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**Ministry of Economy and Competitiveness**  
**Secretariat of State for Research and Development and**  
**Innovation**

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# **Currículum**

Name: Pastora Isabel Vega Cruz

## Curriculum Vitae

I, the undersigned, declare that the information contained in this curriculum vitae is true and accurate and, were it not the case, I assume all the responsibilities that may arise from the inaccuracies that may appear in it.

Name: Pastora Isabel Vega Cruz  
Date: Enero 2023

## CURRICULUM VITAE

### PERSONAL INFORMATION

SURNAMES: Vega Cruz  
NAME: Pastora Isabel  
GENDER:  
STATE ID NUMBER:  
OFFICIAL NUMBER:  
DATE OF BIRTH:  
PERSONAL ADDRESS:  
CITY:  
POSTAL CODE:  
PHONE NUMBER:  
SPECIALIZATION UNESCO CODE): 331102, 331005, 120326, 120305

### PROFESSIONAL INFORMATION

ORGANIZATION: University of Salamanca  
CENTER: Faculty of Sciences  
EXPERTISE AREA: Department of Systems Engineering and Automation.  
DEPARTMENT: Computing and Automation  
ADDRESS: Plaza de la Merced, s/n. Salamanca  
PHONE NUMBER: (+34) 923 - 294450  
FAX: (+34) 923 - 29 45 14  
E-MAIL: pvega@usal.es  
OCCUPATIONAL GROUP: Full professor  
DATE OF START: May 1998

### ACADEMIC BACKGROUND

ACADEMIC DEGREES	CENTER/UNIVERSITY	DATE
Degree in Physical Sciences	University of Salamanca	June 1982
Bachelor degree	University of Salamanca	Feb. 1983
PhD. in Physical Sciences	University of Valladolid	May 1987

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## ACTIVITIES OF SCIENTIFIC OR PROFESSIONAL NATURE

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DATES	POSITION	INSTITUTION
1983-87	Assistant Professor	Univ. Valladolid
1987-89	Acting full professor	Univ. Valladolid
1989-95	Permanent Lecturer	Univ. Valladolid
1995-98	Permanent Lecturer	Univ. Salamanca
1998- X	Full Professor	Univ. Salamanca

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## LANGUAGES INTEREST FOR SCIENTIFIC PURPOSES

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LANGUAGE	SPOKEN	READ	WRITTEN
ENGLISH	C	C	C

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## RECOGNISED TEACHING AND RESEARCH PROGRAMMES

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- Research (six-year periods): Four periods
- Teaching assessment (five year periods): Seven periods
- Docentia Teaching Programme: One period
- Innovation and transference assessment (six-year period): One period

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## SCIENTIFIC, TECHNICAL AND ACADEMIC ACTIVITY

- Member of the Committee Euro-Inf (National Agency for Quality Assessment and Accreditation, ANECA) (From 2020)
- Member of the National Research Quality Assessment Committee CENAI (Subfield 6.2) (National Agency for Quality Assessment and Accreditation, ANECA) From (2015-2019)
- Head of Department of Computer Science and Automation of the University of Salamanca (2014-2018)
- Representative of the USAL in the Committees of Governance for the elaboration of the program of thermal renewable energies of Castilla y León (PERTECAL) Junta de Castilla y León  
Within the framework of the European Project "RES H/C SPREAD" (2015-30)
- Member of the Economic Commission of the USAL Senate (since 2015-2019)
- Member of the Quality Commission for the Master in degree Intelligent Systems of the USAL since 2007.
- Member of the Academic Commission for the master's degree in chemical engineering since 2008
- Vice-rector for Innovation and Infrastructures. University of Salamanca (From December 2009 to December 2013)
- Director of the Foundation CEI Studii Salamantini. University of Salamanca. (November 2011-June 2013)
- Managing director (CEO) of the Spanish Language Schools University of Salamanca, S.L (ELE USAL) Years 2013-2014
- Representative for USAL of the OCW consortium from 2009 to 2013
- Member of the Academic Committee of the CSEV Foundation ("Centro Superior de Enseñanza Virtual" (2019-13))
- Member of the Board of Trustees of the USAL Science Park Foundation 2009-2013
- Member of the Executive Committee CADEP-CRUE
- President of the SCOPEO e-learning Observatory of the USAL 2009-2013
- Representative for USAL of the Coimbra Group of Universities e-learning Task Force (2010)
- Member of the General Board of OCU (Office of University Cooperation) from 2009 to 2013
- Member of the Board of Directors of OCU (Office for University Cooperation) (2009-2013)
- Member of the General Board of the SL International Courses (2009-2013)
- Member of the Occupational Health and Risk Prevention Commission of the USAL 2010
- President of the Innovation Commission Delegate of the Governing Council of the USAL. (2009-2013)
- Member of the Innovation Commission Delegate of the Governing Council of the USAL. (2009-2013)
- Universia Coordinator for the USAL. (2009-2013)
- Member of the Regional Council for the Information Society (2009-2013)

- Member of the Electronic Administration Commission of the USAL (2009-2013)
- Member of the Electronic Administration Commission of the Universities of S&L (2009-2013)
- Head of Department of Computer Science and Automation of the University of Salamanca (2008-2010)
- Member of the Research Council of the University of Salamanca, (2007-2010)
- Member of the ETSII Grade Reform Commission, (Department of Computer Science and Automation, USAL), 2008-2009
- Member of the Reform Committee of the Master's Studies in Intelligent Systems (Department of Computer Science and Automation, USAL, 2008)
- Member of the Advisory Board of the Center for Brazilian Studies of the University of Salamanca (from 2008-12)
- Head of the Section for the Faculty of Sciences Department of Systems and Automation Engineering (1993-1995)
- Member of the Board of the Sugar Technology Centre CTA, UVA, Sociedad General Azucarera de España and Ebro Agrícolas. (1993-1996)
- Coordinator of the European Network ENTREE ( European Network for Training and Research in Electrical Engineering). 1993-1995
- Coordinator of the postgraduate course Industrial Computing (University of Valladolid), in the Department of Systems Engineering and Automation. Year 1994-95
- Member of the Expert Commission of the National Industrial Design and Production Programme of the Ministry of Science and Technology May 2004-05,
- Member of the Expert Commission of the National Industrial Design and Production Programme of the Ministry of Science and Technology, 2007
- Member of the Monitoring Committee (Conference on Project Monitoring of the National Plan for the National Industrial Design and Production Programme of the Ministry of Science and Technology). Madrid, June 2007
- Member of the Scientific Committee of EnRED journal (University of Salamanca), 2007-10
- Evaluator of European Research Projects (LTR Programme), 1995, 1996
- Evaluator of Research Projects of the National Program of the CICYT since 1991
- CYTED Research Projects Evaluator year 2006-07
- Reviewer of articles in prestigious journals since 1991:

Control Theory and Applications of IEE, Journal of Process Control, Automatica, Control Engineering Practice Engineering Application of Artificial Intelligence, Computers and Chemical Engineering, Applied Sciences, Processes, Revista Iberoamericana de Automática Industrial etc.

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- Guest Editor of the Special Issue Optimization and Control of Integrated Water Systems Processes, (2020)
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- Academic Editor of the Journal Processes (MDPI) (from 2020)
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- Member of the Academic Board Editors of the Journal Processes (MDPI) (from 2021)

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## PARTICIPATION IN RESEARCH PROJECTS, THEMATIC NETWORKS AND SPECIAL ACTIONS FUNDED

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1989-90	<b>Coordinated research project</b> An intelligent, computer-aided package of biotechnological process control systems Universities: Valladolid, Autónoma Barcelona, País Vasco CICYT, Key: ROB-479/89 Head researcher
1991	<b>Concerted Research Action</b> Development of an advanced control system for laboratory processes DGICYT, AC-514A640 Head researcher
1989-91	<b>Research project</b> IA Techniques in Industrial Control Centres in Argentina, Chile, Venezuela, Brazil and Spain CYTED-D, VII.3 Researcher
1991-93	<b>Research project</b> Development and implementation of an integrated process control system Universities: Valladolid, Autónoma Barcelona CICYT, ROB 91 Head researcher
1991-93	<b>Coordinated research project</b> Development of robust controllers in the process industry Univ. of Valladolid and Pontificia Católica de Chile, CEDAI (Cuba) Scientific Cooperation Program with Latin America. MEC/MAE Researcher
1992-04	<b>Thematic network</b> Industrial Computing Systems CYTED-D 1992-95 Centres in Argentina, Brazil, Cuba, Chile, Mexico, Portugal, Spain, Venezuela and Mexico Researcher
1994-97	<b>Research project</b> Dynamic production planning and control in the process industry Dpt. Of SEA (UVA), Dpts of Computing (UVA and UAB) CICYT, TAP387/94 C01 Researcher
1994-97	<b>Research project</b> Development of a knowledge-based system for the monitoring and (re)design of biotechnological processes: application to biological purification processes Dpts. Chemical Engineering (UAB), Chemical Engineering (UPV) Department of Systems Engineering and Automation (UVA) CICYT, BIO94-0679-C02-02 Researcher in charge (UVA)



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**Integrated action**  
1996-97 Developments of Predictive Control Algorithms and study of their properties  
Dpt. Systems Engineering and Automation UVA Oxford University. MEC / British Council  
Researcher

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**Action ESPRIT-PACE**  
1995-6 Total Integrated Optimization Tool (HITO)  
PACE project  
INITEC, Azucarera Española (sgae) UNED, UVA, IGC, CPI  
Researcher

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**Research project**  
1994-97 Artificial Intelligence techniques for supervision, diagnosis and process control  
Univ. Simón Bolívar (Venezuela), Univ. Nacional de San Juan (Argentina), Univ. of Oporto (Portugal), UVA  
and USAL (Spain)  
Electronic and Applied Computing Subprogram. CYTED  
Head researcher (USAL group)

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**Special action**  
1996-97 Planning and dynamic control of robotic manipulators  
Department of Computing and Automation (USAL)  
TAP programme from CICYT  
Head researcher

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**Coordinated project**  
1996-98 Experimental integration of planning and control techniques of a distributed robotic system  
Department of Computing and Automation (USAL),  
Department of SEA (UVA) and Dpt. Of Computing (UVA)  
Support Program for Research Projects  
Junta de Castilla y León  
Head researcher

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**Research project**  
1996-98 Automation and optimisation of dryer and cold rooms  
For the Castilian-Leonese Industry  
Support Program for Research Projects  
Junta de Castilla y León  
Researcher

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**Development project**  
1998-99 Development of a computer-assisted Automatic Control program  
Assistance for the development of resources to support university education. Junta de Castilla y León.  
Participant

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**Development project**  
1999-00 Development of a LIMS system for the management of laboratory samples of water  
Dept. of Computing and Automation, ETSII (USAL), Centre for Research and Technological Development of  
Water (CIDTA) and IBERDROLA  
Researcher

2000-01	<b>Development project</b> Integration of the computer in an Engineering Laboratory Department of Electronic Engineering, Department of Computing and Automation and Department of Mechanics, ETSII (USAL) Researcher
2001 -02	<b>Coordinated research project</b> Development of an intelligent control system for monitoring, Diagnosis and fault-tolerant control for purification-related biotechnological processes Research support programme of the Regional Government of Castilla y León Department of Computing and Automation ETSII (USAL) and department of Systems Engineering and Automation (UVA) Head researcher
2000-01.1	<b>Research project</b> Planning and dynamic control of manipulators Program of the Samuel Solórzano Foundation Dpt of Mechanical Eng., dept. of Computing and Automation, Dept. of Electronics, (USAL) Researcher
2001-03	<b>Coordinated research project</b> Optimal Synthesis Techniques and Integrated Process Design: Application to water purification plants. DPI programme. Department of Computing and Automation (USAL) Department of Systems Engineering and Automation (UVA) and Department of Chemical Engineering Head researcher
2001 -03	<b>Research project</b> Global operating strategies for hybrid systems in the process industry Program of Industrial Design and Production MCYT Dpt. of Computing and Automation (ETSII,USAL) , Dpt. Systems Engineering and Automation (UVA), Dpt Systems Engineering and Automation (UAB) Researcher
2003-04	<b>Research project</b> Design and implementation of a system to control an ACMA X58 robot Program of the Samuel Solórzano Foundation Department of Electronic Mechanics, Department of Computing and Automation and Department of Electronics, ETSII (USAL) Researcher
2003	<b>Special action</b> Thematic network in Control Engineering Reference: DPI2002-10940-E Ministry of Science and Technology Researcher
2003-04	<b>Coordinated research project</b> Development of a decision support system for the integrated design of WWTP DPI2003-09392-C02-02 Department of Computing and Automation (USAL, UdG), Head researcher

2004 -06	<b>Coordinated research project</b> Advanced control strategies and intelligent monitoring for the process industry Program of Industrial Design and Production MCYT Department of Computing and Automation (ETSII, USAL) , department of Systems Engineering and Automation (UVA) Head Researcher
2005-06	<b>Complimentary actions</b> Complex Systems Fault Detection and Diagnostic Network Reference: DPI2005-23815 Ministry of Science and Technology Researcher
2006 -09	<b>Thematic network</b> Automation and control network for the sugar cane processing industry. CYTED Thematic network. (506RT0303). Thematic Area of Information and Communication Technologies. Coordinator of USAL Group
2006 -09	<b>Coordinated research project</b> Advanced Supervision and Control Technologies for the optimal operation of WWTP Project for the National Plan DPI. Ref. DPI2006-15716-C02-01 USAL, UVA Coordinator and head researcher
2007-08	<b>Complimentary actions</b> Complex Systems Fault Monitoring and Diagnostic Network Reference: DPI206-28369-E Ministry of Science and Technology Researcher
2007 -09	<b>Coordinated research project</b> Advanced Thermal Control Techniques for Buildings: Energy Saving and Comfort (SA 108A07) Research support program of the Regional Government of Castilla y León Head researcher
2008-09	<b>Research project</b> Optimization and control of wastewater treatment plants: a real case study Program of the Samuel Solórzano Foundation YACU Head researcher
2008 -09	<b>Complimentary actions</b> Thematic network in Control Engineering Reference: DPI2007-30811-E Ministry of Science and Technology From 1 May 2008-30 April 2009 (€ 18,000) Researcher
2009-11	<b>Complimentary actions</b> Complex Systems Fault Monitoring and Diagnostic Network Reference: DPI2009-06124-E Ministry of Science and Technology Execution period: from 10/01/2009 to 12/31/2011 Economic dossier: PIA42009-1 Total granted: € 24,000.00 Researcher

2010 -12	<p>Coordinated research project</p> <p>Optimal operation of Wastewater Treatment Plants (WWTPs).</p> <p>Project for the National Plan DPI of the MICINN.</p> <p>Reference DPI2009-14410-C02-01</p> <p>USAL, UVA</p> <p>Coordinator and head researcher</p>
2010 -12	<p><b>Research project</b></p> <p>Non-linear estimation and control of wastewater treatment processes.</p> <p>Spanish-Moroccan AECID Project, within the framework of the Inter-University Cooperation and Scientific Research Program (PCI-Mediterranean)</p> <p>Reference A/024016/09</p> <p>USAL, University of Cadi Ayyad (Marrakech)</p> <p>Coordinator and head researcher</p>
2012 – 2015	<p><b>Inter-University Cooperation Project</b></p> <p>IDELE: Innovation and Development in Spanish as a Second Language</p> <p>TEMPUS Inter-University Cooperation Program</p> <p>European Commission EACEA - Education, Audiovisual and Culture Executive Agency.</p> <p>USAL, University of Bologna, Association of Hispanists of Egypt, Institute of Islamic Studies of the Egyptian Embassy in Spain, Ain-Shams University, Cairo University, Alexandria University, Helwan University, Al-Azhar University, Minia University.</p> <p>Aid granted: €893,000</p> <p>Researcher</p>
2010 – 2013	<p><b>R+D+i Project</b></p> <p>DEPOLIGEN. Energy efficiency in "zero-emission" buildings through improved energy demand, poly-generation and comprehensive energy management.</p> <p>INNPACTO Plan – call 2010 (June 2010)</p> <p>Ministry of Economy and Competitiveness</p> <p>Collaborating organizations: University of Salamanca, CIEMAT Scientific and technical coordination), University of Salamanca, INZAMAT University of Valladolid, IBERDROLA Ingeniería y Construcción S.A. (Project coordination), IBERDROLA Generación, S.A., IDEAS TX Ingeniería, S.L., TECOPY, S.A., INZAMAC Asistencias Técnicas, S.A. and undación CARTIF.</p> <p>Total funding granted: € 5,900,141.22 USAL Funding: €484,450</p> <p>Head researcher USAL</p>
2012 – 2015	<p><b>R+D+i Project</b></p> <p>SMARTZA. Develop technologies to enable progress in the application of the 'smart' concept in cities</p> <p>INNPACTO Plan</p> <p>Ministry of Economy and Competitiveness</p> <p>Collaborating organizations: COFELY-GDFSUEZ (Coordination), UiE3 - CIEMAT (Scientific/technical coordination), INZAMAC, IDEAS TX, ICCA, CARTIF, University of Salamanca</p> <p>Total funding granted: <b>€ 4,160,359.20</b> USAL funding: € 338,289</p> <p>Ministry of Economy and Competitiveness</p> <p>Head researcher</p>
2013 -16	<p><b>Coordinated research project</b></p> <p>Methodology for the design of hierarchical and distributed control systems based on MPC for integrated systems and distribution networks</p> <p>Collaborating organizations: MINECO, University of Salamanca. University of Valladolid UNAM of Colombia and University Simón Bolívar (Venezuela) Coordinator and Main Researcher</p>

2015-16	<b>Excellence networks</b> Thematic on Control Engineering. State Programme for the Promotion of Scientific and Technical Research of Excellence, State Subprogramme for the Generation of Knowledge, (State Plan for Scientific and Technical Research and Innovation). Ministry of Economy and Competitiveness, in this General Subdirection for Research Projects DPI2014-51731-REDT. Researcher
2016-17	<b>Transfer project</b> Validation and implementation of economic control techniques based on predictive controllers in a real WWTP (WWTP in Salamanca). General Foundation of the University of Salamanca Call for proof of concept and protection of USAL research results Head researcher € 9000
2016 -19	<b>Coordinated research project</b> Design methodology of hierarchical and distributed control strategy systems based on multi-agent systems for large-scale systems. ( DPI2015-67341-C2-1-R) Collaborating organizations: MINECO, University of Salamanca. University of Valladolid UNAM of Colombia and University Simón Bolívar (Venezuela) Coordinator and Main Researcher. €130,000
2015 -19	<b>Transfer project</b> Emprendimiento inclusivo: Oportunidad y negocio en el ámbito transfronterizo POCTEP_ON_INCLUSIVENTREPRENEUR E2 EUROPEAN UNION Researcher
2016 -19	<b>Research project</b> ECOCASA (OTRI-BEA) N1. RTC-2016-5250-6 MINISTERIO DE ECONOMÍA Y COMPETITIVIDAD Researcher
2015-20	<b>Research project</b> Desarrollo de Capacidades Tecnológicas en torno a la aplicación Industrial de Internet de las Cosas (IoT) POCTEP_IOTEC. E2 EUROPEAN UNION Researcher
2017-21	<b>Research project</b> DIGITEC: Crecimiento inteligente a través de la especialización del tejido empresarial transfronterizo en tecnologías digitales avanzadas y blockchain. POCTEP_2 CONVOCATORIA EUROPEAN UNION Researcher
2017-21	<b>Research project</b> DISRUPTIVE: Dinamización de los Digital Innovation Hubs dentro de la región Poc Tep para el impulso de las TIC disruptivas y de última generación a través de la cooperación transfronteriza. POCTEP_2 CONVOCATORIA. EUROPEAN UNION Researcher

2019-22	<b>Research project</b> Realidad Virtual, Reinforcement Learning y Registro Distribuido para la formación en Sistemas de Aeronaves Pilotadas por Control Remoto (RPAS). OTRI (BEA) RTC2019-007318-8. MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES Researcher
2019-22	<b>Research project</b> Tecnologías de Registro Distribuido y Deep Neuroevolution Learning para el establecimiento de un nuevo billete único digital intermodal de transporte a nivel europeo (EUPass). OTRI (BEA) RTC2019-007401-4. MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES Researcher
2018-23	<b>Research project</b> Hybrid Enhanced Regenerative Medicine Systems (HERMES) H2020-FETPROACT-01-2018-2020 EUROPEAN UNION. Horizon 2020 program. Researcher
2020-24	<b>Coordinated research project</b> Sustainable operation of integrated water systems through intelligent and distributed supervision and control methodologies (DPI 7939105434-105434-4-19) Collaborating organizations: MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES University of Salamanca, University of Valladolid UNAM of Colombia and University Simón Bolívar (Venezuela), Autonomous University of Barcelona. Coordinator.  <b>Research Project (USAL)</b> Development of intelligent distributed control techniques based on Game Theory USAL Project. Main Researcher I.
2022-23	<b>Research project</b> Operación óptima y control de plantas depuradoras de aguas residuales mediante técnicas de aprendizaje automático. Referencia TED2021-129201B-I00. Proyectos estratégicos de transición ecológica y digital, 2021. MINECO. Researcher

## INSTITUTIONAL USAL PROJECTS

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- R+D+i Project**  
2008 – 2012 VITOR project: El sueño de Nebrija  
Avanza Plan – Subprograma Avanza Contenidos – call 2008 (March 2008)  
Ministry of Industry, Tourism and Trade  
Aid granted: € 4,518,474  
Researcher in charge from 2009 to 2012
- 
- R+D+i Project**  
2008 – 2010 Creation of the Digital and Audiovisual Production Centre of the University of Salamanca  
Programme “Promotion of the Digital Content Industry from Universities” - call 2009 (October 2008) Red.es  
Aid granted: €126,000 (plus €54,000 co-funded by the USAL)  
Researcher in charge 2009 -2012
- 
- R+D+i Project**  
2009-11 Project Ecosistema Media for Spanish  
Campus Programme for international excellence. - Subprogramme R+ D + i and Transfer - call 2009 (July 2009)  
Ministry of Science and Innovation  
Aid granted: €1,000,000  
Researcher in charge 2009 -2012
- 
- R+D+i Project**  
2010 – 2011 Los Ecos de una Lámpara Maravillosa  
Aid for audiovisual works with the use of new technologies - call 2010 (March 2010)  
Institute of Cinematography and Audiovisual Arts. Ministry of Culture.  
Aid granted: €29,700  
Head researcher
- 
- Preparatory action**  
2011 – 2012 “Innovación and Development in Spanish as a Second Language” (IDELE)  
Programa de Cooperación Interuniversitaria e Investigación Científica – 2011 call (April 2011)  
Agencia Española de Cooperación Internacional para el Desarrollo  
Aid granted: 18,556.64  
Head researcher
- 
- Campus project for international excellence**  
2010 – 2012 Campus Studii Salamantini. 800 Years of Innovation  
Campus Programme for international excellence. Subprogramme for consolidation 2010  
Call Ministry of Education  
Aid granted: €555,000  
Researcher in charge
- 
- Campus project for international excellence**  
2010 – 2013 Campus Studii Salamantini. 800 Years of Innovation  
Campus Programme for international excellence. Subprogramme for excellence 2010  
Call Ministry of Education  
Aid granted: €3,000,000

Researcher in charge

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2011 – 2013      **Campus project for international excellence**  
Campus Studii Salamantini. 800 Years of Innovation  
Campus Programme for international excellence. Subprogramme for consolidation 2011 Call  
Ministry of Education  
Aid granted: €800,000  
Researcher in charge

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## RESEARCH CONTRACTS

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**TITLE OF THE CONTRACT:** Desarrollo de técnicas avanzadas para control Industrial. (Art., 11- LRU)  
**COMPANIES AND BODIES:** Cooperativa Azucarera Onésimo Redondo (ACOR)/CAICYT  
**UNIVERSITIES:** UVA  
**RESEARCHER IN CHARGE:** César de Prada **DURATION:** 2 years (1986-88)

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**TITLE OF THE CONTRACT:** Técnicas avanzadas de control y supervisión de procesos mediante un sistema experto  
**COMPANY:** Sociedad General Azucarera (SGAE)  
**UNIVERSITIES:** UVA, UNED  
**RESEARCHER IN CHARGE:** César de Prada **DURATION:** 3 years (1993-96)

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**TITLE OF THE CONTRACT:** Desarrollo de un sistema de análisis de operación de Centrales en situación de avería  
**COMPANIES:** Consejo de Seguridad Nuclear, USAL  
**TECHNICAL DIRECTION:** Pastora Vega Cruz **DURATION:** 2 years (1998-99)

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**TITLE OF THE CONTRACT:** Desarrollo de una aplicación informática para la gestión de laboratorios (BDGL)  
**BODIES AND COMPANIES:** ETSII (USAL) and Centro de Investigación y Desarrollo Tecnológico del Agua (CIDTA) Iberdrola  
**DURATION:** 2 years (1998-2000)  
**RESEARCHER IN CHARGE:** Eladio Sanz García  
**FUNDING:** Convenio Iberdrola CIDTA **REF:** I+DT 99-00

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**TITLE OF THE CONTRACT:** Ampliación de la aplicación BDGL para la gestión de laboratorios  
**BODIES:** ETSII (USAL), CIDTA and Iberdrola  
**DURATION:** 3 years (2000-03)  
**RESEARCHER IN CHARGE:** Pastora Vega Cruz  
**FUNDING:** Convenio Iberdrola CIDTA **REF:** I+DT 00-03

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**TITLE OF THE CONTRACT:** Desarrollo de una herramientas multimedia para la Síntesis, Diseño Integrado y Gestión de plantas de depuración de aguas  
**BODIES AND COMPANIES:** USAL, CIDTA and IBERDROLA  
**RESEARCHER IN CHARGE:** Pastora Vega Cruz  
**FUNDING:** Convenio Iberdrola CIDTA **REF:** I+DT 02-03  
**DURATION:** 1 year (2002-03)

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**TITLE OF THE CONTRACT:** Integración de técnicas para la optimización, control avanzado y diseño de procesos. Aplicación a plantas de depuración de aguas residuales (EDAR)  
**BODIES AND COMPANIES:** USAL, Diskette Informática (Javier Rodríguez Ramos)  
**DURATION:** 1 year (from 09/01/2004 to 08/31/2005)  
**RESEARCHER IN CHARGE:** Pastora Vega Cruz

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**TITLE OF THE CONTRACT:** Diseño y desarrollo de un sistema de simulación del comportamiento de líneas subterráneas

**BODIES AND COMPANIES:** Iberdrola Distribución Eléctrica

**DURATION:** 18 months (1st June 2008 - November 2010)

**RESEARCHER IN CHARGE:** Francisco Martín Labajos

**AMOUNT:** €148,000

**ID KEY:** LCRY

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**TITLE OF THE CONTRACT:** Realización de un informe sobre la incidencia del e-learning en el ámbito universitario

**BODIES AND COMPANIES:** Centro Internacional de Tecnologías Avanzadas (Germán Sánchez Ruipérez Foundation)

**RESEARCHER IN CHARGE:** Pastora Vega Cruz

**AMOUNT:** €7080.00

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**TITLE OF THE CONTRACT:** Servicio de Inteligencia Competitiva Tecnológica

**BODIES AND COMPANIES:** Iberdrola

**DURATION:** 18 months (June 2011 - September 2011)

**RESEARCHER IN CHARGE:** Pastora Vega Cruz

**AMOUNT:** €27,224.96

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**TITLE OF THE CONTRACT:** Elaboración de Mapas Tecnológicos para el afianzamiento de un observatorio estable del Sector Eléctrico.

**BODIES AND COMPANIES:** Iberdrola

**DURATION:** 18 months (January 2012 - September 2012)

**RESEARCHER IN CHARGE:** Pastora Vega Cruz

**AMOUNT:** €34,059.08

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**TITLE OF THE CONTRACT:** Instalación fotovoltaica de demostración de la tecnología UMG y la monitorización del rendimiento de la instalación.

**RESEARCHER IN CHARGE:** Sánchez, E.

**BODIES AND COMPANIES:** FERROATLANTICA S.A..

**DURATION:** Start year: 2013, End year: 2016

**RESEARCHER IN CHARGE:** Esteban Sánchez

**PARTICIPANTS:** Gómez, P. A.; Sánchez, E.; Torreblanca, J.; Vega, P.

## **PATENT Intellectual property**

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### **INVENTORS (by order of contribution):**

Prada Moraga, C. Alvarez Alvarez, M.T., Zamarreño Cosme, J. M., Jesús Alvarez Pérez, T. Mañoso Hierro, m.A., Dormido Bencomo, S., Pérez de Madrid Pablo, A., Vega Cruz, P., Valentín Zaera, A., Sanzo Gómez, M., Ontanilla Sandoval, J.C., Cristea, S.

**TITLE:** HITO/HIDEN Herramienta Integrada para Total Optimización. Sistema de control predictivo multivariable con restricciones. Toolbox gráfica de identificación de Sistemas

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**PRIORITY COUNTRY:** Spain

**PRIORITY DATE:**

**OWNING BODY:** 30Th June 1998

**COUNTRIES REACHED:** Spain

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TITLE: A comparative study of GPC and DMC controllers  
AUTHORS: C. Prada, J. Serrano, P. Vega, M. A. Piera  
BOOK: Advances in Model Based Predictive Control, pp 38-52, ISBN 0 19 856292 6, 1  
PUBLISHER: Oxford University Press. Editor D. W. Clarke  
ID KEY: CL

---

TITLE: Robust Control of a milk of lime blending for tank  
AUTHORS: F. Tadeo, P. Vega, R. G. Cameron  
BOOK: Applications of Multivariable System Techniques  
pp 110-117, ISBN 0 85298 828 1, 1994  
PUBLISHER: Pergamon Press (Elsevier Science) R. Whalley Ed  
ID KEY: CL

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TITLE: Modelling and Control of an industrial process using Neural Networks  
AUTHORS: S. D'Amico, P. Vega, L. Alonso, J. M. Zamarreño  
BOOK: Intelligence Engineering Systems through Artificial Neural Networks Vol. 4, pp 029-1034, ISBN 0 85298 828, 1994  
PUBLISHER: ASME Press  
ID KEY: CL

---

TITLE: Use of Neural Nets for Dynamic Modelling and Predictive Control in an Evaporation Station.  
AUTHORS: L.F Acebes, P. Vega  
BOOK: Simulation of Continuous Systems Proceed.  
pp 774-778. ISBN 1-56555-028-51994  
ID KEY: CL

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TITLE: A comparison of Identification Algorithms for rapidly time varying parameters on a real process  
AUTHORS: M. J. Fuente, P. Vega  
BOOK: Adaptive Systems in Control and Signal Processing. IFAC Proc., pp 141-146. ISBN 963 331 344 X, 1995  
PUBLISHER: AKAPRINT. Editor Cs Bányász  
ID KEY: CL

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TITLE: A neural network based approach for Fault Detection and diagnosis: Application to a real process  
AUTHORS: M. J. Fuente, P. Vega  
BOOK: IEEE Conference on Control Applications, Proceed.  
pp 188-193. ISBN 0-7803-2550-81995  
ID KEY: CL

---

**TITLE:** Robust Control of a pH control plant  
**AUTHORS:** O. Pérez, F. Tadeo, P. Vega  
**BOOK:** IEEE Conference on Control Applications , Proceed.  
pp 854-855. ISBN 0-7803-2550-81995  
**ID KEY:** CL

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**TITLE:** Techniques for classifying sugar crystallisation images, based on spectral analysis and the use of neural networks  
**AUTHORS:** E. S. González, P. Vega  
**BOOK:** Advances in Computational Intelligence. IEEE Proceedings pp 641-645, ISBN 0-444-82587-8, 1996  
**PUBLISHER:** Pergamon Press (Elsevier Science)  
**ID KEY:** CL

---

**TITLE:** Application of neural nets to dynamical modelling and path planning of robotics arms  
**AUTHORS:** P. Vega, A. Restrepo, B. Curto, V. Moreno  
**JOURNAL/BOOK:** Conference publication (Proceedings of Engineering benefits from neural networks ISBN 951-97868-0-5, 1998  
**ID KEY:** CL

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**AUTHORS:** P. Vega, L.D. García  
**TITLE:** Fault tolerant modelling and prediction of a real waste water plant using recurrent neural networks  
**JOURNAL/BOOK:** Conference publication (Proceedings of Engineering benefits from neural networks) ISBN 951-97868-0-5, 1998  
**ID KEY:** CL

---

**TITLE:** Aplicación de las redes neuronales a la detección y diagnóstico de fallos  
**AUTHORS:** M. J. Fuente, P. Vega  
**BOOK:** Aplicaciones de las Redes Neuronales en Control y Supervisión, 1999  
**PUBLISHER:** University Simón Bolívar  
**ID KEY:** CL

---

**TITLE:** Modelado del proceso de difusión en la industria azucarera: Aplicación de redes neuronales recurrentes  
**AUTHORS:** J. M. Zamarreño, P. Vega  
**BOOK:** Aplicaciones de las Redes Neuronales en Control y Supervisión, 1999  
**PUBLISHER:** University Simón Bolívar  
**ID KEY:** CL

---

**TITLE:** Control Predictivo Neuronal de una unidad de refundición de azúcar  
**AUTHORS:** J. M. Zamarreño, P. Vega  
**BOOK:** Aplicaciones de las Redes Neuronales en Control y Supervisión, 1999  
**PUBLISHER:** University Simón Bolívar  
**ID KEY:** CL

---

**TITLE:** Integrated design of a pH processes  
**AUTHORS:** A. Gil , P. Vega, M. Francisco  
**BOOK:** Modelling, Identification, and Control Conference Proceedings  
Vol 1 pp. 226-229 February 2001  
ISBN: 0-88986-316-4, ISSN:1025-8973  
**PUBLISHER:** Acta Press  
**ID KEY:** CL

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TITLE: Fermenter Modelling using local linear models  
AUTHORS: M. Francisco, P. Vega, A. Gil  
BOOK: Modelling, Identification, and Control Conference Proceedings  
Vol. 1 pp. 308-313. Year 2001  
ISBN: 0-88986-316-4 ISSN:1025-8973  
PUBLISHER: Acta Press  
ID KEY: CL

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TITLE: Algorithmic Synthesis And Integrated Design of Chemical Reactor Systems Using Genetic Algorithms  
AUTHORS: S. Revollar, R. Lamanna and P. Vega  
BOOK: WAC Book series, Volume 17, pp: 453- 458  
ISBN : 1-889335 ( IEEE Catalog No: 04EX832C)  
PUBLISHER: TSI-Press, **2004**  
ID KEY: CL

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TITLE: Integrated System Design with Standard Industrial Controllers via LMIS  
AUTHORS: O. Pérez, W. Colmenares, E. Granado, P. Vega and M. Francisco  
BOOK: WAC book series, Volume 16 pp 403-406  
ISBN : 1-889335. ( IEEE Catalog No: 04EX832C)  
PUBLISHER: TSI-Press, **2004**  
ID KEY: CL  
AUTHORS: A. Gajate, R. Haber, P. Vega

---

TITLE: A Transductive Neuro-Fuzzy Force Control. An Ethernet-based Application to a Drilling Process  
BOOK/JOURNAL: Neural Information Processing. Lecturer Notes in Computing Sciences  
Volume 5864/2009, 573-582 (**2009**)  
DOI: 10.1007/978-3-642-10684-2\_64  
EDITOR: Springer- Verlag  
ID KEY: CL

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AUTHORS: Agustín Gajate, Rodolfo E. Haber, José R. Alique and Pastora I. Vega  
TITLE: Transductive-Weighted Neuro-Fuzzy Inference System for Tool Wear Prediction in a Turning Process  
BOOK/JOURNAL: Lecturer Notes in Computing Sciences. Hybrid Artificial Intelligence Systems. Volume 5572/2009, 113-120, DOI: 10.1007/978-3-642-02319-4\_14 (**2009**)  
EDITOR: Springer- Verlag  
ID KEY: CL

---

AUTHORS: S. Revollar, M. Francisco, P. Vega, R. Lamanna.  
TITLE: Genetic Algorithms for the Synthesis and Integrated Design of Processes Using Advanced Control Strategies  
BOOK/JOURNAL: Lecturer Notes in Computing Sciences. Advances in Soft Computing. International Symposium on Distributed Computing and Artificial Intelligence. 50/2009, 205-214. 2009.  
EDITOR: Springer- Verlag  
ID KEY: CL

---

AUTHORS: H. Álvarez, R. Lamanna, P. Vega, S. Revollar  
TITLE: Libro blanco del control automático en la industria de la caña de azúcar  
CHAPTER: Purificación y clarificación del jugo de caña de azúcar  
ISBN: 978-84-614-8008-1, Legal deposit: VA-385-2011  
EDITOR: CYTED. Printing press: Diazzo Plotter Suministros. Year: **2011**  
ID KEY: CL



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AUTHORS: E. Hicham, P. Vega, O. Bakka  
TITLE: Investigation of Different Control Strategies for the Waste Water Treatment Plant  
BOOK: Remote Sensing of Biomass: Principles and Applications  
EDITOR: Ed. S. Shahid Shaukart. INTECH pp: 179-194 Book 3", ISBN 978-953-307-491-7. pp: Año: **2011**  
Indexed in Thomson Reuters' ISI Web of Science Book Citation Index (BKCI).  
ID KEY: CL

---

AUTHORS: Alejandro Goldar, Silvana R. Revollar, Rosalba Lamanna, Pastora Vega  
TITLE: Neural Network Identification of N-Removal Process in Waste Water Treatment Plants From Proceeding (809) Modelling, Identification and Control - 201403/**2014**;  
DOI: 10.2316/P.2014.809-051  
ID KEY: CL

---

AUTHORS: R. Casado-Vara, F. de la Prieta, S. Rodríguez, J. L. Calvo, S. Marquez Venayagamoorthy, P. Vega, J. Prieto  
TITLE: Adaptive fault-tolerant tracking control algorithm for IoT systems: smart building case study  
BOOK: Advances in Intelligent Systems and Computing book series, Volume 950/951. ISBN 978-3-030-20054-1 ISBN 978-3-030-20055-8 (eBook) Springer.  
<https://doi.org/10.1007/978-3-030-20055-8>.  
ISSN 2194-5357 ISSN 2194-5365 (electronic). May **2019**  
ID KEY: CL

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AUTHORS: Angélica González Arrieta, Guillermo Hernández González, Juan Manuel Corchado Rodríguez, María Belén Pérez Lancho, José Rafael García-Bermejo Giner, Iván Álvarez Navia, Juan Andrés Hernández Simón, Ángel Luis Sánchez Lázaro, Pastora Isabel Vega Cruz  
TITLE: Competences of University Teaching Staff to Use New Learning and Evaluation Resources  
BOOK: International conference on technological ecosystems for enhancing multiculturality. pp:779-887. **2022/10/19**  
EDITOR: Springer Nature Singapore

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## RESEARCH STAYS IN CENTRES ABROAD

READING KEYS: (D) PhD, (P) Postdoc, (I) Invited, (C) Hired, (O) Others (specify)

---

CENTER: University of Bradford. School of Control Engineering

CITY: Bradford, United Kingdom

DURATION: 5 months

TOPIC: Robust control and multi-variable control

POSITION: RESEARCHER KEY: I

YEAR: 1986

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CENTER: UMIST. Control Systems Centre

CITY: Manchester, United Kingdom

DURATION: 2 months

TOPIC: Autotuning/Adaptive Control

POSITION: Researcher, KEY: P

YEAR: 1988

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CENTER: UMIST. Control Systems Centre

CITY: Manchester, United Kingdom

DURATION: 6 months

TOPIC: Fault detection and diagnosis

POSITION: Researcher, KEY: P

YEAR: 1990-91

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CENTER: UMIST. Control Systems Centre

CITY: Manchester, United Kingdom

DURATION: 4 months

TOPIC: Fault detection and diagnosis

POSITION: RESEARCHER KEY: I

YEAR: 1992

---

CENTER: University of Newcastle upon Tyne,  
Dpt Chemical Engineering and Process Control

CITY: Newcastle upon Tyne, United Kingdom

DURATION: 2 months

TOPIC: Neuronal network-based fault detection and diagnostics

POSITION: RESEARCHER KEY: I

YEAR: 1995

---

CENTER: University of Princeton

Dpt of Chemical Engineering

CITY: Princeton (New Jersey), USA

DURATION: 1 month

TOPIC: Optimization and integrated design

POSITION: RESEARCHER KEY: I

YEAR: 1999

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CENTER: Control Systems Centre. University of Manchester

CITY: Manchester, United Kingdom

DURATION: 1 month

TOPIC: Agent based Consensus Control

POSITION: Researcher, KEY: I

YEAR: 2018

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Curriculum Vitae

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## COMMUNICATIONS IN INTERNATIONAL CONGRESSES

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AUTHORS: C. Prada, P. Vega, L. Alonso  
TITLE: Modelling and Simulation of a sulfitation tower for Ph adaptive control  
CONGRESS: XI Int. Conf. on Applied Modelling and Simulation IASTED. pp 132-135  
LOCATION/YEAR: Nice (France), 1984  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: P. Vega, C. Prada, F. Prada  
TITLE: A computer system for design and training on advanced control techniques  
CONGRESS: Symposium on Simulation on control systems, IFAC/IMACS. pp 613-618  
LOCATION/YEAR: Vienna (Austria), 1986  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: C. Prada, P. Vega  
TITLE: A reduced-variance pole-assignment PID controller  
CONGRESS: Conference on Identification, Modelling and Simulation IASTED. pp 242-246  
LOCATION/YEAR: Paris (France), 1987  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: P. Vega, C. Prada, E. Martínez  
TITLE: Identification methods and input-output signals: a comparative study by simulation  
CONGRESS: AMSE International Conference, Vol. 1A pp 3-14  
LOCATION/YEAR: Karlsruhe, (Germany), 1987  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: P. Vega, R. G. Cameron, S. Mossaheb  
TITLE: Application of a robust multivariable regulator  
CONGRESS: International Symposium on applied control, filtering and signal processing. IASTED  
LOCATION/YEAR: Geneve, (Switzerland), 1987  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: M. Arranz, R. Panera, P. Vega, C. Prada  
TITLE: An interactive package for multivariable control design in the frequency domain  
CONGRESS: 36th Conference on Mini and Micro computers, ISMM pp 616-620  
LOCATION/YEAR: Gerona (Spain), 1988  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: P. Vega, J. Serrano, C. Prada  
TITLE: A comparative study of Automatic Tuning methods for industrial PID controllers  
CONGRESS: 8th Int. Symp. on Modeling, Simulation and Control, IASTED pp 198-201. Ed. M Hamza Acta Press. ISBN 0-88986-113-7  
LOCATION/YEAR: Grindelwald (Switzerland), 1989  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: P. Vega, M. B. Zarrop  
TITLE: Optimal approaches to Self-tuning PID control  
CONGRESS: IFAC Symp: ACAPS 89, pp 371-374  
LOCATION/YEAR: Glasgow (UK), 1989  
TYPE OF PARTICIPATION: Talk

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AUTHORS: C. Prada, J. Serrano, P. Vega  
TITLE: A method for designing PID regulators  
CONGRESS: 9th Int. Symp. on Modelling Identification and Control, IASTED pp 233-236  
Ed. M Hamza Acta Press. ISBN 0-88986-144  
LOCATION/YEAR: Innsbruck (Austria), 1990  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: P. Vega, Z. Xu, R. G. Cameron, F. Li  
TITLE: Robust multivariable regulator design based on passivity: wo examples  
CONGRESS: AMST 90 4th International Symposium  
LOCATION/YEAR: Bradford, (UK), 1990  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: C. Prada, P. Vega  
TITLE: GPC control of a pulp dryer  
CONGRESS: 9th Symposium in Identification and System Parameter Estimation, IFAC/FORS  
pp 714-719. ISBN 963 311 331 8  
LOCATION/YEAR: Budapest (Hungary), 1991  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: P. Vega, C. Prada  
TITLE: An adaptive PID controller for process control  
CONGRESS: 1st European Control Conference, ECC, 91, GRA.  
Vol. 3, pp. 2440-2446. Editions Hermes.  
ISBN 2-86601-280-1  
LOCATION/YEAR: Grenoble, (France), 1991  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: M. J. Fuente, C. Prada, P. Vega  
TITLE: Optimization Tool in a Continuous Dynamic Simulation Language  
CONGRESS: European Simulation Symposium, SCS, pp 475-479  
LOCATION/YEAR: Berlin (Germany), 1992  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: P. Vega, S. D'Amico, L. Alonso  
TITLE: Neural Networks Based Modelling and Simulation of a nonlinear Process  
CONGRESS: 11th IASTED International Conference of Applied  
Informatics. Pp. 56-59. Editor M.H. Hamza  
ISBN 0-88986-175-7  
LOCATION/YEAR: Annency (France), 1993  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: P. Vega, M. B. Zarrop, M. J. Fuente  
TITLE: Fault Detection and Diagnosis in an Evaporation Station  
CONGRESS: 2nd European Control Conference, ECC'93,  
pp. 1342-1347, Vol. 3. ISBN 90 367 0374 3  
LOCATION/YEAR: Groningen (The Netherlands), 1993  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: A. Wilson, C. de Prada, P. Vega  
TITLE: Simulated Predictive Control of an industrial process  
CONGRESS: Summer Computer Simulation Conference, SCS pp.813-818  
LOCATION/YEAR: Boston, (USA), 1993  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: C. de Prada, F. Morilla, S. Dormido, P. Vega  
TITLE: Simulation and Control of the condensate circuit in a nuclear power station  
CONGRESS: Summer Computer Simulation Conference, SCS pp 807-812  
LOCATION/YEAR: Boston, (USA), 1993  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: C. Prada, J. Serrano, P. Vega  
TITLE: A comparative study of GPC and DMC controllers.  
CONGRESS: Advances in Model Based Predictive Control, CIM-Europe. pp 220-232  
LOCATION/YEAR: Oxford, (U.K), 1993  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: F. Tadeo, P. Vega, R. G. Cameron  
TITLE: The Robust control of a milk of lime blending tank  
CONGRESS: International Symposium on Applications of Multivariable System Techniques. AMST'94  
LOCATION/YEAR: Bradford, (United Kingdom), 1994  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: A. Aragón, C. Prada, P. Vega, G. Gutierrez  
TITLE: Experiencias de regulación de una caldera termoeléctrica  
CONGRESS: INFORMATICA'94, CONAI'94. ENE089  
LOCATION/YEAR: La Habana (Cuba), 1994  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: C. Prada, P. Vega  
TITLE: A level control problem in an evaporation station  
CONGRESS: INFORMATICA'94; CONAI'94. ENE089  
LOCATION/YEAR: La Habana (Cuba), 1994  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: M.J. Fuente, P. Vega, M.B. Zarrop  
TITLE: Fault Detection of large parameter changes in a waste water plant  
CONGRESS: IFAC Symposium on Fault Detection Supervision and safety for technical process. SAFEPROCESS'94. pp 159-164. Vol. 1  
LOCATION/YEAR: Helsinki, (Finland), 1994  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: J. M. Zamarreño, P. Vega  
TITLE: Modelling, Simulation, Control and Neural Networks based Failure Detection of a steam generation and electrical process  
CONGRESS: Simulation of Continuous Systems, SCS-ESM'94, SCS. pp 769-773. ISBN 1-56555-028-5  
LOCATION/YEAR: Barcelona (Spain), 1994  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: L.F Acebes, P. Vega  
TITLE: Use of Neural Nets for Dynamic Modelling and Predictive Control in an Evaporation Station.  
CONGRESS: Simulation of Continuous Sytems, SCS-ESM'94, SCS pp 774-778. ISBN 1-56555-028-5  
LOCATION/YEAR: Barcelona (Spain), 1994  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: P. Vega, A. Cipriano, C. Prada, J. Tancara, M. Guarini, A. Aragón  
TITLE: Evaluation of Advanced regulators for an Evaporation Station  
CONGRESS: IEEE Conf. on Fuzzy Systems, pp. 648-654, Vol. 1  
IEEE World Congress on Computational Intelligence  
LOCATION/YEAR: Orlando, (USA), 1994  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: S.D´Amico, P. Vega, L. Alonso, J.M. Zamarreño  
TITLE: Modelling and Control of an industrial process using Neural Networks  
CONGRESS: ANNIE'94. Vol 4, pp. 1029-1034, ASME Press  
LOCATION/YEAR: Rolla, (USA), september 1994  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: M. J. Fuente, P. Vega  
TITLE: A comparison of Identification Algorithms for rapidly time-varying parameters on a real process  
CONGRESS: IFAC Symp: ACAPS 95. pp 141-146  
LOCATION/YEAR: Budapest (Hungary), 1995  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: P. Vega, M. H. Randeree, C. Prada  
TITLE: Robust Control of an Evaporation Station  
CONGRESS: 3rd European Control Conference, ECC 95, Vol. 4, pp 3869-3874  
LOCATION/YEAR: Rome (Italy), 1995  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: M. J. Fuente, P. Vega  
TITLE: A neural network based approach for Fault Detection and diagnosis: Application to a real process  
CONGRESS: 4th IEEE Conference on Control Applications  
pp 188-193. ISBN 0-7803-2550-8  
LOCATION/YEAR: Albany, New York, (USA), 1995  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: O. Pérez, F. Tadeo, P. Vega  
TITLE: Robust Control of a pH control plant  
CONGRESS: 4th IEEE Conference on Control Applications. pp 854-855  
LOCATION/YEAR: Albany, New York, (USA), 1995  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: F. Tadeo, P. Vega, C. Prada  
TITLE: Diseño de Controladores Robustos para una Caldera Industrial  
CONGRESS: First Congress of Matlab users UNED  
LOCATION/YEAR: Madrid (Spain), 1995  
TYPE OF PARTICIPATION: Talk

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---

AUTHORS: F. Tadeo, T. Alvarez, P. Vega  
TITLE: Control con restricciones de una caldera industrial  
CONGRESS: II Conferencia Internacional de Control Automático en Ahorro de energía. CONAI'96.  
INFORMATICA 96  
LOCATION/YEAR: La Habana, (Cuba), 1996  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: J. M. Zamarreño, P. Vega  
TITLE: Red Dinámica Recurrente: Modelo de Identificación  
CONGRESS: II Conferencia Internacional de Control Automático en Ahorro de energía. CONAI'96.  
INFORMATICA 96  
LOCATION/YEAR: La Habana, (Cuba), 1996  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: P. Vega, G. Gutiérrez  
TITLE: Análisis de interacción entre diseño y la controlabilidad de plantas de depuración de aguas residuales  
CONGRESS: II Conferencia Internacional de Control Automático en Ahorro de energía. CONAI'96.  
INFORMATICA 96  
LOCATION/YEAR: La Habana, (Cuba), 1996  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: J.M. Zamarreño, P. Vega  
TITLE: Identification and Predictive Control of a Melter Unit from the sugar Industry using recurrent neural nets  
CONGRESS: EANN'96. Engineering Application of Neural Network  
ISBN 952-90-7517-0, pp119-126  
LOCATION/YEAR: London (UK), 1996  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: J.M. Zamarreño, P. Vega  
TITLE: Neural Predictive Control: Application to a highly nonlinear system  
CONGRESS: IFAC World congress  
LOCATION/YEAR: San Francisco, USA, 1996  
TYPE OF PARTICIPATION: Poster

---

AUTHORS: F. Tadeo, P. Vega  
TITLE: Optimal Control of a Laboratory Plant  
CONGRESS: UKAC International Conference on CONTROL'96,  
Conference Publication Iss. 426, IEE. Pp 953-958  
LOCATION/YEAR: England, 1996  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: F. Tadeo, P. Vega  
TITLE: Design of Robust Controllers for an industrial MIMO plant  
CONGRESS: UKAC International Conference on CONTROL'96  
Conference Publication Iss. 426, IEE, pp 799-804  
LOCATION/YEAR: England, 1996  
TYPE OF PARTICIPATION: Talk

---

---

AUTHORS: E. S. González, P. Vega  
TITLE: Techniques for classifying sugar crystallization images based on spectral analysis and the use of neural networks  
CONGRESS: 3rd International Workshop on Image and Signal processing LOCATION/YEAR: Manchester (UK), 1996  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: M. Mediavilla, L. J. De Miguel, P. Vega  
TITLE: Isolation of multiplicative faults in an industrial actuator benchmark  
CONGRESS: Safeprocess'97  
LOCATION/YEAR: Hull (UK), 1997  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: P. Vega, G. Gutiérrez  
TITLE: Effect of the process design on the controllability of water treatment plants  
CONGRESS: AICHE'97  
LOCATION/YEAR: Los Angeles (USA), 1997  
TYPE OF PARTICIPATION: Poster

---

AUTHORS: P. Vega, G. Gutiérrez  
TITLE: Optimization of objective functions for the control and operation of activated sludge processes  
CONGRESS: AICHE'97  
LOCATION/YEAR: Los Angeles (USA), 1997  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: V. Moreno, P. Vega, B. Curto  
TITLE: Design, control and supervision of a real pilot plant for batch filtering of industrial wastewater  
CONGRESS: AICHE'97  
LOCATION/YEAR: Los Angeles (USA), 1997  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: F. Tadeo, P. Vega, T. Hologan  
TITLE: 2 DOF I1 Optimal control of a pH pilot plant  
CONGRESS: AICHE'97  
LOCATION/YEAR: Los Angeles (USA), 1997  
TYPE OF PARTICIPATION: Poster

---

AUTHORS: F. Tadeo, A.M. Holohan, P. Vega  
TITLE: I1 regulation of a PH control plant  
CONGRESS: ESCAPE'98  
LOCATION/YEAR: Brussels (Belgium), 1998  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: G. Gutiérrez, P. Vega  
TITLE: Influencia del diseño de las plantas en la controlabilidad en lazo cerrado y en el coste de explotación de las mismas  
CONGRESS: II Conferencia Internacional de Control Automático en Ahorro de energía. CONAI'98. INFORMATICA 98  
LOCATION/YEAR: La Habana (Cuba), 1998  
TYPE OF PARTICIPATION: Talk



---

AUTHORS: R. Cordon, E. Sanz, P. Vega  
TITLE: Robust control in robotic manipulators with DC motors  
CONGRESS: 5th Workshop on Advanced Motion Control. (IEEE)  
LOCATION/YEAR: Coimbra (Portugal), 1998  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: F. Tadeo, P. Vega, A. M. Holohan  
TITLE: Independent Joint Control using Two-Degrees-of-Freedom Structures  
CONGRESS: IEEE Conference on Control Applications '98  
LOCATION/YEAR: Trieste, Italy. September, 1998  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: P. Vega, G. Gutiérrez  
TITLE: Optimization of objective functions for the Design, Control and Operation of wastewater treatment plants  
CONGRESS: European Control Conference ECC' 99  
LOCATION/YEAR: Karlsruhe Germany, 1999  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: G. Gutiérrez, P. Vega  
TITLE: Integrated design of Activated Sludge Processes taking into account the closed loop controllability  
CONGRESS: ESCAPE 2000  
LOCATION/YEAR: Florence, Italy 2000  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: F. Tadeo, M.J. Grimble, P. Vega  
TITLE: Design of a l1 Optimal Controller for a Hydrogen Reformer Plant  
CONGRESS: American Control Conference, ACC  
LOCATION/YEAR: USA, 2000  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: A. Gil , P. Vega, M. Francisco  
TITLE: Integrated design of a pH processes  
CONGRESS: Modelling, Identification, and Control IASTED International Conference  
LOCATION/YEAR: Innsbruck (Austria), February 2001  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: M. Francisco, P. Vega, A. Gil  
TITLE: Fermenter Modelling using local linear models  
CONGRESS: Modelling, Identification, and Control IASTED International Conference  
LOCATION/YEAR: Innsbruck (Austria), February 2001  
TYPE OF PARTICIPATION: Talk

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AUTHORS: G. I. Sainz, M.J. Fuente, P. Vega  
TITLE: Recurrent Neuro Fuzzy Modelling of a biotechnological process  
CONGRESS: European Control Conference ECC'01  
LOCATION/YEAR: Porto (Portugal) September 2001  
TYPE OF PARTICIPATION: Talk

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AUTHORS: T. Alvarez, Y. Martin, S. Pérez, F. Santos, F. Tadeo, S. González,  
J.L. Arribas, P. Vega  
TITLE: Classification of Microorganisms using Image Processing Techniques  
CONGRESS: IEEE International Conference on Image Processing  
LOCATION/YEAR: Thessaloniki, Greece, October 2001  
TYPE OF PARTICIPATION: Talk

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AUTHORS: G. Gutierrez and P. Vega  
TITLE: Integrated Design of Biological Processes and their Control System  
including Closed Loop Properties for Disturbances Rejection  
CONGRESS: 15th IFAC World Congress  
LOCATION/YEAR: Barcelona (Spain) July 2002  
TYPE OF PARTICIPATION: Talk

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AUTHORS: G. Gutierrez and P. Vega  
TITLE: Process Synthesis applied to Activated Sludge Processes: A  
framework with MINLP optimisation models  
CONGRESS: 15th IFAC World Congress  
LOCATION/YEAR: Barcelona (Spain) July 2002  
TYPE OF PARTICIPATION: Talk

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AUTHORS: S. Revollar, R. Lammana, P. Vega  
TITLE: Aplicación de Algoritmos genéticos para el diseño integrado de  
reactores  
CONGRESS: VIII Iberoamerican Conference on Artificial Intelligence  
(IBERAMIA 2002)  
LOCATION/YEAR: Sevilla November 2002  
TYPE OF PARTICIPATION: Talk

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AUTHORS: M. Francisco, P.Vega, O.Pérez, M. Poch  
TITLE: Dynamic Optimization for Activated Sludge Process Integrated Design  
CONGRESS: European Control Conference (ECC '03)  
LOCATION/YEAR: Cambridge (UK), 2003  
TYPE OF PARTICIPATION: Talk

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AUTHORS: O.Pérez, P.Vega, W. Colmenares,  
TITLE: Linear Matrix Inequalities for the Integrated Design of Processes  
CONGRESS: European Control Conference (ECC '03)  
LOCATION/YEAR: Cambridge (UK), 2003  
TYPE OF PARTICIPATION: Talk

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AUTHORS: P. Vega, M.J. Fuente, P. Vallejo, G. Sainz  
TÍTULO: A comparative study of neural and neural-fuzzy models to identify a  
real system  
CONFERENCE: Engineering Application of Artificial Intelligence ANN'03  
LOCATION: Spain, 2003  
TYPE OF PARTICIPATION: Talk

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AUTHORS: I. Rodríguez-Roda, M. Poch, P. Vega, R. Bañares-Alcántara, M. Francisco  
TITLE: Development and validation of a decision support system for integrated design of biological  
wastewater treatment processes  
CONGRESS: ECCE '03 European Conference in Chemical Engineering  
LOCATION/YEAR: Spain, 2003  
TYPE OF PARTICIPATION: Talk

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AUTHORS: M. Francisco, P. Vega, M.Poch, I. Rodríguez-Roda  
TITLE: Non-linear optimisation for the integrated design of activated sludge processes .  
CONGRESS: ECCE '03 European Conference in Chemical Engineering,  
LOCATION/YEAR: Spain, 2003  
TYPE OF PARTICIPATION: Poster

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AUTHORS: O. Pérez, W. Colmenares, P. Vega, M. Francisco  
TITLE: Diseño Integrado de Sistemas utilizando controladores PID via Desigualdades lineales Matriciales  
CONGRESS: IV Congreso de Automatización y control, CAC'2003  
LOCATION/YEAR: Mérida (Venezuela). November 2003  
TYPE OF PARTICIPATION: Talk

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AUTHORS: S. Revollar, R. Lammana, P. Vega  
TITLE: Síntesis y diseño integrado de un sistema de reactores químicos con criterios d lazo abierto.  
CONGRESS: IV Congreso de Automatización y control, CAC'2003  
LOCATION/YEAR: Mérida (Venezuela). November 2003  
TYPE OF PARTICIPATION: Talk

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AUTHORS: S. Revollar, R. Lamanna and P. Vega  
TITLE: Algorithmic Synthesis And Integrated Design of Chemical Reactor Systems Using Genetic Algorithms  
CONGRESS: 5th International Symposium on Soft Computing for Industry, World Automation Congress. IFMIP, WAC 2004 . pp:453-7  
LOCATION/YEAR: Sevilla, (Spain) june 2004.  
TYPE OF PARTICIPATION: Talk

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TITLE: Integrated System Design with Standard Industrial Controllers via LMIS  
AUTHORS: O. Pérez, W. Colmenares, E. Granado, P. Vega and M. Francisco  
CONGRESS: ISIAC, World Automation Congress WAC 2004, Volume 2 pp 403-406  
LOCATION/YEAR: Sevilla (Spain) 2004  
TYPE OF PARTICIPATION: Talk

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AUTHORS: S. Revollar, P. Vega , R. Lamanna  
TITLE: Algorithmic Synthesis and Integrated Design for Activated Sludge Processes Using Genetic Algorithms  
CONGRESS: ESCAPE15 , p 725-29  
LOCATION/YEAR: Barcelona June 2005  
TYPE OF PARTICIPATION: Poster

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AUTHORS: M. Francisco, S. Revollar, P. Vega , R. Lamanna  
TITLE: A comparative study of deterministic and stochastic optimization methods for the Integrated design of processes  
CONGRESS: 16th IFAC World Congress  
LOCATION/YEAR: Prague, 2005  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: M. Francisco, P. Vega, O. Pérez  
TITLE: Process Integrated design within a Model Predictive Control framework  
CONGRESS: 16th IFAC World Congress  
LOCATION/YEAR: Prague, 2005  
TYPE OF PARTICIPATION: Talk

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AUTHORS: Silvana Revollar, Rosalba Lamannaa, Pastora Vega  
TITLE: Synthesis and integrated design of Activated Sludge Processes Using Evolutionary Algorithms  
CONGRESS: PASI' 2005,  
LOCATION/YEAR: Argentina. August 2005  
TYPE OF PARTICIPATION: Talk

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AUTHORS: Silvana Revollara, Rosalba Lamannaa, Pastora Vega  
TITLE: A Genetic Algorithm for the Synthesis of Activated Sludge Processes  
CONGRESS: 7th World Congress of Chemical Engineering.  
LOCATION/YEAR: Glasgow (UK), 2005  
TYPE OF PARTICIPATION: Poster

---

AUTHORS: S. Revollar, R. Lamanna, P. Vega, M. Libretti, L. Lozada, J. Ñáñez  
TITLE: Aplicación de un algoritmo evolutivo en el diseño integrado de una planta de fangos activados  
CONGRESS: V Congreso de Automatización y control, CAC'2005  
LOCATION/YEAR: Caracas (Venezuela), Noviembre 2005  
TYPE OF PARTICIPATION: Talk

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AUTHORS: M. Francisco, P. Vega  
TITLE: Sintonía automática de controladores predictivos aplicada al proceso de fangos activados  
CONGRESS: V Congreso de Automatización y control, CAC'2005  
LOCATION/YEAR: Venezuela., 2005  
TYPE OF PARTICIPATION: Talk

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AUTHORS: S. Revollar, R. Lamanna, P. Vega  
TITLE: Genetic Algorithms for the simultaneous design and control of continuous stirred tank reactor systems  
CONGRESS: Chemical Process Control CPC'7  
LOCATION/YEAR: Lake Louise, Alberta (Canada) January 2006  
TYPE OF PARTICIPATION: Talk

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AUTHORS: M. Francisco, P. Vega  
TITLE: Optimal Automatic Tuning of Model Predictive Controllers for the Activated Sludge Process  
CONGRESS: Chemical Process Control CPC'7  
LOCATION/YEAR: Lake Louise, Alberta (Canada) January 2006  
TYPE OF PARTICIPATION: Talk

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AUTHORS: R. Valle, B. Pérez-Lancho, E. Sanz, P. Vega  
TITLE: Learning control strategies in building heating systems  
CONGRESS: Advance in Control Education (ACE2006)  
LOCATION/YEAR: Madrid (Spain), 2006  
TYPE OF PARTICIPATION: Talk

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AUTHORS: Fawzat Alawneh, P. Vega, Mario Francisco, Roberto Sandín  
TITLE: An Integrated Tool for the Activated Sludge Processes Integrated Design  
CONGRESS: 7th Portuguese Conference on Automatic Control, 2006  
LOCATION/YEAR: Lisbon (Portugal), 2006  
TYPE OF PARTICIPATION: Talk

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AUTHORS: Pérez, O.; Colmenares, W.; Granado, E; Vega P.; Mario F..  
TITLE: Integrated System Design with PID Controllers via LMIs.  
CONGRESS: IEEE PES T & D 2006  
LOCATION/YEAR: Caracas, Venezuela. August 2006. CD  
TYPE OF PARTICIPATION: Talk

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AUTHORS: M. Francisco, P. Vega  
TITLE: Integrated Design of Wastewater Treatment Processes using Model Predictive Control  
CONGRESS: European Control Conference 07 ,  
Proceedings ISBN 976-960-89028-5-5 pp 5333-5340  
LOCATION/YEAR: Greece, 2007  
TYPE OF PARTICIPATION: Talk

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AUTHORS: P. Vega, F. Alawneh, L. González, M. Francisco, B. Pérez  
TITLE: A Computer Based Tool for Integrated Design of Wastewater Treatment Plants and Advanced Control Systems  
CONGRESS: European Congress of Chemical Engineering – 6  
LOCATION/YEAR: Copenhagen (Denmark), 2007  
TYPE OF PARTICIPATION: Talk

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AUTHORS: M. Francisco, P. Vega  
TITLE: Norm-based Approaches for Automatic tuning of Model Based Predictive Control  
CONGRESS: European Congress of Chemical Engineering – 6  
LOCATION/YEAR: Copenhagen (Denmark), 2007  
TYPE OF PARTICIPATION: Poster

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AUTHORS: M. Francisco, P. Vega, E. Sanz  
TITLE: Norm-based Approaches for Integrated Design of WWTP  
CONGRESS: European Congress of Chemical Engineering – 6  
LOCATION/YEAR: Copenhagen (Denmark), 2007  
TYPE OF PARTICIPATION: Talk

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AUTHORS: G. Gutiérrez, P. Vega, C. Prada  
TITLE: Integrated Close Loop Control and Process Design  
CONGRESS: DYCOPS'2007  
LOCATION/YEAR: Cancun (Mexico), 2007  
TYPE OF PARTICIPATION: Talk

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AUTHORS: F. Tadeo, A. Hologan, P. Vega  
TITLE: Two-degrees-of-freedom compensators for systems with commands bounded in slope  
CONGRESS: 3rd IFAC SYMP.on System, Structure and Control SSSC'07  
LOCATION/YEAR: Foz do Iguazú, Brazil October, 2007  
TYPE OF PARTICIPATION: Talk

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AUTHORS: M. Francisco, P.Vega.  
TITLE: Multi-model approaches for Integrated Design of Wastewater Treatment plants with Model Predictive Control  
CONGRESS: XVII IFAC World Congress  
LOCATION/YEAR: Seoul (South Korea), 2008

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AUTHORS: P.Vega., M. Francisco, F. Tadeo  
TITLE: Multiobjective optimization for automatic tuning of robust model based predictive controllers  
CONGRESS: XVII IFAC World Congress  
LOCATION/YEAR: Seoul (South Korea), 2008

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AUTHORS: S. Revollar, M. Francisco, P. Vega, R. Lamanna  
TITLE: Genetic Algorithms for the Synthesis and Integrated Design of Processes Using Advanced Control Strategies  
CONGRESS: International Symposium on Distributed Computing and Artificial Intelligence (DCAI 2008) Pub. Springer Verlag.  
ISSN: 1615-3871 (Print) 1860-0794 (Online),  
ISBN: 978-3-540-85862-1, DOI: 10.1007/978-3-540-85863-8  
Book series Advances in Soft Computing  
LOCATION/YEAR: Salamanca (Spain), 2008  
TYPE OF PARTICIPATION: Talk

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AUTHORS: S. Revollar, D. Domínguez, Z. Ramírez, P.Vega, R. Lamanna, H. Alvarez  
TITLE: Diseño Integrado de la planta de sulfitación en un ingenio azucarero  
CONGRESS: Book: XIII Congreso Latinoamericano de Control Automático LOCATION/YEAR: Mérida (Venezuela), 2008  
TYPE OF PARTICIPATION: Talk

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AUTHORS: Domínguez D.; Revollar, S. ; Francisco, M. ; Lamanna R.; Vega, P.  
TITLE: Simultaneous Synthesis and Integrated Design of Chemical Processes Using IMC PID Tuning Methods  
CONGRESS: ICHEAP-09  
LOCATION/YEAR: Rome, Italy Date: May 2009  
TYPE OF PARTICIPATION: Talk

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AUTHORS: M. Francisco, P. Vega , M. J. Fuente  
TITLE: Model Predictive Control tuning considering l1 norm for disturbance rejection  
CONGRESS: ECC'09  
LOCATION/YEAR: Budapest, Hungary, Date August 2009  
TYPE OF PARTICIPATION: Talk

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AUTHORS: D. Garcia-Alvarez, M.J. Fuente, P. Vega  
TITLE: Fault Detection in Processes with Multiple Operation Modes Using Switch-PCA and Analysis of Grade Transition  
CONGRESS: ECC'09  
LOCATION/YEAR: Budapest, Hungary, Date August 2009  
TYPE OF PARTICIPATION: Talk

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AUTHORS: D. Garcia-Alvarez, M.J. Fuente, P. Vega, G. Sainz  
TITLE: Fault detection and diagnosis using multivariate statistical techniques in a Wastewater Treatment plant  
CONGRESS: ADCHEM'09  
LOCATION/YEAR: Istanbul, Turkey, Date: July 2009  
TYPE OF PARTICIPATION: Talk

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AUTHORS: Francisco, M. ; Revollar, S.; Vega, P. ; Lamanna, R.  
TITLE: Simultaneous Synthesis, Design and Control of Processes Using Model Predictive Control  
CONGRESS: ADCHEM'09  
LOCATION/YEAR: Istanbul, Turkey Date: July 2009  
TYPE OF PARTICIPATION: Talk

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AUTHORS: H. Elbahja, O.Bakka, P.Vega and F.Mesquine  
TITLE: Modelling, estimation and optimal control design of a biological wastewater treatment process  
CONGRESS: 14th International conference on methods and Models in Automation and Robotics (MMAR'2009),  
LOCATION/YEAR: Szczecin, Poland, 2009  
TYPE OF PARTICIPATION: Talk

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AUTHORS: O.Bakka, H.Elbahja, P.Vega and F.Mesquine  
TITLE: Non linear GPC of a nutrient removal biological plant  
CONGRESS: 14th IEEE International Conference on Emerging Technologies and Factory Automation, (ETFA'09),  
LOCATION/YEAR: Mallorca, Spain. 2009  
TYPE OF PARTICIPATION: Talk

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AUTHORS: A. Gajate, R. Haber, P. Vega  
TITLE: A Transductive Neuro-Fuzzy Force Control: An Ethernet-Based Application to a Drilling Process  
CONGRESS: 16th International Conference on Neural Information Processing - ICONIP 2009 (Tailandia, 2009), LNCS 5864, Part II, pp. 573-582 (ISBN: 978-3-642-10682-8)  
TYPE OF PARTICIPATION: Talk

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AUTHORS: A. Gajate, R. Haber, J.R. Alique, P. Vega  
TITLE: Transductive-Weighted Neuro-fuzzy Inference System for Tool Wear Prediction in a Turning Process  
CONGRESS: 4th International Conference on Hybrid Artificial Intelligence Systems – HAIS **2009** (Spain, 2009), LNAI 5572, pp. 113-120 (ISBN: 978-3-642-02318-7)  
TYPE OF PARTICIPATION: Talk

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AUTHORS: A. Gajate, R. Haber, J.R. Alique, P. Vega  
TITLE: Evolving Neuro-Fuzzy Systems for Controlling Complex Electromechanical Systems. A Case Study on the Drilling Force Control  
CONGRESS: IEEE World Congress on Computational Intelligence – WCCI Spain, **2010**  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: Francisco, M. ; Álvarez, H. ; Vega, P. ; Revollar, S.  
TITLE: Stable model predictive control tuning considering asymmetric bounded signals  
CONGRESS: European Symposium on Computer Aided Engineering (ESCAPE20)  
LOCATION/YEAR: Ischia, Italy Date: June **2010**  
TYPE OF PARTICIPATION: Talk

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AUTHORS: Revollar, S.; Álvarez, H.; Lamanna, R.; Vega, P. ; Francisco, M.  
TITLE: Multiobjective Genetic Algorithms for the Integrated Design of Chemical Processes Using Advanced Control Techniques  
CONGRESS: European Symposium on Computer Aided Engineering (ESCAPE20)  
LOCATION/YEAR: Ischia, Italy Date: June **2010**  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: S. Revollar, A. Rodríguez, R. Lamanna, M. Francisco, P. Vega.  
TITLE: Multiobjective genetic algorithms for the simultaneous design and control of the activated sludge process.  
CONGRESS: Congress of Chemical and Process Engineering (CHISA 2010)  
LOCATION/YEAR: Prague, Czech Republic November **2010**  
TYPE OF PARTICIPATION: Poster

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AUTHORS: J.F. De Paz, S. Rodríguez, A. Gil, J. M. Corchado, P. Vega  
TITLE: Enhanced Self Organized Dynamic Tree Neural Network.  
CONGRESS: Proceedings of the 5th International Conference on Hybrid Artificial Intelligence Systems.  
LOCATION/YEAR: San Sebastián, Spain, in June of **2010**.  
TYPE OF PARTICIPATION: Talk

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AUTHORS: Revollar S., Francisco M., Lamanna R. y Vega P.  
TITLE: Comparison of Classic and Multi-objective Genetic Algorithms for Optimal Design and Control of Chemical Processes  
CONGRESS: 24-th European Conference on Operational Research (EURO XXIV)  
LOCATION/YEAR: Lisboa, Portugal, Julio, **2010**  
TYPE OF PARTICIPATION: Talk

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AUTHORS: H. Elbahja, O. Bakka, P. Vega, F. Mesquine  
TITLE: Investigation of Different Control Strategies for the Waste Water Treatment Plant  
CONGRESS: STA'2010  
LOCATION/YEAR: Monastir, Tunisia, 19-21th December, **2010**  
TYPE OF PARTICIPATION: Talk

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AUTHORS: F. Mesquine, O. Bakka, H. Elbahja, P. Vega  
TITLE: Observer based Regulator Problem for WWTP with Constraints on Control,  
CONGRESS: Emerging Technologies and Factory Automation (ETFA 2010)  
LOCATION/YEAR: Bilbao, Spain, September **2010**  
TYPE OF PARTICIPATION: Talk



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AUTHORS: M. Francisco, P. Vega, H. Elbahja, H. Álvarez, S. Revollar  
TITLE: Integrated Design of Processes with Infinity Horizon Model  
Predictive Controllers  
CONGRESS: Emerging Technologies and Factory Automation (ETFA 2010)  
LOCATION/YEAR: Bilbao, Spain, September **2010**  
TYPE OF PARTICIPATION: Talk

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AUTHORS: S. Rodríguez, O. Gil, F. de la Prieta, C. Zato, J.M. Corchado,  
P. Vega, M. Francisco  
TITLE: People detection and stereoscopic analysis using MAS  
CONGRESS: 14th International Conference on Intelligent Engineering Systems (INES). IEEE Xplore Digital  
Library. pp. 159-164. ISBN 978-1-4244-7650-3  
LOCATION: Las Palmas de Gran Canaria (Spain), Mayo **2010**  
TYPE OF PARTICIPATION: Talk

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AUTHORS: M. Francisco, P. Vega, S. Revollar  
TITLE: Model Predictive Control of BSM1 benchmark of wastewater treatment process: a tuning  
procedure.  
CONGRESS: ECC 2011  
LOCATION/YEAR: Orlando (EE.UU.), November **2011**  
TYPE OF PARTICIPATION: Talk

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AUTHORS: P. Vega, F. Almaraz, O. Gil  
TITLE: Massive Multiplayer on line game for Spanish learning  
CONGRESS: Proceedings 4th International Conference ICT for Language  
Learning. ISBN 9788876476778.  
LOCATION: Florence, Italy (October, **2011**)  
TYPE OF PARTICIPATION: Talk

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AUTHORS: J. Pittol, Y. Sánchez, R. Lammana, S. Revollar, P. Vega  
TITLE: A fuzzy virtual sensor for substrate concentration in a wastewater  
treatment plant.  
CONGRESS: IASTED  
LOCATION: USA (**2011**)  
TYPE OF PARTICIPATION: Talk

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AUTHORS: H. Elbahja, F. Tadeo, P. Vega, O. Bakka  
TITLE: Stabilization under constrained states and controls of positive 2-D systems described by a general  
model  
CONGRESS: nDS'11.  
LOCATION: Poitiers (France) (**2011**)  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: José M. Martín, Pastora Vega, Silvana Revollar  
TITLE: Nonlinear MPC for the optimal operation of the N-Removal Process  
CONGRESS: Mediterranean Control Conference  
LOCATION: Barcelona (**2012**)  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: L. Pérez, H. Alvarez, P. Vega, S. Revollar, M. Francisco.  
TITLE: An Innovative Non Linear Model Predictive Controller for the Optimal Operation of the Activated Sludge Process  
CONGRESS: Ecotechnologies for Wastewater Treatment. Technical, Environmental and Economic Challenges  
LOCATION: Santiago de Compostela, Spain (**2012**)  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: S. Revollar, R. Lamanna, A. Rodríguez, P. Vega, M. Francisco.  
TITLE: Integrated design methodology for improving the economics and dynamical performance of the activated sludge process  
CONGRESS: Ecotechnologies for Wastewater Treatment. Technical, Environmental and Economic Challenges  
LOCATION: Santiago de Compostela, Spain (**2012**)  
TYPE OF PARTICIPATION: Talk

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AUTHORS: Hicham El bahja, Pastora Vega Cruz, Silvana Revollar  
TITLE: A closed Loop Paradigm for NLGPC with Constraints on Control Variables.  
CONGRESS: World Automation Conference **2012**  
LOCATION: Puerto Vallarta, Mexico (**2012**)  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: José M. Martín, Pastora Vega, Silvana Revollar, Mario Francisco  
TITLE: Set-point Optimization for Enhancing the MPC Control of the N-Removal Process in WWTP's..  
CONGRESS: World Automation Conference  
LOCATION: Puerto Vallarta, Mexico (**2012**)  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: P. Vega, S. Revollar, J.M. Martín, M. Francisco.  
TITLE: Static and dynamic set point optimization techniques for optimal operation of wastewater treatment plants  
CONGRESS: Conference: European Control Conference (ECC), 2013  
LOCATION: Zurich, Switzerland (**2013**)  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: H.El bahja and P Vega,  
TITLE: Closed Loop Paradigm Control Based on Positive Invariance for a Wastewater Treatment Plant ,  
CONGRESS: 3th International Conference on Systems and Control (ICSC'13),  
LOCATION: Algiers, Algeria (**2013**)  
TYPE OF PARTICIPATION: Talk

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AUTHORS: I. Alaayad, H. Elbahja and P. Vega  
TITLE: A Sliding Mode Based on Fuzzy Logic Control for Photovoltaic power System using DC-DC Boost Converter,  
CONGRESS: 3th International Conference on Systems and Control (ICSC'13),  
LOCATION: Algiers, Algeria (**2013**)  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: Alejandro Goldar, Silvana R. Revollar, Rosalba Lamanna, Pastora Vega  
TITLE: Neural Network Identification of N-Removal Process in Waste Water Treatment Plants  
CONGRESS: (MIC 2014) IASTED Conference  
LOCATION: Innsbruck (Austria) Algiers (**2014**)  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: H. El bahja, P. Vega, S. Revollar.  
TITLE: Economic Optimization Based on Nonlinear Parametric GPC for a Wastewater Treatment Plant.  
CONGRESS: IEEE Conference on Decision and Control (CDC 2014).  
LOCATION: Los Angeles. December, **2014**  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: A. Goldar, S. Revollar, R. Lamanna, P. Vega.  
TITLE: Neural-MPC for N-Removal in Activated-Sludge Plants.  
CONGRESS: European Control Conference (ECC), 2014.  
LOCATION: Strasbourg, France. June **2014**  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: Mario Francisco, Sigurd Skogestad, Pastora Vega  
TITLE: Model predictive control for the self operation of wastewater treatment plants  
CONGRESS: 12th International Symposium on Process Systems Engineering and 25th European Symposium on Computer Aided Process Engineering.  
LOCATION: Copenhagen, Denmark 31 May – 4 June **2015**  
TYPE OF PARTICIPATION: Talk

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AUTHORS: Mario Francisco, Sigurd Skogestad, Pastora Vega  
TITLE: Nonlinear offset free MPC for self-optimizing control in wastewater treatment plants  
CONGRESS: 19th International Conference on System Theory, Control and Computing  
LOCATION: Cheile Gradistei - Fundata Resort, Romania  
October 14 - 16, **2015**  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: S. Revolla, P. Vega, R. Vilanova  
TITLE: Economic optimization of wastewater treatment plants using Non Linear Model Predictive Control  
CONGRESS: 19th International Conference on System Theory, Control and Computing  
LOCATION: Cheile Gradistei - Fundata Resort, Romania  
October 14 - 16, **2015**  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: A. Goldar Dávila, S. Revolla, R. Lamanna, P. Vega  
TITLE: Neural NLMPC Schemes for the Control of the Activated Sludge Process  
CONGRESS: 11th IFAC Symposium on Dynamics and Control of Process Systems, including Biosystems.  
LOCATION: Trondheim, Norway, **2016**  
TYPE OF PARTICIPATION: Talk

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AUTHORS: S. Revollar, P. Vega, R. Villanova, I. Santín  
TITLE: Optimization of Economic and Environmental Objectives in a Non Linear Model Predictive Control Applied to a Wastewater Treatment Plant (I)  
CONGRESS: 20th International Conference on System Theory, Control and Computing  
LOCATION: Sinaia (Romania)  
October 13 - 15, **2016**  
TYPE OF PARTICIPATION: Talk

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AUTHORS: S. Revollar, P. Vega, R. Villanova, M. Francisco  
TITLE: Wastewater treatment plants operation optimization using economic dynamic real time optimization strategies  
CONGRESS: Symposium on Computer Aided Process Engineering – ESCAPE 27  
LOCATION: Barcelona, Spain October 1st - 5th, **2017**  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: S. Revollar, R. Villanova, M. Francisco, P. Vega,  
TITLE: A hierarchical plant-wide operation in wastewater treatment plants: overall efficiency index control and event-based reference management  
CONGRESS: 22th International Conference on System Theory, Control and Computing  
LOCATION: Sinaia (Romania)  
October 13 - 15, **2018**  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: Silvana Revollar, Ramón Vilanova, Mario Francisco, Pastora Vega  
TITLE: PI/PID DO Control in WWTP for Plantwide Nitrogen Removal Efficiency  
CONGRESS: 3rd IFAC Conf. on Advances in Proportional-Integral-Derivative Control.  
IFAC-PapersOnLine. Volume 51, Issue 4, 2018, Pages 450-455  
LOCATION: Ghent, Belgium, May 9-11, **2018**.  
TYPE OF PARTICIPATION: Interactive Poster

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AUTHORS: K. Morales R., H. Alvarez, M. Francisco, S. Revollar, P. Vega  
TITLE: Collaborative Control Strategy Applied to an Aerobic Reactor  
CONGRESS: Proceedings of the XVII Latin American Conference in Automatic Control  
LOCATION: Quito, 24 - 26, Octubre, **2018**  
TYPE OF PARTICIPATION: Talk

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AUTHORS: S. Revollar, H. Álvarez, R. Lamanna, P. Vega y A. Goldar  
TITLE: Economic Model Predictive Control of a Wastewater Treatment Plant using Neural and Fuzzy models  
CONGRESS: 28th European Symposium on Computer Aided Process Engineering, 2018  
TYPE OF PARTICIPATION: Talk

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AUTHORS: R. Casado-Vara, F. de la Prieta, S. Rodríguez, J. L. Calvo, S. Marquez, G. Kumar Venayagamoorthy, P. Vega, J. Prieto  
TITLE: Adaptive fault-tolerant tracking control algorithm for IoT systems: smart building case study  
CONGRESS: Conference: SOCO 2019: 14th International Conference on Soft Computing Models in Industrial and Environmental Applications Sevilla, Spain. May **2019**  
TYPE OF PARTICIPATION: Talk

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AUTHORS: K. Morales - Rodelo, P. Vega, M. Francisco, S. Revollar  
TITLE: Influence of fuzzy layer in distributed control structure applied to four coupled tanks  
CONGRESS: IEEE 4th Colombian Conference on Automatic Control (CCAC), **2019**.  
TYPE OF PARTICIPATION: Talk

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AUTHORS: A. Sánchez, M. Martín, P. Vega  
TITLE: Biomass Based Sustainable Ammonia Production  
CONGRESS: AIChE annual Meeting. 13<sup>th</sup> November, **2019**  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: Alvar Sanchez Fernnandez, Maria Jesus De La Fuente, Gregorio Sainz and Pastora Vega  
TITLE: Distributed Fault Detection for Large-scale Industrial Processes  
CONGRESS: 21st IFAC World Congress, 2020, (Contributed paper),**2020**  
TYPE OF PARTICIPATION: Talk

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AUTHORS: Silvana Revollar, Montse Meneses, Ramon Vilanova, Pastora Vega, Mario Francisco  
TITLE: Activated Sludge Process Control Strategy Based on the Dynamic Analysis of Environmental Costs  
CONGRESS: Conference: 2020 24th International Conference on System Theory, Control and Computing (ICSTCC). Romania. October **2020**  
TYPE OF PARTICIPATION: Talk Contributed paper

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AUTHORS: A. Sánchez, Q. Zang,, M. Martín and P. Vega  
TITLE: Integrating Energy Storage in Power Production: A Design and Scheduling Approach for the Implementation of Renewable Energies Production  
CONGRESS: AIChE Annual Meeting . Boston MA November (**2021**)  
TYPE OF PARTICIPATION: Talk Contributed paper

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AUTHORS: Sánchez, A., Blanco, E.C., Martín, M., Vega, P.  
TITLE: A Systematic Comparison of Renewable Liquid Fuels for Power Generation: Towards a 100% Renewable Energy System  
CONGRESS: 14th International Symposium on Process Systems Engineering (PSE 2021+) 19-23 Kyoto, June (**2022**)  
TYPE OF PARTICIPATION: Talk Contributed paper

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AUTHORS: Silvana Revollar, Montse Meneses, Mario Francico, Pastora Vega, Ramón Vilanova  
TITLE: Effect of climatological variations on Eco-efficiency of Wastewater Treatment Plants operation  
CONGRESS: 2023 IEEE 28th International Conference on Emerging Technologies and Factory Automation (ETFA). **2023**  
TYPE OF PARTICIPATION: Talk Contributed paper

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AUTHORS: O Aponte-Rengifo, R Vilanova, M Francisco, P Vega, S Revollar  
TITLE: Optimal set point generation based on deep reinforcement learning and transfer knowledge for Wastewater Treatment Plants  
CONGRESS: IEEE 28th International Conference on Emerging Technologies and Factory Automation (ETFA). **2023**  
TYPE OF PARTICIPATION: Talk Contributed paper

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AUTHORS: S Revollar, M Meneses, P Vega, M Francisco, R Vilanova  
TITLE: Eco-efficiency dependencies for Wastewater Treatment Plant operation  
CONGRESS: Proceedings of the 36th ECO. **2023**  
TYPE OF PARTICIPATION: Talk Contributed paper

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## COMMUNICATIONS IN NATIONAL CONGRESSES AND CONFERENCES

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AUTHORS: P. Vega, C. Prada, J. Gatón  
TITLE: Estudio de una torre de sulfitación  
CONGRESS: G.E.M. (R.S.E.F.) pp 288-293.  
LOCATION/YEAR: Sevilla, (Spain), 1984  
TYPE OF PARTICIPATION: Talk

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AUTHORS: C. Prada, P. Vega, L. Alonso  
TITLE: Diseño asistido por ordenador de sistemas de control  
CONGRESS: 6º Congreso Nacional de Automática e Informática A.E.I.A., pp 197-200  
LOCATION/YEAR: Madrid (Spain), 1985

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TYPE OF PARTICIPATION: Talk

AUTHORS: J. M. Zamarreño, P. Vega, C. Prada  
TITLE: Methodology of control systems with MMS and CACSD  
CONGRESS: MMS European Users Group Meeting, UNED  
LOCATION/YEAR: Madrid (Spain), 1993  
TYPE OF PARTICIPATION: Talk

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AUTHORS: F. Tadeo, P. Vega  
TITLE: Constrained Robust Control of an Industrial System  
CONGRESS: Seminario anual de Automática y Electrónica Industrial (SAAEI'96), pp 626-631. ISBN: 84-8499-564-X  
LOCATION/YEAR: Saragossa (Spain), 1996  
TYPE OF PARTICIPATION: Talk

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AUTHORS: G. Gutiérrez, P. Vega  
TITLE: Síntesis de procesos aplicado al proceso de fangos activados  
CONGRESS: XX Jornadas de Automática  
LOCATION/YEAR: Salamanca, 1999

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AUTHORS: P. Vega, M. Francisco  
TITLE: Fault tolerant modelling and prediction of a real waste water plant using recurrent neural networks  
CONGRESS: XX Jornadas de Automática  
LOCATION/YEAR: Salamanca, 1999  
TYPE OF PARTICIPATION: Poster

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AUTHORS: M. Francisco, P. Vega  
TITLE: Identificación mediante redes neuronales de un fermentador  
CONGRESS: XX Jornadas de Automática

LOCATION/YEAR: Salamanca, 1999  
TYPE OF PARTICIPATION: Poster

---

AUTHORS: P. Vallejo, P. Vega, A.M. Grande, D. Jiménez  
TITLE: Identificación mediante técnicas clásicas y neuronales: Desarrollo de una herramienta de software en tiempo real basada en MATLAB  
CONGRESS: XX Jornadas de Automática  
LOCATION/YEAR: Salamanca, 1999

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AUTHORS: M. Francisco, P. Vega, F.J. Blanco  
TITLE: Diseño y desarrollo de una aplicación informática para la gestión de laboratorios  
CONGRESS: Jornadas Interacción Persona Ordenador, pp.270-277.  
LOCATION/YEAR: Granada (Spain), June 2000  
TYPE OF PARTICIPATION: Talk

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AUTHORS: A. B. Gil , P. Vega , A. Cembellín, M. Francisco  
TITLE: Herramienta basada en una metodología para diseño integrado  
CONGRESS: XXII Jornadas de Automática  
LOCATION/YEAR: Barcelona (Spain) September 2001  
TYPE OF PARTICIPATION: Poster

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AUTHORS: T. Alvarez, F. Tadeo, S. González, P. Vega  
TITLE: Técnicas de Procesado de Imagen para la Clasificación de Diatomeas  
CONGRESS: XXII Jornadas de Automática.  
LOCATION/YEAR: Barcelona (Spain) September 2001  
TYPE OF PARTICIPATION: Talk

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AUTHORS: S. Revollar, R. Lammana and P. Vega  
TITLE: Diseño integrado de reactores basado en el uso de algoritmos genéticos  
CONGRESS: Taller Iberoamericano CYTED  
LOCATION/YEAR: Salamanca, 2002  
TYPE OF PARTICIPATION: Talk

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AUTHORS: M. Francisco, P. Vega, O. Pérez  
TITLE: Optimización para el Diseño Integrado de procesos en Lazo Cerrado  
CONGRESS: XXIII Jornadas de Automática.  
LOCATION/YEAR: Tenerife, September 2002  
TYPE OF PARTICIPATION: Poster

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AUTHORS: O. Pérez, W. Colmenares, P. Vega, M. Francisco  
TITLE: Ecuaciones lineales Matriciales para el diseño integrado de procesos.  
CONGRESS: XXIII Jornadas de Automática.  
LOCATION/YEAR: Tenerife, September 2002  
TYPE OF PARTICIPATION: Poster

---

AUTHORS: M. Francisco, P. Vega  
TITLE: Diseño Integrado en el marco del control predictivo basado en modelos  
CONGRESS: Jornadas sobre Automatización y Control en los Ingenios de Azúcar  
LOCATION/YEAR: Santa Cruz de la Sierra (Bolivia), 2007  
TYPE OF PARTICIPATION: Talk

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AUTHORS: M. Francisco, S. Revollar, P. Vega, R. Lammana  
TITLE: Síntesis y Diseño Integrado de procesos con métodos estocásticos  
CONGRESS: Jornadas sobre Automatización y Control en los Ingenios de Azúcar  
LOCATION/YEAR: Santa Cruz de la Sierra (Bolivia), 2007  
TYPE OF PARTICIPATION: Talk

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AUTHORS: B. Pérez-Lancho, E. Sanz, P. Vega  
TITLE: Modelado y simulación de sistemas HVAC  
CONGRESS: I Simposio en Modelado y Simulación de Sistemas Dinámicos. SIMOSI07 (CEA)  
LOCATION/YEAR: Zaragoza (Spain), 2007  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: M. Francisco, P. Vega  
TITLE: Técnicas de Diseño Integrado de procesos con controladores predictivos basado en modelos  
CONGRESS: XXVIII Jornadas de Automática.  
LOCATION/YEAR: Huelva (España), 2007  
TYPE OF PARTICIPATION: Poster

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AUTHORS: Elbajha, H., Vega, P.  
TITLE: Estimation and Optimal Control Design of a Biological Wastewater Treatment Process  
CONGRESS: Workshop Sistemas Inteligentes  
LOCATION/YEAR: Salamanca (Spain) , 2008  
TYPE OF PARTICIPATION: Talk

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AUTHORS: Francisco, M.; Álvarez, H.; Vega, P.; Revollar, S.  
TITLE: Sintonía Automática de Controladores Predictivos con Estabilidad Garantizada  
CONGRESS: XXX Jornadas de Automática.  
LOCATION/YEAR: Valladolid (Spain) , 2009  
TYPE OF PARTICIPATION: Poster

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AUTHORS: A. Gajate, R. Haber, P. Vega  
TITLE: Control Neuro borroso de Proceso de Taladrado de alto rendimiento  
CONGRESS: Workshop Sistemas Inteligentes  
LOCATION/YEAR: Salamanca (Spain) , 2009  
TYPE OF PARTICIPATION: Talk

---

AUTHORS: A. Gajate, P. Vega, R. Haber  
TITLE: Modelado y Control Neuroborroso de Procesos de Taladrado de Alto Rendimiento  
CONGRESS: XV Congreso Español sobre Tecnologías y Lógica Fuzzy - ESTYLF  
LOCATION/YEAR: Huelva, Spain 2010) ISBN: 978-84-9294-4026  
TYPE OF PARTICIPATION: Talk

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AUTHORS: J. M. Noguerol, S. Revollar, P. Vega, M. Francisco.  
TITLE: Cancelación de Offset en un proceso de fangos activados (Offset Cancellation in an Activated Sludge Process)  
CONGRESS: XXXII Jornadas de Automática  
LOCATION/YEAR: Sevilla, September 2011  
TYPE OF PARTICIPATION: Talk

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AUTHORS: P. Vega, J. M. Noguerol, S. Revollar, M. Francisco.  
TITLE: Operación óptima de un proceso de fangos activados mediante MPC no lineal



CONGRESS: XXXIII Jornadas de Automática  
LOCATION/YEAR: Vigo, September **2012**  
TYPE OF PARTICIPATION: Poster

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AUTHORS: D. Garcia-Alvarez, M. Francisco, M.J. Fuente, P. Vega,  
TITLE: Monitorización de controladores predictivos  
CONGRESS: XXXIII Jornadas de Automática  
LOCATION/YEAR: Vigo, September **2012**  
TYPE OF PARTICIPATION: Poster

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AUTHORS: P. Vallejo LLamas, P. Vega,  
TITLE: Control predictivo de sistemas complejos basado en modelos Fuzzy.  
Aplicación al control y supervisión de procesos de depuración de aguas  
residuales.  
CONGRESS: XV Simposio CEA de Ingeniería de Control  
LOCATION/YEAR: Salamanca, February **2017**  
TYPE OF PARTICIPATION: paper

---

AUTHORS: P. Vallejo LLamas, P. Vega,  
TITLE: Control predictivo fuzzy con aplicación a procesos de fangos activados  
CONGRESS: XXXVIII Jornadas de Automática.  
LOCATION/YEAR: Gijón, **2017**  
TYPE OF PARTICIPATION: Poster

---

AUTHORS: L. Fargallo, S. Revollar, M. Francisco, P. Vega, A. Cembellín  
TITLE: Control predictivo distribuido utilizando modelos difusos para la negociación entre agentes.  
CONGRESO: XXXVIII Jornadas de Automática.  
LOCATION/YEAR: Gijón, **2017**

---

AUTHORS: S. Revollar, P. Vega, M. Francisco, R. Lammana, R. García  
TITLE: Optimización dinámica de plantas depuradoras usando técnicas de control predictivo económico  
CONGRESO: XXXIX Jornadas de Automática.  
LOCATION/YEAR: Badajoz, **2018**  
TYPE OF PARTICIPATION: paper

---

AUTHORS: A. Cembellín, M. Francisco, P.Vega  
TITLE: Centralized and distributed model-based Predictive Control applied to a sewer network  
CONGRESO: XXXX Jornadas de Automática.  
LOCATION/YEAR: Ferrol, **2019**  
TYPE OF PARTICIPATION: paper

---

AUTHORS: O.E. Aponte, P. Vega, M. Francisco  
TITLE: Aprendizaje por refuerzo profundo para la negociación en control predictivo distribuido  
cooperativo de sistemas de complejos  
CONGRESO: Simposio CEA Grupos Temáticos de Modelado, Simulación, Optimización e Ingeniería de Control  
LOCATION: Burgos, Abril **2022**

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AUTHORS: O.E. Aponte, P. Vega, M. Francisco

TITLE: Aprendizaje por refuerzo profundo para la negociación en control predictivo distribuido cooperativo de sistemas multivariables  
CONGRESO XVII Simposio CEA de Control Inteligente  
LOCATION: León, Junio de **2022**

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## SUPERVISED PHD THESES

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TITLE: Técnicas robustas de detección y diagnóstico de fallos basadas en modelos  
AUTHOR: M<sup>a</sup> Jesús de la Fuente Aparicio  
BODY: University of Valladolid April, 1994  
GRADE: Passed Cum Laude  
SUPERVISOR: Pastora Vega.

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TITLE: Modelizacion Bond-Graph y Control Robusto de Estructuras Robóticas Flexibles Experimentales  
AUTHOR: Joseba Landaluze  
BODY: University of Valladolid July 1995  
GRADE: Passed Cum Laude  
SUPERVISOR: Pastora Vega.

---

TITLE: Técnicas de Control Robusto basadas en optimización l1 y L1  
AUTHOR: Fernando Tadeo  
BODY: University of Valladolid July 1996  
GRADE: Passed Cum Laude  
SUPERVISOR: Pastora Vega.

---

TITLE: Identificación y Control Predictivo basado en modelos mediante red neuronal en el espacio de estados  
AUTHOR: Jesús M Zamarreño Cosme  
BODY: University of Valladolid September, 1996  
GRADE: Passed Cum Laude  
SUPERVISOR: Pastora Vega.

---

TITLE: Diseño integrado y síntesis de procesos de lodos activados  
AUTHOR: Gloria Gutiérrez  
BODY: University of Valladolid February 2000  
GRADE: Passed Cum Laude  
SUPERVISOR: Pastora Vega.

---

TITLE: Modelado y control neuroborroso de sistemas complejos. Aplicación A procesos de mecanizado de alto rendimiento  
AUTHOR: Agustín Gajate  
DIRECTORS: Rodolfo Haber, Pastora Vega  
BODY: University of Salamanca June 2010  
GRADE: Passed Cum Laude  
SUPERVISOR: Pastora Vega.

---

TITLE: Algoritmos genéticos para el diseño integrado de procesos químicos  
AUTHOR: Silvana Revollar  
DIRECTORS: Rosalba Lammana, Pastora Vega  
BODY: University Simón Bolívar, 2011  
GRADE: Passed  
SUPERVISOR: Rosalba Lamanna, Pastora Vega.

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TITLE: Diseño simultáneo de procesos y control predictivo basados en normas y técnicas de control predictivo  
AUTHOR: Mario Francisco Sutil  
BODY: University of Salamanca, October 2011  
GRADE: Passed Cum Laude  
SUPERVISOR: Pastora Vega.

---

TITLE: Advanced control techniques based on positive invariance theory and economic predictive control. Application to a wastewater treatment plant  
AUTHOR: Hicham E. Bajha  
BODY: University of Salamanca, September 2017  
GRADE: Passed Cum Laude  
SUPERVISORS: Pastora Vega, Mario Francisco

---

TITLE: Control predictivo basado en modelos fuzzy de sistemas complejos. Aplicación al control y supervisión de procesos de depuración de aguas  
AUTHOR: Pedro-Martín Vallejo Llamas  
BODY: University of Salamanca, October 2021  
GRADE: Passed Cum Laude  
SUPERVISOR: Pastora Vega.

---

TITLE: On the decarbonization of Chemical and Energy Industries: Power-to-X Design Strategies.  
AUTHOR: Antonio Sánchez García  
BODY: University of Salamanca , December (2021). :  
GRADE: Passed Cum Laude  
SUPERVISORS: Mariano Martín, Pastora Vega.

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## Scientific societies

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- IFAC Member (International Federation of Automatic Control)
  - Member of the IFAC Working Group on Adaptive Control and Signal Processing
  - Member of CEA (Comité Español de Automática)
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## Research lines

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- AI techniques for process supervision, control and optimization
  - Model-based Predictive Control
  - Integrated process design
  - Advanced control of complex water purification systems and distribution networks
  - Optimization of process operation
  - Hierarchical Control
  - Collaborative control
  - Distributed Predictive Control based on multi-agent systems
  - Distributed Predictive Control based on game theory
-