

MAGDY M. ABDELHAMEED

Professor, Automatic Control and Mechatronics
Design and Production Engineering Department,
Faculty of Engineering
Ain Shams University (ASU)
Cairo, Egypt
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EDUCATION

- Ph.D. (1994) - Design and Production Engineering Department, Faculty of Engineering, ASU. Major Field: Mechatronic Control Systems.
Thesis: "A New Design Approach for Mechatronics Control System".
- M.Sc. (1989) - Design and Production Engineering Department, Faculty of Engineering, ASU. Major Field: Mechanisms, Dynamics, Vibration and Robotics.
Thesis: "Study of Dynamic Characteristics of Planar Mechanisms by Adding Balancing Weights and springs"
- B.Sc. (1983) - Design and Production Engineering Department, Faculty of Engineering, ASU. Grade: Distinction 93% with Honor Degree
Rank: First in a class of 37 candidates

POSITIONS HELD

- Vice Director of ETCP, Ministry of Higher Education, 01/07/2011 to Present.
- Visiting Professor, 2009, 26/8/2009-26/09/2009, University of Illinois at Chicago, Mechanical Engineering Dept., Chicago, Illinois. USA.
- Visiting Professor, 2008, 20/6/2008-01/10/2008, University of Illinois at Chicago, Mechanical Engineering Dept., Chicago, Illinois. USA.
- Visiting Professor, 2007, 15/7/2007-15/09/2007, University of Illinois at Chicago, Mechanical Engineering Dept., Chicago, Illinois. USA.
- Director of Engineering Materials and Metallurgy Unit, Faculty of Engineering, ASU, 08/2006- 12/2010.
- Professor of Automatic Control and Mechatronics, 10/2005- Present, Ain Shams University, Faculty of Engineering, Design & Production Engineering Dept.
- Visiting Professor, 2005, 25/6/2005-29/8/2005, University of Illinois at Chicago, Mechanical Engineering Dept., Chicago, Illinois. USA.
- Visiting Professor, 2004, 29/6/2004-29/8/2004, University of Illinois at Chicago, Mechanical Engineering Dept., Chicago, Illinois. USA.
- Visiting Professor, 2003, 1/6/2003-4/10/2003, University of Illinois at Chicago, Mechanical Engineering Dept., Chicago, Illinois. USA.
- Visiting Professor, 2000, three months, University of Illinois at Chicago, Mechanical Engineering Dept., Chicago, Illinois. USA.

- Associate Professor, 8/2000-10/2005, Ain Shams University, Faculty of Engineering, Design and Production Engineering Dept.
- Visiting Professor, 1999, four months, University of Illinois at Chicago, Mechanical Engineering Dept., Chicago, Illinois. USA.
- Assistant Professor of Mechanical Engineering, 5/1994- 8/2000, Ain Shams University, Faculty of Engineering, Design & Production Engineering Dept.
- Teaching Assistant, 1989-1994; Ain Shams University, Faculty of Engineering, Design and Production Engineering Dept.
- Demonstrator, 1985-1989; Ain Shams University, Faculty of Engineering, Design and Production Engineering Dept.

HONORS, AWARDS and PROJECTS

- Joint European Projects, TEMPUS, MEDA 2004 Curriculum Development, “Curricula Development for a New Mechatronics B.Sc. Major”, 09/2005-09/2008, 474,240.00Euro, Coordinator.
- Project Award from the US-Egypt Science and Technology Joint Fund in cooperation with the US National Science Foundation and Egyptian Ministry of Scientific Research under Project INF9-001-007, 7/2005-7/2008, \$58,335.00, Egyptian Principal Investigator: “Diagnosis and Maintenance of Relay Ladder Logic Programs and PLC Ladder Diagrams Using Artificial Neural Networks”.
- Project Award from the US-Egypt Science and Technology Joint Fund in cooperation with the US National Science Foundation and Egyptian Ministry of Scientific Research under Project OTH5-014-001 (7/2002-7/2005): “Design, Fabrication and Intelligent Control of Nanometric Precision Positioning Devices”.
- Egyptian Government Academic Mission (2/99-6/99).
- Scholarship, Egyptian Government (9/75-5/78).
- Scholarship, Egyptian Government (9/78-5/83).
- Ideal Student Prize, ASU, Hostel House (1983).
- Postdoctoral Academic Mission, Egyptian Government (1998).

RESEARCH INTERESTS

Motion Control, Mechatronics, Nanotechnology, Applications of Artificial Intelligence in Control, Discrete Event System Control, Robotics and Automation, Hydraulic and Pneumatic Control, Robot Vision.

RESEARCH SUPERVISION

Supervisor of 12 M.Sc. Postgraduates and Four Ph.D. postgraduates. The area of research lies in the Mechatronics, Control, Discrete Event Systems and Automation of Industrial Manufacturing Systems.

PUBLICATIONS

I. Published International Journal Papers:

- Mostafa Abdelaziz, Magdy M. Abdelhameed, Farid A. Tolbah. "A Hybrid Fuzzy Robust Control for Piezoelectric Actuators." J Am Sci , 2012;8(12):483-489]. (ISSN: 1545-1003).
- M.A. ElHakim a, M.D.Abad b, M.M.Abelhameed a, M.A.Shalaby a, S.C.Veldhuis "Wear behavior of some cutting tool materials in hard turning of HSS" Tribology International J., 44, (2011), 1174–1181.
- Abdelhameed, M.A, Darabi, H., "Neural network Based Design of Fault-Tolerant Controllers for Automated Sequential Manufacturing Systems" International Journal of Mechatronics, Vol. 19, pp. 705–714, 2009.
- Ahemd El-Betar, Magdy M. Abdelhameed, Ahmed El-Assal and Roubi Abdelsatar, "Fault Diagnosis of a Hydraulic Power System Using an Artificial Neural Network" JKAU: Eng. Sci., Vol. 17 No. 1, pp: 117 – 137, (2006A.D. /1427 A.H.)
- Abdelhameed, M. M., "Enhancement of Sliding Mode Controller by Fuzzy Logic", Accepted to be published in the International Journal of Mechatronics, 2005.
- Abdelhameed, M. M., Pinsopon, U., Cetinkunt, S., "Adaptive Learning Algorithm For Cerebellar Model Articulation Controller", International Journal of Mechatronics, Vol. 12, pp. 859-873, 2002.
- Abdelhameed, M.M., Tolbah, F. A, "Design and Implementation of a Flexible Manufacturing System Using Neural Network"; Intern. Journal of Flexible Manufacturing Systems, Vol. 14, No. 3, pp. 263-280, July 2002.
- Abdelhameed, M.M., Tolbah, F. A, "A Recurrent Neural Network Based Sequential Controller for Manufacturing Automated Systems", Int. Journal of Mechatronics, Vol. 12, pp. 617-633, 2002.
- Abdelhameed, M.M, "Adaptive Neural network Based Control for Robots" Inter. Jour. of Mechatronics, Vol. 9, No. 2, pp. 147-162, March 1999.

II. Published Local Journal Papers:

- *A.Bayoumi, M.A.Abdelaziz, Magdy M.Abelhameed* " Modeling and Simulation of Hybrid PV/Thermal Solar System", Engineering Research Journal, Helwan University, Vol. 138, pp.M34-M44, June 2013.
- El-Gindy, A.M., Abdelhameed, M.M., Baiomy, M.A., and Mosa, S. A., "Design of mechanical system hooked with threshing machines to convert rice straw into bales to reduce pollution of environment" Journal of Environmental Science, Vol. (14), No. (3), pp.127-137, June 2007.

- Bopearatchy, N., Cetinkunt, S., Abdelhameed, M.M., "Control of a nano-positioning mechanism with application to direct nano-machining of MEMS," Scientific Bulletin, Faculty of Engineering, Ain Shams University, Vol. 40, No. 1, pp. 663-676, March, 2005.
- Abdelhameed, M.M., "Fault-tolerant control based on neural networks for discrete event manufacturing systems," Scientific Bulletin, Faculty of Engineering, Ain Shams University, Vol. 2, No. 40, June, 2005.
- Tolbah, F.A., Abdelhameed, M.M., Awad, M.I., "Analysis and control of a hybrid robot-based machine table," Scientific Bulletin, Faculty of Engineering, Ain Shams University, Vol. 2, No. 40, June, 2005.
- Abdelhameed, M.M., "Intelligent control of a time and event driven discrete manufacturing system," Scientific Bulletin, Faculty of Engineering, Ain Shams University, Vol. 39, No. 2, pp. 713-728, June 2004.
- Atia, M.R., and Abdelhameed, M.M., "Design and implementation of a friction compensator based on Cerebellar model articulation controller neural network," Scientific Bulletin, Faculty of Engineering, Ain Shams University, Vol. 39, No. 3, pp. 853-867, Sept. 2004.
- Abdelhameed, M.M., Tolbah, F.A., "Real time motion planning and control of a nonholonomic system," Scientific Bulletin, Faculty of Engineering, Ain Shams University, Vol. 38, No. 3, pp. 519-534, September 2003.
- Tolbah, F.A., Abdelhameed, M.M., Elbetar, A., Hamdy, H., "Artificial neuro-Petri net and its application to the design of a controller for a discrete event flexible manufacturing system," Scientific Bulletin, Faculty of Engineering, Ain Shams University, Vol. 39, No. 4, Dec. 2004, pp. 577-592.
- Tolbah, F.A., Abdelhameed, M.M., Elbetar, A., Hamdy, H., "Dynamic Petri net based discrete event controller," Scientific Bulletin, Faculty of Engineering, Ain Shams University, Vol. 38, No. 4, pp. 757-775, Dec. 2003.
- Abdelhameed, M.M., Tolbah, F. A., "Recurrent Neural Network Based Sequential Controller for Manufacturing Systems", Sci. Bull. Fac. Eng. Ain Shams Univ. Vol. 34, No. 4, pp. 689-703, Dec. 1999.
- Abdelhameed, M.M., Pinspon, U., Cetinkunt S., "Adaptive Learning Algorithm for Cerebellar Model Articulation Controller Neural Network Based Hybrid-Type Controller (Part I)", Sci. Bull. Fac. Eng. Ain Shams Univ. Vol. 34, No. 4, pp. 659-674, Dec. 1999.
- Abdelhameed, M.M., Pinson, U., Cetinkunt S., "Adaptive Learning Algorithm for Cerebellar Model Articulation Controller Neural Network Based Hybrid-Type Controller (Part II)", Sci. Bull. Fac. Eng. Ain Shams Univ. Vol. 34, No. 4, pp. 675-688, Dec. 1999.
- Abdelhameed, M.M., "A Sigmoid Shape Variation Neural Network Controller for the Tracking of Rigid Manipulators", 5th Inter. Conf. on Prod. Eng. And Design for Dev., Cairo- Egypt, (PEDD 5) Proceedings, pp. 39-51, April 1998.
- Abdelhameed, M.M., Doghiem, H.N., " Robust Adaptive Control for Hydraulic Robots", Sci. Bull. Fac. Eng. Ain Shams Univ. Vol. 30, No. 4, pp. 189-202, Dec. 1995.

- Senbel, H.A., Abdelhameed, M.M. and Ebied, S.J. “Flexible Feed Control System For Producing Predefined Shapes By Electrochemical Machining” Scientific Bulletin, Fac. Eng., Ain Shams University, Vol.30 No. 4, pp235-246, Dec.1995

- **III. Published Conference Papers:**

- Anwar Sahbell*, Naggar Hassan2, Magdy Abdelhameed2 and Abdelhalim Zekry , “Experimental Performance Characterization of Photovoltaic Modules Using DAQ”
 - TerraGreen 13 International Conference 2013 -Advancements in Renewable Energy and Clean Environment.
 - Farid A. Tolbah *,Magdy M. Abdelhameed **,Ahmed Ramadan,“Control of Industrial Servo System in Presence of Motor-Load Inertia Mismatch using μ -synthesis”, Military Technical College, Kobry El-Kobbah, 8th International Conference on Electrical Engineering,ICEENG 2012, Military Technical College,Kobry El-Kobbah Cairo, Egypt
 - S. Elharouny , A. M. Youssef , M. Y. Zakaria , M. M. Abdel-Hameed , “ Procedures for Mathematical Modeling for Small Unmanned Aerial Vehicles” 15th International Conference
 - On Applied Mechanics and Mechanical Engineering, May, 29 - 31, 2012, Military Technical College.Kobry El-Kobbah,,Cairo, Egypt
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- Mostafa Abdelaziz, Magdy M. Abdelhameed, Farid A. Tolbah. “A Hybrid Fuzzy Robust Control for Piezoelectric Actuators.” J Am Sci 2012;8(12):483-489]. (ISSN: 1545-1003).
 - M.M. Abdelhameed1, Mohamed Abdelaziz2 and Shady. A. Maged, “POSITION CONTROL OF HYDRAULIC CYLINDER AT DIFFERENT PATTERNS OF LOAD” AL-AZHAR ENGINEERING TWELFTH INTERNATIONAL CONFERENCE, December 25-27, 2012.
 - Abdelhameed, M.M. , Abbas, H.M. ; Awad, M.A; Sabry, A.M, “ Visual Sensory System for a Movable Platform Pose” Computer Engineering & Systems (ICCES) Seventh International Conference on 27-29 Nov. 2012, 49 – 54.
 - Elkady, M., Elmarakbi, A., Saleh, M., Abdelhameed, M.M., Bawady, A., "Continuous Variable Valve Timing Control System for Model Spark Ignition Engine", 12th EAEC European Automotive Congress, Bratislava, June 29 to July 1, 2009.
 - Tolbah, F. A., Abdelhameed, M. M. and Awad, M., “Mechatronics approach for the design of a parallel robot based machine tool platform” 7th International Conference on Production Engineering and Design for Development, Cairo-Egypt, (PEDD7) Proceedings, pp.53-72, February 7-9, 2006.

- Abdelhameed, M.A, Darabi, H., “Diagnosis and Debugging of Programmable Logic Controller Control Programs by Neural Networks” IEEE Conference on Automation Science and Engineering, August 1 & 2, 2005 Edmonton, Canada.
- Abdelhameed, M.M. “Fuzzy Logic Based-Neural Network Used in Industry- Review Paper”, Higher Education ministry, Promotion Committee for Design and Production, pp. 1-15, May 2000.
- Abdelhameed, M.M., Pinson, U., Cetinkunt S., "Adaptive Learning Algorithm for Cerebellar Model Articulation Controller Neural Network Based Hybrid-Type Controller (Part I)", ASME conf, Dynamics, Acoustics and Simulations DAS 2000, DE-Vol. 108/DSC-Vol. 68, edited by Ray P.S.Han, K.H. Lee and Albert C.J. Luo,
- ISBN 0-7918-1928-0.
- Abdelhameed, M.M., Pinson, U., Cetinkunt S., "Adaptive Learning Algorithm for Cerebellar Model Articulation Controller Neural Network Based Hybrid-Type Controller (Part II)", ASME conf, Dynamics, Acoustics and Simulations DAS 2000, DE-Vol. 108/DSC-Vol. 68, edited by Ray P.S.Han, K.H. Lee and Albert C.J. Luo, ISBN 0-7918-1928-0.
- Abdelhameed, M.M., “A Sigmoid Shape Variation Neural Network Controller for the Tracking of Rigid Manipulators”, 5th Inter. Conf. on Prod. Eng. And Design for Dev., Cairo- Egypt, (PEDD 5) Proceedings, pp. 39-51, April 1998.

TEACHING EXPERIENCE

Mechatronics, Automatic Control, Mechanical Vibration, Vibration Monitoring and Maintenance, Computer Integrated Manufacturing, Modeling and Simulation, Theory of Machine, Mechanics of Machines, Instrumentation and Control. Computer-aided Manufacturing (CAM), Computer-integrated Manufacturing (CIM), Engineering Drawing, Machine Drawing, Electrical Drawing, Hydraulics and Pneumatics, Servo-mechanisms, AutoCAD, Optimal Control.

PRACTICAL EXPERIENCE

- Executive Consultant at Roshdy Metal Industry Corp. (1994 - Present)– Design, Construction and Maintenance of Metal Production Lines
- Consultant at the Egyptian Company for Industry Support (1997-1998) - Design of Industrial Parks.
- Consultant at the Egymatic Design Center (1997-1998) - Design of Irrigation Gates. • Consultant at Egyptalcom (1996) – Commissioning of Aluminum Rolling Line.
- Consultant at Amon crop for contracting (1996) – Programming and operating two fully automated Incinerators in Military Factory 200.
- Consultant at Arab Dar for Consultation in Kuwait (1997-Present)– Training courses for Kuwait Oil Company (KOC) and KPC, Elahmady, Kuwait.

- Technical Consultant to Roads and Transportation Dept. in Kalubia (1997- Now).
- Consultant at Elsalam Canal Project (Maintenance, Mechanical equipments and vibration measuring instrumentation) –First and second stages, Domiat, 1997-2000.
- Consultant at Joint Operations, Saudi Arabian Texaco Inc and Kuwait Oil Co. Corp, Saudi & Kuwait. (1998- Present)
- Consultant at Kuwait Petroleum Corporation / PTC
- Consultant at Semadco, Talkha - Vibration analysis of boilers #1, 2,and 3 (2/2000).
- Consultant at Alkorimat Electrical Power Generation, Elkorimat, Ministry of Electricity, Maintenance and Vibration Assessment of Units #1 and 2 (10/2000).
- Consultant at Egyptian Society of Engineers (Mechanical Vibration branch)(2000- Present)
- Consultant at EuroMaTech- Dubai. UAE (1998-Present)
- Consultant at Egyptian Higher Ministry of Education (Mechatronics, Mechanical Vibration and Control (9/2001- Present)
- Consultant at GTC, Riyadh, Saudi Arabia for some training courses in SCECO (12/2003-Present)
- Consultant at STC (Prof. Galal Elsyad), Jeddah, Saudi Arabia for some training courses in SCECO (08/2004-Present)
- Consultant at STC (Inma Kingdom), Dammam, Saudi Arabia for some training courses in SCECO (10/2006-Present)

TRAINING COURSES

- Pneumatics and Hydraulics,
- Automatic Control,
- Process Control,
- Tuning of Process Controllers,
- Programmable Controller,
- Instrumentation and Data Acquisition System,
- Balancing of Mechanical Components and Equipment,
- Vibration Monitoring,
- Vibration Monitoring and Shaft Alignment,
- Shaft Alignment and Vibration Analysis,
- Fault Diagnosis using Mechanical Vibration,
- Gas Compressor
- Basic AutoCAD,
- Advanced AutoCAD,
- Reading Schematics and Symbols,
- Rotating Equipment,
- Pumping systems Design,
- Machinery Failure Analysis and Prevention,
- Bearing,
- Mechanical Seals,
- Shaft Alignment,
- Alignment and Balancing,
- Fire Fighting,

- Welding Technology,
- Welding Inspection,
- Pipeline Inspection,
- Maintenance,
- Maintenance Planning,
- Mechatronics,
- Valves (Design, Manufacturing, Testing and Maintenance),
- Preventive and Predictive Maintenance,
- Predictive Maintenance,
- Technical Report Writing,
- Safety in Power Plants,
- And Other Training Courses Related to Mechanical and Mechatronic Engineering.

PROFESSIONAL AFFILIATIONS

- Member of Egyptian Engineering Syndicate
- Members of Egyptian Society of Engineers (ESE)
- Fellow of Egyptian Society of Mechanical Engineers (ESME)
- Member of American Society of Mechanical Engineers (ASME)
- Member of American Cultural Center
- Member of International Electro-technical Commission (IEC) # 65: Industrial-process measurement and control
- Member of International Electro-technical Commission (IEC) # 93: Design and automation

SOCIAL ACTIVITIES

- Director of Automatic Control Lab and Mechanical Vibration Lab.
- Team Leader of R&D Center, RMI
- Project Director of many international projects.
- Coordinator of Library Committee, Design and Production Engineering Dept.
- Member of Exams Committee.
- Conference Organizer of PEDD2, PEDD3, PEDD4, PEDD5, PEDD6 and PEDD 7 Conferences.
- Athlete Coordinator of Students Union 1994-1998, FOE, ASU

HOBBIES

- Walking;
- Basketball,

REFERENCES: Upon request