

Stamatios Manesis, Professor

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Curriculum Vitae

Teaching

[Industrial Automation I](#)

[Industrial Automation II](#)

[Industrial Automation Networks](#)

[Systems & Control Laboratory I](#)

Stamatis Manesis received his Ph.D. from University of Patras, School of Engineering, Greece, in 1986. He is Professor of Industrial Automation in the Division of Systems & Control of the Electrical & Computer Engineering Dept. in the same university. In 1998-99 he was with the Industrial Control Centre of the Strathclyde University and in 2008 with the ETH Zurich as academic visitor. He has designed various Industrial Automation Systems for Hellenic industries. He has published over 90 conference and journal papers and has written 5 textbooks. Main research interests: Industrial Control, Industrial Automation, Industrial Networks, Expert-Fuzzy Control Systems-Intelligent Controllers and SCADA Systems. His research has been funded by several national projects (PABE, EPE, Karatheodori Program). He has participated in various EU and National Projects as STRIDE/LIGHT, ESPRIT, EKT, SYNERGASIA'11.

PROFESSIONAL AND LABORATORY EXPERIENCE

- Worked in the following industries:
Wood elaboration industry, SHELMAN Ltd., 1973.
Weaving mill industry, PIRAIKI-PATRAIKI Ltd., 1974.
303 Hellenic Military Factory, 1975-76.
Designed various industrial automation systems for more than twenty Hellenic industries in the area of south and west Hellas.
- Prepared and implemented more than twenty training systems and exercises of the following laboratories:
General Electrotechnique Laboratory
Electrical Measurements Laboratory
Systems and Control Laboratory
- Industrial Control Centre, Strathclyde University, Glasgow England, 1998-1999. Research on the introduction of advanced control techniques in wastewater treatment plants.
- ETH Zurich, Automatic Control Laboratory, Switzerland, 2008, Research on industrial systems modeling

RESEARCH AND DEVELOPMENT PROJECTS – SEMINARS EXPERIENCE

Participated on the following Projects of the European Social Office and the Hellenic General Secretariat for Research and Technology and supported various seminars.

1. Project PABE, for analysis of safety conditions against electrostatic ignition in kerosene tank vehicles, 1989.
2. Project of European Social Office, "New technologies on Industrial Automations", 1990-91.
3. Project SPA, "Improvement of Industrial Productivity using new and advanced Technologies", 1990-92.
4. Project of European Social Office, "Modern Techniques on Industrial Informatics and Production Control for SME", 1992.
5. Project of European Social Office, "New Technologies on Industrial Automations", 1992-93.
6. Project STRIDE/LIGHT, "Pilot Applications of Industrial Automation", 1993-94.
7. Project for the development of research and technology founded by Hellenic GSRD, "Communication of Industrial Controllers", 1994-95.
8. Technical Chamber of Hellas, seminar on "Theory and Applications of Programmable Logic Controllers", Athens Hellas, October 1996.
9. Seminar on professional constitution, "Automation of Industrial Procedures-Modern Technologies", in KEK-TEI Patras, Hellas, 1996.
10. Technical Chamber of Hellas, seminar on "Theory and Applications of Programmable Logic Controllers", Athens Hellas, May 1996.
11. Seminar on Distributed Automation Systems and Networks, Water Treatment Plants Union, Larisa Hellas, 1998.
12. Technical Chamber of Hellas, IEKEM TEE, Seminar on "Tele-control and Tele-operation Systems in Industry", Athens Hellas, Jan-Feb 2000.

13. Technical Chamber of Hellas, IEKEM TEE, Seminar on "New methods on Production and Quality Control CAD/CAM", Athens Hellas, April 2001.
14. Workshop on Industrial Automation and Informatics, IEEE CSS GR, "The training of the Industrial Automation and Informatics in the E&CE Dept. of the University of Patras", November 16 2002, ATEI Chalkis, Greece.
15. Workshop on Training Industrial Automation in Electrical Division of TEE, 4o SEK Athens, March 2004.
16. Workshop on Advanced Applications of Industrial Automation, "Logic Control of Industrial Systems: Opportunities and Requirements", TEI Athens, November 2004.
17. Principal Investigator, Project PABE, General Secretariat for Research and Technology, "Communication of Industrial Controllers", Development of software for communication of incompatible programmable logic controllers, 1994-95.
18. Primary Scientist, EPE Project, General Secretariat for Research and Technology, Subprogram 2, Part 2.3, BIOAGRINO 1, "Thermal Energy Co-Production from Rice Hull Biomass" in AGRINO Thessaloniki, 1998.
19. Primary Scientist, EPE Project, General Secretariat for Research and Technology, Subprogram 2, Part 2.3, BIOAGRINO 2, "Electric Energy Co-Production from Rice Hull Biomass" in AGRINO Thessaloniki, 1998.
20. Principal Investigator, Project PABE, General Secretariat for Research and Technology, "Robot based automation of pending process in switchgear factory BHMEPP Ltd.", 1999.
21. Principal Investigator, UPAT-Basic Research Program "Caratheodory", "Analysis and Advanced Control of Nonholonomic Multi-Articulated Systems", Awarded Amount €18.000, Oct. 1999-01.
22. Principal Investigator, UPAT- Basic Research Program "Caratheodory", "Development of a formal method for modeling and control of discrete event systems and a compiler of finite automata", Awarded Amount €24.000, Oct. 2003-06.
23. Primary Scientist, (UPAT-Team), General Secretariat for Research and Technology, "Development of a prototype real 3-D forming touch table for interactive 3-D Geographical Information System", Awarded Amount €1,098,200, 2013-15.

RECENT PUBLICATIONS

- [1]"Development and control of a hybrid controlled vertical climbing robot based on pneumatic muscle actuators", Andrikopoulos, G., Nikolakopoulos, G. & Manesis, S., Journal of Control Engineering and Technology (JCET). 1, 2, p. 53-58. 6 p., Oct 2011.
- [2]"A Survey on applications of pneumatic artificial muscles", Andrikopoulos, G., Nikolakopoulos, G. & Manesis, S., 19th Mediterranean Conference on Control and Automation, MED 2011, IEEE p. 1439-1446, Corfu, Greece, 2011.
- [3]"Dynamic analysis and cascade movement simulation of a pneumatic muscle actuator", Nikolakopoulos, G., Andrikopoulos, G., Arvanitakis, J. & Manesis, S. Proceedings of the IASTED International Conference on Modelling, Simulation and Identification. ACTA Press p. 407-414, 2011.
- [4]"A survey on pneumatic muscle actuators modeling", Kelasidi, E., Andrikopoulos, G., Nikolakopoulos, G. & Manesis, S., Proceedings of the 2011 IEEE International Symposium on Industrial Electronics, ISIE 2011, 27-30 June 2011, Gdansk, Poland.
- [5]"Dynamic Analysis and Cascade Movement Simulation of a Pneumatic Muscle Actuator", G. Andrikopoulos, I. Arvanitakis, G. Nikolakopoulos and S. Manesis, IASTED International

- Conference on Modelling, Simulation, and Identification (MSI), 7-9 November 2011, Pittsburgh, USA.
- [6] "A survey on pneumatic muscle actuators modeling", Kelasidi, E., Andrikopoulos, G., Nikolakopoulos, G. & Manesis, S., Journal of Energy and Power Engineering, 2012.
 - [7] "A switched system modeling approach for a pneumatic muscle actuator", Andrikopoulos, G., Arvanitakis, J., Nikolakopoulos, G. & Manesis, S., IEEE International Conference on Industrial Technology ICIT'12, 19-21 March, Athens 2012.
 - [8]"Modeling and Control of the Sliding Kingpin Anti-Jackknife Device", N. Koussoulas and S. Manesis, International Journal of Vehicle Systems Modeling and Testing, Vol.7, No.2, 2012.
 - [9] "Skin-muscle deformation modeling under surface force and its application to relax-massage robot action equipped with a constant-pressure mechanism", S. Manesis*, P. Zafirakis, D. Kalamaras, The 14th IASTED International Conference on Control and Applications, CA 2012, Crete, Greece, June 18 - 20, 2012.
 - [10] "A Survey on Underwater Wireless Sensor Networks and Applications", A. Gkikopouli, G. Nikolakopoulos and S. Manesis, 20th Mediterranean Conference on Control and Automation, MED 2012, Barcelona, Spain, July 3-6 2012.
 - [11] "An Experimental Study on Thermodynamic Properties of Pneumatic Artificial", G. Andrikopoulos, G. Nikolakopoulos and S. Manesis, 20th Mediterranean Conference on Control and Automation, MED 2012, Barcelona, Spain, July 3-6 2012.
 - [12]"Multi-Parametric Constrained Optimal Control of a Pneumatic Artificial Muscle", G. Andrikopoulos, G. Nikolakopoulos, I. Arvanitakis and S. Manesis, in 10th Portuguese Conference in Automatic Control (CONTROLO), July 16-18 2012, Madeira Island, Portugal.
 - [13] "An Experimental Study on Thermodynamic Properties of Pneumatic Artificial Muscles", G. Andrikopoulos, G. Nikolakopoulos and S. Manesis, in 20th Mediterranean Conference on Control and Automation (MED), 3-6 July 2012, Barcelona, Spain.
 - [14] "Adaptive Internal Model Control Scheme for a Pneumatic Artificial Muscle", G. Andrikopoulos, G. Nikolakopoulos, and S. Manesis, European Control Conference (ECC), July 17-19 2013, Zurich, Switzerland.
 - [15] "Non-linear Control of Pneumatic Artificial Muscles", G. Andrikopoulos, G. Nikolakopoulos and S. Manesis, accepted for publication in 21st Mediterranean Conference on Control and Automation (MED), 25-28 June 2013, Chania, Greece.
 - [16] "Piecewise Affine Modeling and Constrained Optimal Control for a Pneumatic Artificial Muscle", G. Andrikopoulos, G. Nikolakopoulos, I. Arvanitakis, and S. Manesis, IEEE Transactions on Industrial Electronics, 2013, DOI: 10.1109/TIE.2013.2254094.
 - [17] "3D Simulation analysis of Patras new port operations in SIMIO platform environment", Mandalaki, G. and Manesis, S., 15th International Conference on Modelling and Simulation", April 2013, Cambridge (UK)

PRODUCTS

From the research effort and relative diploma projects the following software and hardware products have been developed:

1. **DECOPAN DESIGN**, a software packet for computer and expert system aided design of Industrial Controlgear Panels.
2. **DIACAD**, a software packet for computer aided design of Industrial Ladder Diagrams.
3. **ROBOMAN**, for the table cartesian micropositioning robotic arm with three degrees of freedom.
4. **CIRCAD**, a software packet for computer aided simulation of industrial ladder circuits.
5. **CAARS**, a software packet for robotic simulation and training of ATLAS robot.

6. **EXFUTE**, an expert-fuzzy controller (software and hardware) for wastewater treatment plant operators' education.
7. **SCADA-LAB**, a set-up for production, measuring and visualized monitoring of typical industrial variables.
8. **CRAN**, a set-up for Position Control Accuracy Evaluation of a Pneumatic Long Cylinder Actuator Based on Simple Software Tools
9. **Lac-Cad 16**, a software packet for Automated Synthesis of Ladder Automation Circuits Based on State-Diagrams
10. **ACS v1.0**, a new software packet for computer aided simulation of industrial ladder circuits to substitute the old CIRCAD
11. **BMS-LonWorks**, a building management system in laboratory scale
12. **CLIMBER**, design and control of a mechanical climber with pneumatic artificial muscles
13. **CART-BALL**, a set-up for balancing a ball on a convex surface
14. **TankMixCol**, a 3 tank system for color liquids mixing control