

CURRICULUM VITAE

Saad Shakir Tawfiq

*Electrical Engineering/Faculty of Engineering and
Technology,
Al-Zaytoonah University of Jordan, Amman, Jordan*

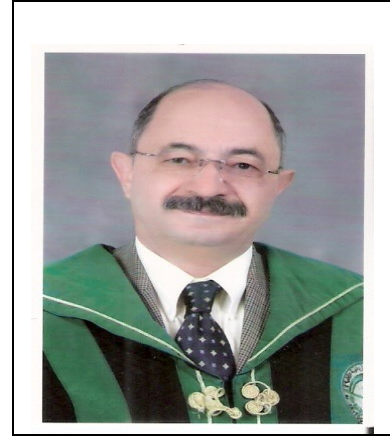
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1. Personal Data

Date of Birth: 26/1/1951
Nationality: Iraqi

2. Education

- Ph.D. (Electrical Engineering/Automatic Control) 1980, University of Sussex, Brighton, U.K.
- M.Sc. (Communication Engineering) 1975, Baghdad University, Baghdad, Iraq.
- B.Sc. (Electrical Engineering) 1972, Baghdad University, Baghdad, Iraq.

3. Ph.D. Thesis

- "Time Optimal Control of a Crane"; 1980, University of Sussex, Brighton, U.K.



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4. Employment

Academic Positions

- Assistant Professor, Electrical Engineering, Al-Zaytoonah University of Jordan, Amman, Jordan, June 17, 2009 – now
- Senior Lecturer, School of Systems and Control, University of Technology, 1981-2007.

Administrative Positions

- **1972:** Field Engineer in Um Qaser cement factory.
- **1973–1974:** Part time sales engineer for Thorn EMI, Dormansmith, & Delta Enfield Cables.
- **1975–1976:** Design engineer at Husham Muneer Consultancy Bureau.
- **1981–1984:** Head of the Measurement & Control Department of the 2FE initiative within the Research & Development Directorate of the Iraqi Atomic Energy Commission (IAEC).
- **1984–1988:** Head of the design & construction team for Instrumentation & control of Al-Jazzira project for Uranium purification. This is in addition to previous responsibilities.
- **1989–1991:** Head of a special team to debug the source feed system of the main isotope separation project in the Tuwaita prototype separators & later in the Tarmya production facility.
- **1991:** Member of the Higher Committee for the Rehabilitation of Iraq's electricity power production plants.
- **1991:** Member of the Nuclear Program destruction team east of the Thirhar Lake.
- **1992–1994:** Head of the Industrial Controls Department of the Electrical Engineering Design Center (EEDC).
- **1994–2003:** Director of EEDC which was later in 1996 renamed Al-Khazin Center. Al-Khazin engaged mainly in electrical & industrial projects with an elite staff of electrical engineers.
- **2003** Private enterprise with a foreign investor established a bottled water production plant named Alpine currently in operation.
- **1981–2006:** Academic activity teaching at the University of Technology and Nahrain University.
- **2003–2007:** Director of Al-Khazin Center, now part of the Ministry of Industry & Minerals (MIM).
- **2006-2007** Freelance consultant to several power and construction contractors resident in Jordan designing and supervising projects in Iraq. Electrical designs for



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new Iraqi military camps supervised by AMEC.

- **2007-2009** Lead I&C consultant/designer Al-Qudus expansion project, Uruk-Baghdad joint venture, project financed and supervised by the DoD. Responsible for all BoP electrical and control detailed designs. 2xGE Frame 9 units.
- **2009-2010** I&C and electrical engineering consultant for Al-Rasheed gas turbine project.
- **2010-2012** I&C and electrical engineering consultant for Al-Qudus 3 (4xGE Frame 9)
- **2009-2012** Assistant Professor of control and electrical engineering at Al-Zaytoonah University Jordan. 2009-2013 IIE/ISRF fellowship in Jordan.
- **2012-Present** Professor of control and electrical engineering at Al-Zaytoonah University Jordan. Also consultancy for various projects in Iraq.
- **2017- Consultant** Temporary water supply system to Bessmaya Thermal Power Plant Baghdad.

5. Research Interests

- Dynamic optimization techniques.
- Neural networks and fuzzy control.
- Robotics.
- Adaptive and self-tuning controllers for process control applications.
- Sliding mode controllers.
- Drones flight control systems.

6. Membership in Scientific Societies and Associations

- Member of the Iraqi Engineering Union (top grade Consultant)
- IEEE member.
- ISA member.
- Founding member of the IEDC (NGO).

7. Fellowships and Scholarships

- Ministry of Higher Education (Iraq) PhD scholarship (1977-1980).
- Fellowship of the IIE-ISRF 2009-2011.

9. Teaching Experience

- *Undergraduate Courses*

1. Electrical Circuits



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2. Problem solving using MATLAB
3. Classical Control Theory
4. Power Engineering for Non-EE students
5. Advanced Control Systems
6. Digital Control Systems
7. Process Control Techniques
8. Principles of Electrical Engineering
9. Electrical Machines
10. Electrical Networks and Wiring Installations
11. Power Engineering Lab
12. Electrical Circuits Lab
13. Electronic Circuits Lab
14. Electrical Machines Lab
15. Control Engineering Lab
16. Technical Writing

- ***Postgraduate Courses***

- 1- Robotics
 - 2- Computer control
 - 3- System Identification and Modeling
 - 4- Advanced Process Control
 - 5- Programmable Logic Controllers
- Supervised 43 M.S. students and 6 Ph.D. students.

10. Publications

1. "Experimental Crane Control", I.E.E. conference on martial handling 1978
2. "Gas Sold Fluidized beds for Domestic Air-Conditioning", IAEC, Iraqi/Romanian conference Tuwaith 1983.
3. "Manipulator Analysis and Control" Iraqi research council, Electronic research center, conference on Industrial Applications, 1986.
4. "Implementation of a self-tuning regulator on a practical flow loop", ISMM conference, Switzerland, 1990.
5. "Time Optimal Control of a Torsion shaft", Instrumentation and control J., 1991.
6. "Design Procedures in PC3 Projects", conference on procedures for design and construction of future industrial projects, Ministry of Industry, 1992.
7. "Kinematics Analyses and Interfacing for an Articulated manipulator", Engineering and technology journal, 1992.
8. "Control systems in Nassirya TPS", third symposium on reconstruction of electricity sector, Baghdad, 1992.



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9. "Drum level measurement system for Nassirya TPS", fourth scientific conference for electricity and industry sectors, 1993.
10. "Orifice flow meter sizing and computations", IAEC, directorate 3000, 1982.
11. "Ultrasonic level measurement system", IAEC, directorate 3000, 1984.
12. "Auto correlation flow measurement", IAEC, directorate 3000, 1985.
13. "Control system design package (CSP)", IAEC, directorate 3000, 1984.
14. "CAMAC PID controller", IAEC, directorate 3000, 1986.
15. "Optimal sampling", IAEC, directorate 3000, 1985.
16. "Source oven set-point controller", IAEC, PC3, 1988.
17. "Fault tree analysis for P101", IAEC, directorate 3000, 1985.
18. "Hall probe calibration oven controller", IAEC, directorate 3000, 1982.
19. "Adaptive and self tuning controllers", IAEC, directorate 3000, 1987.
20. "Path planning and control of robot arm using neural network", first specialized conference in control, Engineering and Technology journal, 1999.
21. "Replacement control system for Gas-turbine generating unit type GE frame-5", U.O.T., sixth Iraqi Technology conference on computer applications and information technology, 2000.
22. "Using a Micro controller for computation of load limits of Khalid Bin Al-Waleed 350t floating crane", U.O.T., sixth Iraqi technology conference on computer applications and information technology, 2000.
23. "Elevator control by using programmable logic controllers", U.O.T., sixth Iraqi technology conference on computer applications and information technology, 2000.
24. "Expert system for fault diagnosis of electrical machines by using neural network" U.O.T., third national conference on computers, communications and control systems engineering, 2002.
25. "CSTR control using N.N." U.O.T., third national conference on computers, communications and control system engineering, 2002.
26. "Design of sliding mode controller for oscillatory systems", Baghdad second Iraqi conference on technology, electrical engineering and applications, 1996.
27. "Sliding Mode control using a PLC", Baghdad, Third Iraqi conference on technology electrical engineering and application, 1997.
28. "Electromagnetic compatibility", IEE, Delta journal, India 2002.
29. "Shielding of electronic components", IEE, Delta journal, India, 2002.
30. "Nonlinear Modeling and Control of Overhead Traveling Crane by Fuzzy Logic Controllers" To be published.



11. Reports and Articles

1. "Special Ventilation for nuclear projects", IAEA, 1984.
2. "Basic design report for project P266", PC3, 1988.
3. "Document handling procedure for I&C design", directorate 3000, IAEA, 1985.
4. "Technical report for (FAT) testing of control panels for P212 (Al-Jazzira), project", PC3, 1988.
5. "Technical report for (FAT) testing of interlock and sequencing PLC system of P212 (Al-Jazzira) project", PC3, 1988.
6. "Technical report for (FAT) testing of the PC control system for project P244, PC3, 1989.
7. "Control and measurement report for project P101", IAEA, 1984.
8. "Control and measurement report for projects P102, P103", IAEA, 1985.
9. "Wiring procedure and design documents for source ovens and holders of project P104", PC3, 1988.
10. "Wiring procedure and design documents for source ovens and holders of project P112", PC3, 1989.
11. "Wiring procedure and design documents for source ovens and holders of project P116", PC3, 1990.
12. "Baiji fertilizer plant boiler report", Ministry of Industry and Minerals, Deputy Minister Office, 1992.
13. "Report on the computer control systems for Shirkat new SCD sulfur plant", Ministry of Industry and Minerals, Deputy Minister Office, 1992.
14. "Report on the solution to the computer problem at Shirkat SCD sulfur plant", General establishment for the production of sulfur, 1992.
15. "Feasibility report on the use of Hartha TPS control systems (Unit 2& 3) for Musaib TPS units 1 & 2", The general establishment for electricity production, 1992.
16. "Control Options Report for the special steel rolling mill project", Deputy Head of MIC, 1993.
17. "Technical report on the design difficulties in the thick copper rod production project", MIC, Al-Shaheed factory, 1992.
18. "Technical report on the firebrick lining of ovens in the thick copper rod production project", MIC Technical Directorate, 1992
19. "Control and measurement report for the Mini refineries project", Saad state Company, 1999.
20. "Al-Khazin center development", Saad state Company. 1999.



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21. "New Heel Angle measurement system for the Giant Khalid Bin Al-Waleed floating Crane", Iraqi ports administration, 1999.
22. "Design report for Switch mode power supplies for a kofman source", Al-Khazin center, 1999.
23. "Design report for power supplies for the Ion implement", Al-Khazin center, 1999.
24. "Design report for power supplies for Al-Hijab Jammer project", Al-Khazin center, 1999.
25. "Design report for Dispatch PC control system for Al-Meshtal substation", General Company for Electricity Projects, 1996.
26. "Report on protection system for Dura TPS", MOE, 2000.
27. "Control system for a 200MW Boiler a design report", Heavy industries Company, 2000.
28. "A study on the control of the main dispatch center and substations in Al-Qaqa Company", Al-Qaqa Company, 2000.
29. "Operating manual for Ababil launcher training system", Bin Firnas Company, 2000.
30. "Ion implanter control system", Al-Tahadi Company, Al-Khazin center, 2000.
31. "Rehabilitation report of the open loop control system of Unit NO.1, Al-Musaib TPS", Al-Khazin center, 2000.
32. "Design Report for the Control System for the Electro Slag Remelting Furnace in Al-Sumud Company", MIC Minister's Office, Al-Khazin, 2002.
33. "Living in Iraq before, during & after Saddam", the Crimson, Harvard University, 2004
34. "Several notes on the rehabilitation of the electricity sector", NYT, 2004.
35. ISG Final Report Google Dr. Saad Shakir Tawfiq.

12. Decorations

1. Decorated for outstanding achievements in the nuclear program Jaber Bin Hayan Bronze medal 1981-1987.
2. Decorated for outstanding achievements in the nuclear program Jaber Bin Hayan Gold medal 1987-1991.
3. Decorated for outstanding achievements in the rehabilitation of the electricity sector in 1992 Gold Medal.
4. Decorated for scientific achievements in 1996.
5. Decorated and recognized as an achieved scientist in 1998, 2001, 2002.
6. Co-author of the FFCD1996 and later the CAFCD 2002.



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