

# RESUME

## **DR. SAMIR A. AL-BAIYAT**

Professor of Electrical Engineering  
Supervisor, Technology Transfer, Innovation and Entrepreneurship

King Fahd University of Petroleum & Minerals  
Dhahran, Saudi Arabia

August 2015

# 1. SUMMARY OF EXPERIENCE RECORD

## 1.1 Personal Data

- NAME: Dr. Samir Alwan Al-Baiyat
- NATIONALITY: Saudi Arabian
- DATE OF BIRTH: 13-02-1956
- EMPLOYER: King Fahd University of Petroleum & Minerals
- DEPARTMENT: Electrical Engineering
- MARITAL STATUS: Married, with four children

## 1.2 Educational Background

- Ph.D. (Electrical Engineering), University of Notre Dame, USA, May 1986.
- M.S. (Electrical Engineering), King Fahd University of Petroleum and Minerals, Saudi Arabia, October 1979.
- B.S. (Electrical Engineering), King Fahd University of Petroleum and Minerals, Saudi Arabia, June 1977.

## 1.3 Positions Held

- Professor, EE Dept., April 2005 – Present
- Associate Professor, EE Dept., January 1994 – April 2005.
- Assistant Professor, EE Dept., 1986 – January 1994.
- Graduate Assistant, Electrical and Computer Engineering Dept., University of Notre Dame, August 1985 - May 1986.
- Lecturer, EE Dept. KFUPM, October 1979 - August 1980.
- Graduate Assistant, EE Dept. KFUPM, June 1977 - October 1979.

## 1.4 Professional Experience

- Summer Student, Saudi ARAMCO, Dhahran, Summer of 1976.
- Power System Engineer, Saudi ARAMCO, Dhahran, Summer of 1977.
- Control Engineer, Saudi ARAMCO, Dhahran, Summer of 1981.
- System Analyst, Saudi ARAMCO, Dhahran, Summer of 1987.

## **1.5. Administrative Positions:**

### **1.5.1 University Administrative Positions:**

- a. Supervisor, Technology Transfer, Innovation and Entrepreneurship, February 2013 - .
- b. Secretary General, International Advisory Board, April 2011- .
- c. Supervisor, Dhahran Techno-Valley, September 2011 - February 2013.
- d. Assistant Supervisor for Public Relations & International Cooperation, September 2010 – September 2011.
- e. Director, International Cooperation Office, September 2010 – .
- f. Dean, College of Engineering Sciences, March 2002 – September 2010
- g. Acting Dean, College of Applied Engineering, March 2002 – September 2010
- h. Director of the University Summer Program, Summer 2009
- i. Director of the University Summer Program, Summer 2007
- j. Director of the University Summer Program, Summer 2006
- k. Chairman, Electrical Engineering Department, September 1995- March 2002
- l. Chairman, Electrical Engineering Department, Summer 1995.
- m. Chairman, Electrical Engineering Department, Summer 1994.
- n. Chairman, Electrical Engineering Department, Summer 1991.
- o. Chairman, Electrical Engineering Department, Summer 1989.

### **1.5.2 National Administrative Positions:**

- a. Member of Electricity Industry Dispute Resolution Committee, (Formed by The Council of Ministers) September 2006 -
- b. Member of the Eastern Province Municipality Council 2005 – 2011.

## 1.6 PROFESSIONAL ACTIVITIES

### 1.6.1 Conference Organization

1. Chairman Organizing Committee,  
Workshop on Selected Topics in Optical Electronics (October 26, 1996,  
KFUPM Dhahran)
2. Chairman, Organizing Committee,  
Workshop on Fuzzy Logic and Its Applications (December 15, 1996,  
KFUPM, Dhahran)
3. Member, Organizing Committee,  
Workshop on Electrical Energy Conservation and Load Management  
(KACST, Riyadh May 6 - 7, 1997).
4. Vice Chairman, Organizing Committee,  
4<sup>th</sup> Annual IEEE Technical Exchange Meeting, (May 20 - 21, 1997, KFUPM  
Dhahran)
5. Chairman, Organizing Committee,  
5<sup>th</sup> Annual IEEE Technical Exchange Meeting, (May 19 - 20, 1998, KFUPM  
Dhahran)
6. Chairman, Organizing Committee,  
6<sup>th</sup> Annual IEEE Technical Exchange Meeting, (April 20 - 21, 1999, KFUPM  
Dhahran)
7. Member of the organizing committee,  
of the Forth Gulf Engineering Conference, Riyadh, February 16-17, 2000.
8. Chairman, Organizing Committee,  
7<sup>th</sup> Annual IEEE Technical Exchange Meeting, (April 18 - 19, 2000, KFUPM  
Dhahran)
9. Chairman, Organizing Committee,  
8<sup>th</sup> Annual IEEE Technical Exchange Meeting, (April 17 - 18, 2001, KFUPM  
Dhahran)
10. Chairman, Organizing Committee,  
9<sup>th</sup> Annual IEEE Technical Exchange Meeting, (April 16 - 17, 2002, KFUPM  
Dhahran)
11. Chairman, Technical Committee,

- Sixth Saudi Engineering Conference, (December 15 - 17, 2002, KFUPM Dhahran)
12. Member of the Steering Committee and Chairman of the Organizing Committee,  
10<sup>th</sup> Annual IEEE Technical Exchange Meeting, (March 22 - 23, 2003, KFUPM Dhahran)
  13. General Vice Chair,  
International Symposium on Wireless Systems and Network (ISWSN'03), KFUPM, Dhahran, March 25-26, 2003
  14. Member of the Steering Committee,  
11<sup>th</sup> Annual IEEE Technical Exchange Meeting, (April 22 - 23, 2004, KFUPM Dhahran)
  15. Member of the Steering Committee ,  
First GCC Conference on Industrial, Electrical and Electronic Conference, (May 13-14, 2003 Bahrain).
  16. Vice Chairman, Steering Committee,  
12<sup>th</sup> Annual IEEE Technical Exchange Meeting, (May 16 - 18, 2005, KFUPM Dhahran)
  17. Vice Chairman of the organizing committee,  
11<sup>th</sup> Annual IEEE Technical Exchange Meeting, (KFUPM, Dhahran, April 24-26, 2004)
  18. Member of the Steering Committee ,  
2<sup>nd</sup> IEEE GCC Conference (November 23-25, 2004 Bahrain)
  19. Member of the Steering Committee and Chairman of the Technical Committee,  
3<sup>rd</sup> IEEE GCC Conference (March 22-25, 2006 Bahrain)
  20. Chairman, Organizing Committee,  
The First Saudi Engineering Forum - 2006, (May 23 - 24, 2006, KFUPM Dhahran)
  21. Member of the Steering Committee,  
4<sup>rd</sup> IEEE GCC Conference (November 11 - 14, 2007 Bahrain)
  22. Member of the Steering Committee,  
Seventh Saudi Engineering Conference, (December 2 - 5, 2007, KSU Riyadh)
  23. Chairman, Organizing Committee,

- The 13TH SAUDI TECHNICAL EXCHANGE MEETING (STEM  
13, April 28 – 29, 2008 KFUPM Dhahran)
24. Chairman, Organizing Committee,  
The Second Saudi Engineering Forum - 2009, (March 28 - 30, 2009, KFUPM  
Dhahran)
  25. Chairman, Organizing Committee,  
The 14TH SAUDI TECHNICAL EXCHANGE MEETING (STEM  
14, June 2 – 3, 2010 KFUPM Dhahran)
  26. Chairman, Technical Committee,  
The Associated Opening Forum with the University 50th Anniversary  
03 - 04 April 2012 KFUPM Dhahran.
  27. General Chair,  
The 14TH SAUDI TECHNICAL EXCHANGE MEETING (STEM  
15, December 17 – 19, 2012 KFUPM Dhahran)
  28. Chairman, Technical Committee,  
The Associated Closing Forum with the University 50th Anniversary  
02 October 2013 KFUPM Dhahran

### **1.6 .2 Professional Societies**

- Member of the Institute of Electrical and Electronic Engineers (IEEE).
- Vice Chairman of IEEE Saudi Arabia Section 1995 – 1997.
- Chairman of IEEE Saudi Arabia Section 1997 – 2002
- Past Chairman of IEEE Saudi Arabia Section 2002 –
- Member of Electrical and Electronics Council in the Engineering Committee  
1995- 1998.
- Chairman of the Board of the Saudi Scientific Society of Electrical Engineers  
2003 -

### 1.6.3 Review Activities

I have reviewed the following articles:

1. "Direct Jordan Form Realization of Multivariable Transfer Functions", for the IEEE Transaction on Education (1984).
2. "Realization of Polynomic Systems with Linear Dynamics", for the IEEE Transaction on Automatic Control (1985).
3. Revised version of paper no. 2 for the IEEE Transaction on Automatic Control (1985).
4. "Multiple Regression Analysis of Electricity Demand in Australia", for the Arabian Journal for Science and Engineering (1990).
5. "Hierarchical Solution of Complex Power Flow Problems", for the Arabian Journal for Science and Engineering (1991).
6. Revised version of paper no. 5 for the Arabian Journal for Science and Engineering (1991).
7. "Modeling and Self-Tuning Control of a Large-Volume Periodic Shuttle Kiln with Nonlinearity and Distributed Parameters", for the International Journal of Modeling and Simulation, 1993.
8. "A Reduction Based PDF Controller Design Algorithm for a Class of Plant Model", 32<sup>nd</sup> IEEE Conference on Decision and Control, 1993.
9. "The Optimal Decentralized Adaptive Control for Load-Frequency of Interconnected Power Systems", for the Arabian Journal for Science and Engineering July 1996.
10. "Self-Tuning Multivariable Minimum Variance Controller for Turbogenerator", for the Arabian Journal for Science and Engineering December 1996.
11. Revised a paper entitled "On H<sub>2</sub> Model Reduction of Bilinear Systems" to the journal AUTOMATICA, May 2001
12. "Student Design Projects in King Abdul Aziz University for Power Engineers", for the Journal of King Saud University, May 2, 2003.
13. "Field Weakening Nonlinear Control of a Separately Excited DC Motor", for 10<sup>th</sup> IEEE International Conference on Electronics, Circuits and Systems, Sharjah, United Arab Emirates, December 2003.
14. "Study of Parameter Effect on Surge Arresters Used in Medium and High Voltage Networks", for the Journal of Umm Al-Qura University, 2004.

15. "Coordinated Generic Fuzzy Logic Control for Static VAR Compensator to Enhance Damping Power System Oscillations", for the Journal of King Abdulaziz University, October 2004.
16. "A Self-Organizing Neural Fuzzy Controller for Dynamic Braking Resistor" for the International Journal of System Science, March 2005.

I have also reviewed the following three research proposals:

1. "Robust Model Reduction of Stochastic Systems", for King Abdulaziz University (1987).
2. "Optimal LQR Output Feedback for Discrete Systems Using Non-standard PI", for the Graduate School of KFUPM, 1993.
3. "Efficient Power-Injection Meter Treatments of Two-Level Power System State Estimation Approach", for the Graduate School of KFUPM, 1994.

## **1.7 Awards and Recognition**

- Prince Mohammad Bin Fahd Prize for Applied Research, 1995-96, "Feasibility Study Electrical Network Interconnection of Mashreq Arab Countries" Submitted to the Arab Fund for Economic and Social Development, Kuwait, 1992.
- IEEE Third Millennium Medal: The IEEE Headquarters (USA), in celebration of the third millennium, gives award. It honors members for their outstanding contribution to the IEEE activities.
- IEEE Services Recognition: The IEEE Headquarters (USA), in recognition for services and contributions towards the advancement of IEEE and the Engineering profession. In an honor for chairing the Saudi Arabia Section for the period 1997 – 2001.

## **2. TEACHING EXPERIENCE**

### **2.1 Courses Taught**

I have taught and coordinated various EE courses in Graduate and Undergraduate levels.

### **2.2 Capstone Projects, Co-op Training and Summer Training Reports:**

I have supervised and examined many senior projects and Co-op students. Also, evaluated a number of summer training reports.



## 2.4 Curriculum Development:

Since joining the Electrical Engineering Department in 1986, I was greatly involved in the curriculum development, specifically in the areas of circuits and control systems where I contributed to a number of courses.

In the circuit courses I helped in restructuring EE 201 and in introducing EE 205 and 207 in 1997 as part of redesigning the circuit area in EE curriculum. Moreover I have revised some of the LAB experiments for EE 201. I have also initiated the purchase and acquisition of many laboratory equipments and components.

In the control group I have contributed in particular to courses EE 380 and EE 550. In the course EE 380 I have modified the course and its materials and currently I am part of a team working in a project to put the course online. I also helped in procuring many laboratory equipments and their components. As far as EE 550, I have taught the course many times and restructured it. I also introduced the use of computer software in the course. While for the rest of the control courses, I was part of the control group during the revision of the curriculum.

**The most important contribution I have made to the advancement of the University is the accreditation from ABET for 18 Engineering Programs in 2010 in which I led the University team in that effort.**

## 2.5 Seminars

1. "Volterra Models in Nonlinear Control Design", International Symposium on Mathematics of Network and Systems, Phoenix, USA, 1987.
2. "Technology Versus Engineering Programs", Riyadh, 1996.
3. "Active and Reactive Power Control of SMES for Stability Improvement" Cambridge, Massachusetts, USA, 1996.
4. "Engineering Programs Evaluation: KFUPM Experience", Symposium on the Development & Enhancement of Engineering Education, Bahrain, February 24-25, 2004.
5. "Incorporating Industry Needs in Applied Engineering Programs", the 11TH IEEE TECHNICAL EXCHANGE MEETING, Dhahran, Saudi Arabia, April 14, 2004.
6. "Industrial Advisory Committee – KFUPM Experience", Work Shop on Means to Implement the Document of Views of HRH Prince Abdullah Bin Abdul Azziz on Higher Education, Jeddah , Saudi Arabia, February 15 - 16 , 2005.

7. "Cooperative Education Experience at King Fahd University of Petroleum & Minerals", the 14<sup>th</sup> World Conference on Cooperative Education, Boston, USA, June 14 – 17, 2005.
8. "New Perspectives on Engineering Education and the Job Market: Challenges, Opportunities", 15th Middle East Oil & Gas Show and Conference( **MEOS**), Baharain March 12 2007.
9. "Involving Stakeholders in Program Lanning And Evaluation", Second National Conference for Quality in Higher Education, Riyadh, October 25 -27, 2009.
10. " International Collaboration Strategy", IAB meeting No. 9, Saudi Aramco, RasTanura, 9-11 January, 2011
11. “The Role of Universities in Creating Technology Entrepreneurship Eco-Systems”, Bader 2nd International Conference on Business Incubation, Riyadh, October 7 - 8, 2012.

## **2.6 M.S. Thesis Supervisory Committee Memberships**

Supervised and a member of 30 Masters Student Committees and two Ph.D. student Committees.

## **2.7 Short Courses Participation:**

1. Industrial Power System Analysis Using Personal Computers, February 11 - 15, 1989.
2. Industrial Power System Analysis Using Personal Computers May 12 -16, 1990.
3. Electrical Engineering for Non-Electrical Engineers May 16 20, 1992.
4. Electrical Engineering for Non-Electrical Engineers, December 3 - 7, 1994.

### 3. RESEARCH

#### 3.1 Papers in Referred Journals

- [J1] **Al-Baiyat, S. A.**, and Rahim, A.H.M.A., “Dynamic Braking Resistor-Reactor Switching Strategies Through a Novel Linear Transformation Technique”, *Electric Machines and Power Systems*, 21 (1993), pp. 543-555.
- [J2] **Al-Baiyat, S. A.**, Farag, A. S., and Bettayeb, M., “Transient Approximation of a Bilinear Two-Area Interconnected Power System”, *Electric Power Systems Research* 26 (1993), pp. 11-19.
- [J3] **Al-Baiyat, S. A.**, Bettayeb, M., and Al-Saggaf, U. M., “New Model Reduction Scheme for Bilinear Systems”, *International Journal of Systems Science* 25 (1994), pp. 1631 - 1642.
- [J4] **Al-Baiyat, S. A.**, and Bettayeb, M., “Application of Recent Model Reduction Techniques to Nuclear Reactors”, *International Journal of Modeling and Simulation* 14 (1994), pp. 65 - 69.
- [J5] El-Amin, I.M., Al-Shehri, A. M., Opoku, G. **Al-Baiyat, S. A.**, and Zedan, F., “Electric Network Interconnection of Mashreq Arab Countries”, *IEEE Power Engineering Review*, (1994), pp.26-28
- [J6] Al-Shehri, A. M., El-Amin, I.M. Opoku, G, **Al-Baiyat, S. A.**, and Zedan, F., “Mashreq Arab Interconnected Power System Potential for Economic Energy Trading”, *IEEE Power Engineering Review*, (1994), pp. 28-30.
- [J7] Farag, A., **Al-Baiyat, S.**, and Cheng, T.C., “Economic Load Dispatch Multiobjective Optimization Procedures Using Linear Programming Techniques”, *IEEE Trans. on Power Systems*, Vol. 10, No. 2, (1995), pp. 731-738.
- [J8] Farag, A.S., and **Al-Baiyat, S. A.**, “Optimal Design of Power Systems Under Constraints of Reliability and Cost”, *Energy Convers. Mgmt.* Vol. 38, No. 7, (1997), pp. 637-645.
- [J9] Abdel-Magid, Y. L., Abido, M.A., **Al-Baiyat, S. A.**, and Mantawy, A. H., “Simultaneous Stabilization of Multimachine Power Systems via Genetic Algorithms” *IEEE Trans. On Power Systems*, Vol. 14, No. 4, (1999), pp. 1428-1437.
- [J10] Rahim, A.H.M.A., and **Al-Baiyat, S. A.**, “Dynamic Brake Switching Strategies for Stabilization of Power Systems Using Artificial Neural Networks”, *Expert Systems with Applications* Vol. 18, (2000), pp. 101 – 109.

- [J11] Rahim, A.H.M.A., Nowicki, E. P., and **Al-Baiyat, S. A.**, “Damping Electromechanical Oscillations of a Power System with SMES”, *International Journal of Power and Energy Systems*, Vol. 20, No. 3, (2000), pp.123 – 130.
- [J12] Rahim, A.H.M.A., Bakhashwain, J. M., and **Al-Baiyat, S. A.**, “Centralized and Decentralized Training Strategies of Artificial Neural Networks for Transient Stability Assessment”, *Association for the advancement of Modeling & Simulation techniques in Enterprises (A.M.S.E.)*, Vol. 43, No 3,4, ( 2000), pp. 15-30.
- [J13] Rahim, A.H.M.A., **Al-Baiyat, S. A.**, and Al-Maghrabi, H. M., “Robust Damping Controller Design for a Static Compensator”, *IEE Proc.-Gener. Transm. Distrib.*, Vol. 149, No. 4, (2002), pp. 491 – 496.
- [J14] **Al-Baiyat, S. A.**, “Model Reduction of Bilinear Systems Described by Input-Output Difference Equation”, *International Journal of Systems Sciences* Vol. 35, No. 9, (2004), pp. 503 – 510.
- [J15] **Al-Baiyat, S. A.**, “Design of a Robust SVC Damping Controller Using Nonlinear  $H_{\infty}$  Technique”, *Arabian Journal for Science and Engineering*, Vol. 30. No. 1B, (2005), pp. 65-80.
- [J16] **Al-Baiyat, S. A.**, “Power System Transient Stability Enhancement by STATCOM with Nonlinear  $H_{\infty}$  Stabilizer”, *Electric Power Systems Research*, Vol. 73, No. 1, (2005), pp. 43 – 52.
- [J17] Z. Al-Hamouz, N. Al-Musabi, H. Al-Duwaish and **S. Al-Baiyat**, “On the Design of Variable Structure Load Frequency Controllers by Tabu Search Algorithm: Application to Nonlinear Interconnected Models”, *Electric Power Components and Systems*, Vol. 33, No. 11, November 2005, pp. 1253-1267.
- [J18] **Al-Baiyat S.A.**, and Rahim A.H.M.A., “Design of a Roubst Fixed-Parametr SVC Damping Controller through Graphical Loop-Shaping Technique”, *AMSE Journal on Advances in Modeling and Analysis, Series C*, Vol. 60, no. 5, pp. 43-58, 2005.
- [J19] Rahim A.H.M.A., Bakhashwain J. M., and **Al-Baiyat S. A.**, "Robust Damping Controls for a Unified Power Flow Controller," *International Journal of Emerging Electric Power Systems*, Vol. 6: No. 2, August 2006.
- [J20] Rahim A.H.M.A., and Al-Baiyat S. A., " Dynamic Integration and Control of Fixed-Speed Wind Generation System with Multimachine System," *Research & Reviews: Journal of Power Electronics & Power Systems* Volume 1 Issue 2, November 2011, Pages 1-9.

- [J21] Rahim A.H.M.A., and **Al-Baiyat S. A.**, "An Adaptive Neural Network Based Energy Storage Control for Operation Enhancement of a Multi-Generator AC and Wind Power System," Australian Journal of Basic and Applied Sciences, 7(6): 211-222, 2013.

### 3.2 Papers in Conferences

- [C1] Farag, A., and El-Baiyat, S., "Interactive Short-Circuit Program for 1000 Buses and 1000 Lines", ASME Proceedings on Advances in Computer Technology, 1980, Volume 1, pp. 135-144, San Francisco, USA.
- [C2] **Al-Baiyat, S. A.**, and Sain, Michael K., "An Application of Volterra Series to the Design of Nonlinear Feedback Controls", Proceedings of the Twenty-Third Annual Allerton Conference on Communication, Control, and Computing, (1985), pp. 103-112 Monticello, Illinois, USA.
- [C3] **Al-Baiyat, S. A.**, and Sain, Michael K., "A History of Inverse Properties in System Models", Proceedings of the Sixteenth Annual Pittsburgh Conference on Modeling and Simulation, (1985), pp. 495-499, Pittsburgh, USA
- [C4] **Al-Baiyat, S. A.**, and Sain, Michael K., "Control Design with Transfer Functions Associated to Higher Order Volterra Kernels", Proceedings of the 25th IEEE Conference on Decision and Control, (1986), pp. 1306 - 1311, Athens, Greece.
- [C5] **Al-Baiyat, S. A.**, and Sain, Michael K., "A Volterra Method for Nonlinear Control Design", Preprints IFAC Symposium on Nonlinear Control System Design, (1989), pp. 125 - 130, Capri, Italy.
- [C6] **Al-Baiyat, S. A.**, and Rahim, A. H. M. A, "Design of a Controller for Transient Stability Augmentation of Power Systems", Proceedings of Middle East Power System Conference, (1989), pp. 282 - 285, Cairo, Egypt.
- [C7] Al-Ali, A. R., Alakhdar, S. Z., and **Al-Baiyat, S.**, "Neural Network Implementation Using Microprocessor-Based Systems", Proceedings of the Second International Conference on Automation, Robotics and Computer Vision, (1992), pp. NW-1.5.1-3, Singapore.
- [C8] **Al-Baiyat, S. A.**, and Bettayeb, M., "A New Model Reduction Scheme for K-Power Bilinear Systems", Proceedings of the 32nd

IEEE Conference on Decision and Control, (1993), pp. 22 - 27, San Antonio, Texas, USA.

- [C9] Al-Shehri A. El-Amin I. M., **Al-Baiyat, S. A.**, Opoku, G., Abdul-Majeed, M. A., and Zedan, F., “Opportunities for Electric Energy Trading in the Mashreq Arab Countries”, Proceedings of CIGRE First Regional Meeting of Arab Region, Cairo, Paper # 2, January 21-23, 1995.
- [C10] Bettayeb, M., Bakri, T., Clarke, D. J., and **Al-Baiyat, S. A.**, “Future Perspectives of Distributed Control Systems Software for the Process Industry”, Proceeding of the fourth Saudi Engineering Conference, Vol. III, pp. 167-174, Jeddah, November 1995.
- [C11] Rashid, M. H., **Al-Baiyat, S. A.**, Abulhamayel, H. I., Al-Nafa, M., and Al-Alwani, J., “Criteria for Accrediting Programs in Engineering Technology”, Proceedings on the Role of Technical Colleges in Man Power Development, April 28-29, 1996, Riyadh.
- [C12] Rashid, M. H., **Al-Baiyat, S. A.**, Abulhamayel, H. I., and Al-Nafa, M., “Technology Versus Engineering Programs”, Proceedings on the Role of Technical Colleges in Man Power Development, April 28-29, 1996, Riyadh.
- [C13] Rahim, A.H.M.A., and **Al-Baiyat, S. A.**, “Control of Power Oscillations with Superconducting Magnetic Energy Storage Systems”, Proceedings of the 11<sup>th</sup> International Conference on Systems Engineering, University of Nevada, Las Vegas, pp. 336- 341, July 1996.
- [C14] Rahim, A.H.M.A., **Al-Baiyat, S. A.**, and Asooly, H.M, “Active and Reactive Power Control of SMES for Stability Improvement”, Proceedings of the 28th Annual North American Power Symposium, November 1996, pp. 459-465, Cambridge, Massachusetts, USA.
- [C15] Rashid, M. H., and **Al-Baiyat, S. A.**, “Power Electronics Laboratory Using PSpice”, Proceeding of the Frontiers in Education Conference, 1996. FIE '96. 26th Annual Conference., pp. 534-537, Salt Lake City, USA, November 1996.
- [C16] Rahim, A.H.M.A., and **Al-Baiyat, S. A.**, “Centralized and decentralized Training Strategies of BP and RBF Neural Networks for Transient Stability Assessment”, IASTED INTL. Conf. On Modeling & Simulation, Banff, Canada, pp. 40-43, July 1997.
- [C17] Shwehdi, M. H., Bakhshwain, J. M., and **Al-Baiyat, S. A.**, “Design and Development of a New Power Line Data Communication Interface”, Proceeding of 33<sup>rd</sup> Intersociety Energy Conversion Engineering Conference (IECEC), August 2-6, 1998, Colorado Spring, Co, USA.

- [C18] Al-Ali, A. R., and **Al-Baiyat, S. A.**, “Year 2000 Problem in Process Control and Automation, Saudi Second National Symposium on Y2K, Jubail Industrial City, September 1998.
- [C19] Rahim, A.H.M.A., **Al-Baiyat, S. A.**, and Kandlawala, F. M. “A Robust STATCOM Controller for Power Dynamic Performance Enhancement”, Proceeding of the 2001 IEEE Power System Engineering Society Summer Meeting, Vancouver, Canada, pp. 887-892, July 2001.
- [C20] **Al-Baiyat, S. A.**, “Model Reduction Scheme of State-Affine Systems”, Proceedings of the 14<sup>th</sup> International Conference on Computer Applications in Industry and Engineering (CAINE-2001), Las Vegas, Nevada, USA, pp. 262-267, November 2001.
- [C21] Rahim, A.H.M.A., and **Al-Baiyat, S. A.**, “Damping of Power System Sub-Synchronous Resonance Oscillations through Fuzzy-Logic Dynamic Brake Control,” Proceedings of Second International Conference on Electrical and Computer Engineering (ICECE 2002), Dhaka, pp. 20 -23, December 2002.
- [C22] Rahim, A.H.M.A., **Al-Baiyat, S. A.**, and Kandlawala, F. M. “Parallel FACTS Devices for Power System Stability Enhancement”, Proceeding of the 1st IEEE GCC Conference, Bahrain, Article # 42, May 13-15, 2003.
- [C23] Rahim, A.H.M.A. and **Al-Baiyat, S. A.**, “A Robust Design of a Static VAR Compensator Controller for Power System Stability Improvement”, Proc. of the Summer Computer Simulation Conference (SCSC’03), pp. 107-112, Montreal, Canada, July 2003.
- [C24] Al-Musabi, N. A., Al-Hamouz, Z. M., Al-Duwaish, H. N., and **Al-Baiyat, S. A.**, “Variable Structure Load Frequency Controller Using Particle Swarm Optimization Technique”, Proceedings of the 2003 10th IEEE International Conference on Electronics, Circuits and Systems, Vol. 1, pp. 380-383, Sharjah, United Arab Emirates, December 2003.
- [C25] Naji A. Al-Musabi, H. N. Al-Duwaish, Z. M. Al-Hamouz, **Samir Al-Baiyat**, “Variable Structure Load Frequency Controller: Optimal Design and Chattering Reduction Using Particle Swarm Optimization Algorithm”, OPTIM’04, Brasov, Romania, May 2004.
- [C26] Al-Musabi, N. A., Al-Duwaish, H. N., Al-Hamouz, Z. M., and **Al-Baiyat, S. A.**, “Optimal Design of Variable Structure Load Frequency Controller with Nonlinearities using TABU Search Algorithm”, 1<sup>st</sup> International Conference on Informatics in Control, Automation and Robotics (ICINCO 2004) , Setubal, Portugal, August 2004.

- [C27] Rahim A.H.M.A., and **Al-Baiyat, S.A.**, “A Robust Damping Controller Design for a Unified Power Flow Controller”, Proc. 39th Universities Power Engineering Conference, Bristol, UK, September, 2004 .
- [C28] Rahim, A.H.M.A., **Al-Baiyat, S.A.** and Kandlawala, M. F., “A Fuzzy STATCOM Control for Power System Damping Enhancement”, Proceedings of the 2<sup>nd</sup> IEEE GCC Conference, pp. 1-5, Bahrain, November 2004.
- [C29] Otaru, M. U, Al-Musabi, N. A., and **Al-Baiyat, S. A.**, “Robust PID Stabilizer Design Using Genetic Algorithms”, Proceedings of the 2<sup>nd</sup> IEEE GCC Conference, pp. 33-36 , Bahrain, November 2004.
- [C30] **Al-Baiyat, S.A.**, Abuelma'atti, M.T., El-Suwailem, O.A., Budaiwi, I.M., Said S.A.M., and Abd El-Barr M.I., “Cooperative Education Experience at King Fahd University of Petroleum & Minerals”, Proceeding of the 14<sup>th</sup> World Conference on Cooperative Education, Boston, USA, June 2005.
- [C31] Rahim A.H.M.A., and **Al-Baiyat S. A.**, "Adaptive Stabilizing Control of Power System through Series Voltage Control of a Unified Power Flow Controller", Summer Computer Simulation Conference, SCSC'06, pp. 251-256, ISBN 1-56555-307-1, Calgary, July/Aug 2006.
- [C32] Iyad Alzaharnah, Ian Proctor, Halim Hamid Redhwi, and **Al-Baiyat S. A.**, "Dhahran Techno Valley – Strategic Venue for Knowledge Creation and New Technologies", Gulf Research Meeting, University of Cambridge, August 2014.

### 3.2 KFUPM Funded Research Projects:

Robust Shunt Connected FACT Devices for Power System Damping Improvements **December 2002 - , Role CI**

### 3.3 Externally Funded Projects

1. “Feasibility Study of Electrical Network Interconnection of Mashreq Arab Countries”, **Funded by Arab Fund for Economic and Social Development, September 1989 - June 1992.**
2. “Evaluation of Energy Trading Benefits Within Some Mashreq Arab Countries”, **Funded by Arab Fund for Economic and Social Development, Duration: 20 Months, November 1992 - March 1995.**
3. “Utilization of Peak and Off-Peak Electricity Prices”, On-going **Funded by Saudi Electricity Company.**



4. “Study for Developing Academic Programs for King Fahd Naval Academy”, **Funded by King Fahd Naval Academy, April 2004 - 2006.**

#### 4. UNIVERSITY, DEPARTMENTAL AND PUBLIC SERVICE

##### 4.1 Participation in University Standing Committees

	<b>Committee Name</b>	<b>Year</b>	<b>Role</b>
1.	The Library Committee	1986-1987	Member
2.	The Library Committee	1988-1989	Deputy Chairman
3.	The Library Committee	1989-1994	Chairman
4.	The Library Acquisition Committee	1989-1994	Member
5.	The Graduate Council Committee	1995-2000	Member
6.	Research Institute Council	1999-2002	Member
7.	Graduate Studies Council	2000-2001	Member
8.	Academic Committee	2001-2010	Member
9.	Academic Text-Books Committee	2002-2010	Member
10.	Faculty Affairs Committee	2002-2010	Member
11.	University Board	2002-2010	Member
12.	Appointment of Graduate Assistants and Lecturers Committee	2002-2006	Member
13.	Planning Committee	2002-2010	Member
14.	Faculty Over 60 years	2004-2006	Member
15.	The IP Policy and Guidelines Oversight Committee	2012 -	Member
16.	Supervisory Committee on Student Exchange Program	2013 -	Member
17.	<b>The Communication Panel</b>	<b>2012 -</b>	Member

## 4.2 Participation in University Ad-Hoc Committees

	Committee Name	Year	Role
1.	Committee on Excessive Withdrawal of Courses by Students at KFUPM	1989-1990	Member
2.	Committee on Computer Usage	1997-1998	Member
3.	Committee on Summer Issues	1998-1999	Chairman
4.	Process Control Group	1997-1998	Chairman
5.	Process Control Group	1998-1999	Chairman
6.	Committee on Summer Issues	1999-2000	Member
7.	Committee on Establishment of Technology & Innovation Center (TIC) at KFUPM	2001-2002	Chairman
8.	Committee on Development of Guidelines for students Seeking Transfer to the Diploma Program and Vice-Versa	2001-2002	Chairman
9.	Committee on Applied Engineering & Coop Program	2002-2003	Chairman
10.	Committee on KFUPM Policy and Procedures on Graders	2002-2003	Member
11.	Committee on University Teaching Load	2003-2004	Member
12.	Committee on Faculty Recruitment Process	2003-2004	Chairman
13.	Committee on Ranking of Lecturers	2004-2005	Chairman
14.	ABET Coordination Committee	2006-2010	Chairman
15.	ABET Steering Committee	2006-2010	Chairman
16.	Committee on International cooperation	2012- 2015	Chairman
17.	Supervisory Committee On Student Exchange Program	2012-	Member
18.	Committee To Study Relationship Between DTV Companies and KFUPM Departments	2012- 2013	Member
19.	Saudi Aramco-KFUPM Coordination	2008-2012	Member
20.	Saudi Aramco-KFUPM Board	2013 -	Member

## 4.3 Participation in College Committees

	Committee Name	Year	Role
1.	Ad hoc Committee on Lecturer and Academic Support Staff Ranking	1991-1992	Member
2.	Adhoc Committee on Space Utilization in College of Engineering	1993-1994	Member
3.	Adhoc Committee on Space Utilization in College of Engineering	1994-1995	Chairman
4.	College of Engineering Council	1995-2002	Member
5.	College of Engineering Council	2002-2010	Chair

#### 4.4 Participation in Department Standing Committees

	<b>Committee Name</b>	<b>Year</b>	<b>Role</b>
1.	Project/Seminar Committee	1986-1987	Chairman
2.	Laboratory Supervision Committee	1987-1988	Chairman
3.	Graduate Admission Committee	1987-1988	Member
4.	Laboratory Supervision Committee	1988-1989	Chairman
5.	Laboratory Supervision Committee	1989-1990	Chairman
6.	Laboratory Supervision Committee	1990-1991	Chairman
7.	Laboratory Supervision Committee	1991-1992	Chairman
8.	Computer Utilization Committee	1991-1992	Member
9.	Laboratory Supervision Committee	1992-1993	Chairman
10.	Computer Utilization Committee	1992-1993	Member
11.	Laboratory Supervision Committee	1993-1994	Chairman
12.	Computer Utilization Committee	1993-1994	Member
13.	Laboratory Supervision Committee	1994-1995	Chairman
14.	Graduate Admission Committee	1994-1995	Member

#### 4.6 Participation in National and International Committees

	<b>Committee Name</b>	<b>Year</b>	<b>Role</b>
1.	Dean's Committee for the Colleges of Engineering, Architecture, Planning and Computer of the Arab-Gulf Cooperation	2002-2003	Member
2.	Committee to Study the Feasibility of Forming the Gulf Cooperation Council Accreditation Board for Engineering and Technology	2002-2003	Member
3.	Scholarship for Outstanding Students Ministry of Higher Education	2003-2004	Member
4.	Member of KAUST Academic Leadership Committee 2008 -2010.	2008-2010	Member
5.	Committee on Reviewing the Regulation of the Saudi Electricity System, Ministry of Water and Electricity.	2011-2013	Member
6.	Steering Committee, Dhahran Techno Valley Company	2014-	Member
7.	Steering Committee, Saudi Arabia Advanced Research Alliance (SAARA)	2014-	Member