutions:**

- **MSA University** (October University for Modern Sciences and Arts): a private university accredited and validated by Greenwich and Middlesex Universities in the United Kingdom, <http://www.msa.eun.eg>
- **Akhbar El Yom Academy**: besides academic teaching duties at the academy, I was responsible of promoting the skills of academic staff at the academy and supervising the development of the academy website <http://www.akhbaracademy.edu.eg>
- **IAEMS** (International Academy for Engineering and Media Science), <http://www.iams.edu.eg>
- **HTI** (Higher Technological Institute, 10<sup>th</sup> of Ramadan, 6<sup>th</sup> October branch) <http://www.hti.edu.eg>

**[3] Other Part-Time Experience:**

- **Certified Academic Trainer** at Cairo University (Faculty Developer – Class C), I offered training programs related to teaching in higher education to academic staff of different faculties in Egyptian Universities. These training programs are part of the requirements for promotion of professors, organised by 'Faculty, Staff and Leadership Development Project' (FLDP) and financed by the 'International Bank for Reconstruction and Development' (IBRD) and the Egyptian Ministry of Higher Education (MOHE).

Titles of these training programs were 'Effective Teaching' and 'Assessment and Evaluation of Teaching and Learning'. 'Effective Teaching' training program was also offered to the academic staff of private higher educational establishments such as Akhbar El Yom Academy in February 2007.

- **Consultant for the Quality Assurance and Accreditation Project (QAAP)**, supervised by the Supreme Council of Egyptian Universities. My role was a **Certified Peer Reviewer** for the project during the Developmental Engagement (DE) site visits to faculties of engineering in Egyptian universities.

- **Consultant for the National Authority for Quality Assurance and Accreditation of Education (NAQAAE)**, supervised by the 'Egyptian Cabinet of Ministers'. During that work, I produced training and trainers' manuals entitled 'Curriculum Mapping' in English and Arabic for secondary and higher education.

- **Consultant for the 'Higher Education Enhancement Project Fund' (HEEPF) at the 'Egyptian Supreme Council of Universities' and MOHE** as a member of the Monitoring and Evaluation team responsible of monitoring projects progress and handover process. The project was funded by the IBRD.

**Brief Description of Duties during this period (January 2005-August 2008):**

- Scheduled Teaching of UG and PG (Higher Diploma and MSC degree courses of electrical power systems) engineering students which include lectures, tutorials, projects supervision and practical laboratories.
- Teaching Related Activities such as preparations for teaching, production of module documentation, marking, preparation of examination papers and participation in examination boards and projects.
- Academic Management, Leadership and Planning: I played an effective role in one of the most crucial projects sponsored by Cairo University which is 'Quality Assurance and Accreditation Project' (QAAP) by representing the department in this project.
- Staff and Institutional Development such as personal development, induction, attendance of courses, conferences and seminars at Cairo University and Akhbar El Yom academy.
- Preparation and writing of publications, undertaking research, attendance of courses and conferences to enhance professional competence.
- Research and Scholarly Activities which involved supervision of final year students' graduation projects, higher post-graduate diploma projects and a number of post-graduate students which resulted in a number of publications in professional journals and conferences.

**From: 1<sup>st</sup> January 2001, To: 15<sup>th</sup> January 2005**

**Teaching and Research Assistant at University of Ulster, School of Electrical and Mechanical Engineering, United Kingdom**

**Brief Description of Duties:**

- Assisting in teaching these modules: Electrical Technology and Instrumentation, Circuit Analysis, Signals and Systems, Control and Automation Labs, Power Electronics and Control Labs, Analytical Methods for Engineers and Electrical Circuits.

**From: July 1999, To: January 2000**

**City University, London, with Prof. Loi Li Lai , Head of the Energy Systems Group**

**Brief Description of Duties:**

- Preparing a research proposal for PhD in the area of FACTS and energy auctioning.

**From: April 1998, To: December 1998**

**Academic Visitor at Imperial College, London, Department of Electrical and Electronic Engineering, with Prof. Philippe De Wilde**

**Brief Description of Duties:**

- Participating in the preparation of an EPSRC project research proposal.

**From: October 1995, To: April 1998**

**Full-Time Teaching and Research Assistant at Faculty of Engineering, Electrical Power and Machines Department, Cairo University, Egypt**

**Brief Description of Duties:**

- Assisting in teaching electrical power engineering modules and studying towards my MSC degree.

## **5. CONTINUOUS PROFESSIONAL DEVELOPMENT and TRAINING**

<b>Course Title and Contents</b>	<b>Organising Body</b>	<b>Date Attended</b>
<p>[1] 'Quality Assurance and Accreditation Project (QAAP) Workshop for Certified Peer Reviewers'</p> <p>- A requirement to be a '<u>Certified Peer Reviewer for Quality Assurance and Accreditation Project</u>' at the Supreme Council of Egyptian Universities.</p>	Supreme Council of Egyptian Universities and the QAAP financed by the 'International Bank for Reconstruction and Development' (IBRD)	February 2008
<p>[2] 'Training of Trainers Workshop'</p> <p>- A requirement to be a '<u>Certified Academic Trainer</u>', recognised by the Supreme Council of Egyptian Universities as (Faculty Developer, Class C).</p>	'Faculty, Staff and Leadership Development Project' (FLDP) and the 'Egyptian Ministry of Higher Education'	April 2007
<p>[3] 'Preparation of Academic Teacher Training Workshop'</p> <p>- One of the requirements for Lecturer position at Cairo University.</p>	Cairo University, Egypt	February 2005
<p>[4] 'SEDA recognised programme'</p> <p>- Awarded Accreditation as an 'Associate Teacher in Higher Education' after successful completion of the programme that was a grant from the department for a full-semester.</p> <p>- Based on this, I achieved the status of 'Associate of the Higher Education Academy', recognition reference: 30059.</p>	University of Ulster, United Kingdom	June 2005
<p>[5] 'Generic and Research Skills' training programme</p> <p>- The programme discussed the principles of research at the University and the enhancement of participants' presentation skills.</p>	University of Ulster, United Kingdom	June 2001
<p>[6] 'Introduction to Learning and Teaching for PG Teaching Assistants and Generic and Research Skills' training programme</p> <p>- The programme aimed at enhancing academics teaching skills within the University.</p>	University of Ulster, United Kingdom	April 2001

## **6. RESEARCH FELLOWSHIPS and SCIENTIFIC COMMITTEES**

<b>Professional Association</b>	<b>Grade</b>	<b>Year</b>
1- Reviewer of the 'Journal of Energy and Power Engineering', ISSN 1934-8975, David Publishing Company, Illinois, USA	- Reviewer	2010
2- Reviewer of the 'International Journal of Continuing Engineering Education and Life-Long Learning' (IJCEELL), ISSN (Online): 1741-5055 - ISSN (Print): 1560-4624, Inderscience Publishers, Geneva, Switzerland	- Reviewer	2010
3- 'The International Journal of Innovations in Electrical Power Systems', ISSN 0975-5306, Serials Publications, New Delhi, India	- Chief Editor	2008
4- The Higher Education Academy, United Kingdom	- Registered Associate of the Higher Education Academy (AHEA), Life-Time Membership	2005
5- The Institution of Engineering and Technology (THE IET), UK	- Full Member and Reviewer of a number of the IET Journals	2003
6- Institute of Electrical and Electronics Engineers (IEEE), USA	- Full Member and Reviewer of IEEE Transactions on Power Systems, Power Delivery and Energy Conversion	2003
7- IEEE Power Engineering Society 'PES'	- Member and Reviewer for many Journal and conference papers that exceed hundred.	2005
8- Scientific Journals International (SJI)	- Editorial Review Board Member	2007
9- IASTED 'Power and Energy Systems Committee'	- Member of the Technical Committee	2005
10- IASTED 'International Journal of Power Systems'	- Associate Editor of the Power Systems Journal	2005
11- Egyptian Syndicate of Engineers	- Member	1995

## **7. LIST of PUBLICATIONS**

### **A] List of Research Publications:**

1) S. Al-Shahaimi, A. Al-Qadhi, M. Shamas and **H. Hassan**, "Electrical power network design for an urban city in Oman", The 2<sup>nd</sup> Annual Undergraduate Research Conference on Applied Computing (URC 2010), Zayed University, Dubai, UAE, May 5 - 6, 2010.

- 2) **H. Hassan**, “The deployment of FACTS in high voltage networks: A case study in Oman“, The 5<sup>th</sup> IET International Conference on Power Electronics, Machines and Drives (PEMD 2010), Brighton, UK, April 19 - 21, 2010.
- 3) H. Hassan, “The electrical power network in Oman and the need for FACTS“, The 16<sup>th</sup> International Scientific Conference of the Lebanese Association for the Advancement of Science, Beirut Arab University, November 13 - 15, 2009.
- 4) F. Chaaban, and **H. Hassan**, “Modelling and measurements of the electromagnetic field of high voltage transmission lines: A practical case in Lebanon“, The International Conference on Electrical Energy and Industrial Electronic Systems (EEIES 2009), Penang, Malaysia, December 7 - 8, 2009.
- 5) **H. Hassan**, M. El Metwally and A. Bendary, “Enhancement of FACTS stability through robust adaptive control“, The International Conference on Electric Power and Energy Conversion Systems (EPECS’09), American University of Sharjah, Sharjah, UAE, November 10-12, 2009.
- 6) **H. Hassan**, M. El Metwally and A. Bendary, “Dead-Zone robust adaptive controller for FACTS using quadratic and non-quadratic Lyapunov functions“, The 8<sup>th</sup> IEEE International Conference on Power Electronics and Drive Systems (PEDS’09), Taipei, Taiwan, November 2 - 5, 2009.
- 7) M. El-Metwally, **H. Hassan**, and A. El-Bendary, “A novel robust adaptive dead-zone controller using quadratic Lyapunov function for FACTS”, International Journal of Innovations in Electrical Power Systems, Vol. 1, pp: 35 - 44, June 2009.
- 8) **Heba A. Hassan** and M. P. R. V. Rao, ‘A New Robust Adaptive Controller Based on Non-Quadratic Lyapunov Functions for SVC’, *The 3<sup>rd</sup> IET International Conference on Power Electronics, Machines and Drives (PEMD 2006)*, Dublin, Ireland, 4-6 April 2006, pp. 231-235.
- 9) **Heba A. Hassan** and M. P. R. V. Rao, ‘Novel Robust Adaptive Controller Based on Non-Quadratic Lyapunov Functions for FACTS’, *The 8<sup>th</sup> IET International Conference on AC and DC Power Transmission (ACDC 2006)*, The IET, Savoy Place, London, UK, 28-31 March 2006, pp. 261-265.
- 10) **Heba A. Hassan** and M. P. R. V. Rao, ‘Novel Robust Adaptive Control Scheme Using Non-Quadratic Lyapunov Functions For Higher Order Systems’, *IEEE International Conference on Computer as a Tool (EUROCON 2005)*, Belgrade, 22-24 November 2005, pp. 286-289.
- 11) **Heba A. Hassan** and M. P. R. V. Rao, ‘Novel e-Modification Robust Adaptive Control Scheme Using Non-Quadratic Lyapunov Functions for Higher Order Systems’, *IEEE International Conference on Computer as a Tool (EUROCON 2005)*, Belgrade, 22-24 November 2005, pp. 290-293.
- 12) M.P.R.V. Rao and **H. A. Hassan**, ‘New Adaptive Laws for Model Reference Adaptive Control Using Non-Quadratic Lyapunov Functions’, *Automatika Journal for Control, Measurement, Electronics, Computing and Communications*, Vol. 45, 2004, pp. 3-4.
- 13) **Heba A. Hassan**, ‘Modelling and Simulation Study of Robust Adaptive Control for FACTS’, PhD Thesis, University of Ulster, UK, December 2004.
- 14) M.P.R.V. Rao, **H. A. Hassan** and D. N. Donnelly, ‘Robust Adaptive Control: Improved e-Modification Using a Non-Quadratic Lyapunov Function’, *International Conference on Signals and Electronic Systems (ICSES’04)*, Poznań, Poland, 13-15 September 2004, pp. 67-70.

15) M.P.R.V. Rao and **H. A. Hassan**, 'New Adaptive Laws for Model Reference Adaptive Control Using a Non-Quadratic Lyapunov Function', *The 12<sup>th</sup> IEEE Electrotechnical Mediterranean Conference (MELECON 2004)*, Dubrovnik, Croatia, 12-15 May 2004, pp. 371-374.

16) D. Jovcic, N. Pahalawaththa, M. Zavahir and **H. Hassan**, 'SVC Dynamic Analytical Model', *IEEE Transactions on Power Delivery*, Vol. 18, No. 4, October 2003, pp. 1455-1461.

17) D. N. Donnelly and **H. A. Hassan**, 'Robust Adaptive Control Using Non-Quadratic Lyapunov Functions', *United Kingdom Automatic Control Council (UKACC) Control 2002 Conference*, University of Sheffield, England, 10-12 September 2002, pp. 31-37.

18) **Heba A. Hassan**, 'Eigen-Value Based Methods For Improving Power Systems Dynamic Stability', MSc. Thesis, Cairo University, Egypt, 1999.

19) **Heba A. Hassan**, 'Computer Aided Design of an Electric Distribution System', BSc. Graduation Project Thesis, Cairo University, Egypt, 1995.

**[B] Other Special Publications:**

20) Trainer and Trainee training manuals for the National Authority for Quality Assurance and Accreditation of Education (NAQAAE) under the supervision of the 'Egyptian Cabinet of Ministers', entitled 'Curriculum Mapping for Secondary and Higher Education' in English and Arabic, May 2008.

21) Training materials related to a training program entitled 'Trainer Enhancement of Soft Skills for Engineers', held at Akhbar El Yom Academy for third year mechanical design and industrial engineering students, March 2008.

22) Author of a book entitled 'Sustainability Mechanisms of Higher Education Enhancement' financed by Higher Education Enhancement Project Fund (HEEPF), Ministry of Higher Education in Egypt, January 2007. Arabic and English software copies of the book could be easily downloaded from the following web links:

<http://www.heepf.org.eg/HEEPF-Publication/free9-9.pdf> and

<http://www.heepf.org.eg/pdf/Booklets/Sustainability%20Mechanisms.pdf>.

23) Training materials related to staff development skills program entitled 'Effective Teaching', September 2006.

24) Training materials related to a more advanced staff development skills program entitled 'Assessment and Evaluation of Teaching and Learning', July 2007.

25) A 'Teaching Portfolio' prepared and submitted to fulfil the course requirements and obtain the certificate of 'Associate Higher Education Teaching Award' at the University of Ulster, United Kingdom, May 2005.

26) An Abstract and a Poster of my PhD research work were published and presented at the House of Commons, The Parliament House at Westminster, London, United Kingdom for an important scientific event called 'Special Reception for Britain's Younger Engineers', organised by 'SET for BRITAIN' and attended by members of the British Parliament on 14<sup>th</sup> December 2004, (<http://www.setforeurope.org>).

## **8. AWARDS, GRANTS and SCHOLARSHIPS**

- 1- August 2009: My biography is being included in the 27<sup>th</sup> edition of *Who's Who in the World*, which profiles the most accomplished men and women in the world for 2010.
- 2- October 2008: awarded a one-year research grant for 1,000 Omani Rials from 'University Research Board' at Dhofar University towards 'Recent Advances in Flexible AC Transmission Systems (FACTS)'.
- 3- December 2004: I was awarded a certificate of participation in 'Special Reception for Britain's Younger Engineers', organised by 'SET for BRITAIN' at the 'House of Commons'. My expenses in London were covered by the University of Ulster, United Kingdom. This selection, which was based on a competition all over the UK PhD students, was an international recognition as I was the only Egyptian to present her PhD research work at the 'House of Commons'.
- 4- Years 2001-2004: A full scholarship from the University of Ulster for my PhD that covered my bursary as well as the tuition fees.
- 5- Year 1999: Cairo University Distinction award for the Master degree.
- 6- Year 1995: Cairo University Distinction BSC graduation awards for being the first in the Electrical Power and Machines Department as well as the first of all the Faculty of Engineering graduating students in the year 1995. My grade was Distinction with the first honour degree and an accumulative grade of 94%.
- 7- Years 1990-1991, 1991-1992, 1992-1993 and 1993-1994: Distinction awards from Electrical Power and Machines Department, Cairo University.
- 8- Year 1990: Awarded medals, certificates and a fully paid tour to Europe (Germany, France and Italy) by the 'Egyptian Ministry of Education' for being the first of Math Sector all over Egypt in the High School.
- 9- Year 1987: Awarded a certificate and a trip to Alexandria from Giza Governorate for being the first of all students in high level English preparatory schools in Giza.

## **9. CONFERENCES ATTENDED**

- Presented a technical paper at The International Conference on Electric Power and Energy Conversion Systems (EPECS'09), American University of Sharjah, Sharjah, UAE, November 10-12, 2009.
- A series of national conferences related to Higher Education Enhancement Projects (HEEP) in Egypt, Supreme Council of Universities (SCU), such as HEEPF, QAAP and FLDP as well as for the National Authority for Quality Assurance and Accreditation of Education, Cabinet of Ministers (NAQAAE) during the period of 2005-2008. These conferences were held at various universities in Egypt such as Cairo, Ain-Shams, Alexandria, Benha and Zagazig Universities.
- Presented a technical paper at the International Conference on Signals and Electronic Systems (ICSSES'04), Poznań, Poland, 13-15 September 2004. My attendance was financed by the University of Ulster, United Kingdom.

## **10. SUPERVISION OF POSTGRADUATE STUDENTS**

- Co-supervised a MSC student called Engineer Ahmed Fahmy Bendary, Ministry of Electricity. The Thesis title was 'Adaptive Control of Power System Using FACTS Devices'. Degree was awarded from Electrical Power and Machines Department, Faculty of Engineering, Cairo University in June 2008.
- Currently co-supervising a MSC student called Engineer Abd-El Aziz Lasheen, Ministry of Electricity. He is registered at Cairo University, Faculty of Engineering for Master degree. The Thesis title is 'Voltage Stability Using FACTS Devices'.

## **11. CONSULTANCY**

- Year 2008: a certified peer reviewer for Quality Assurance and Accreditation Project (QAAP) and for the National Authority for Quality Assurance and Accreditation of Education (NAQAAE) in Egypt.
- From November 2005 to April 2007: a consultant for the 'Higher Education Enhancement Project Fund' under the 'Egyptian Supreme Council of Universities'. Excellent experience in consultancy, leadership and practical work was gained while monitoring the technical and financial parts of several projects in different disciplines financed by the IBRD.
- From 2001 to 2004: my PhD degree at the University of Ulster was initially financed in collaboration with 'Alstom' that included consultancy and industrial experience in the area of FACTS design and modelling.