Ramon Vilanova

List of Publications by Citations

250 papers	2,102 citations	25 h-index	35 g-index
320 ext. papers	2,735 ext. citations	2.4 avg, IF	5.51 L-index

#	Paper	IF	Citations
250	IMC based Robust PID design: Tuning guidelines and automatic tuning. *Journal of Process Control*, **2008**, 18, 61-70	3.9	85
249	Applying variable dissolved oxygen set point in a two level hierarchical control structure to a wastewater treatment process. *Journal of Process Control*, **2015**, 28, 40-55	3.9	68
248	PID control in terms of robustness/performance and servo/regulator trade-offs: A unifying approach to balanced autotuning. *Journal of Process Control*, **2013**, 23, 527-542	3.9	60
247	Improving the performance of a WWTP control system by model-based setpoint optimisation. *Environmental Modelling and Software*, **2011**, 26, 492-497	5.2	59
246	Model-reference robust tuning of 2DoF PI controllers for first- and second-order plus dead-time controlled processes. *Journal of Process Control*, **2012**, 22, 359-374	3.9	52
245	Application of multivariate virtual reference feedback tuning for wastewater treatment plant control. *Control Engineering Practice*, **2012**, 20, 499-510	3.9	47
244	Robust tuning of Two-Degree-of-Freedom (2-DoF) PI/PID based cascade control systems. *Journal of Process Control*, **2009**, 19, 1658-1670	3.9	43
243	Tuning rules for robust FOPID controllers based on multi-objective optimization with FOPDT models. *ISA Transactions*, **2017**, 66, 344-361	5.5	41
242	PID autotuning for weighted servo/regulation control operation. *Journal of Process Control*, **2010**, 20, 472-480	3.9	40
241	Enhanced sensitivity in the analysis of trace organochlorine compounds by negative-ion mass spectrometry with ammonia as reagent gas. *Journal of Chromatography A*, **1998**, 823, 73-9	4.5	39
240	Robust tuning of 2DoF five-parameter PID controllers for inverse response controlled processes. *Journal of Process Control*, **2013**, 23, 453-462	3.9	37
239	Life Cycle Assessment as an environmental evaluation tool for control strategies in wastewater treatment plants. *Journal of Cleaner Production*, **2015**, 107, 653-661	10.3	37
238	Robust Tuning and Performance Analysis of 2DoF PI Controllers for Integrating Controlled Processes. *Industrial & Engineering Chemistry Research*, **2012**, 51, 13182-13194	3.9	37
237	Advanced decision control system for effluent violations removal in wastewater treatment plants. *Control Engineering Practice*, **2016**, 49, 60-75	3.9	36
236	Inventory control for the supply chain: An adaptive control approach based on the identification of the lead-time. *Omega*, **2012**, 40, 314-327	7.2	35
235	control of fractional linear systems. *Automatica*, **2013**, 49, 2276-2280	5.7	32
234	optimization-based fractional-order PID controllers design. *International Journal of Robust and Nonlinear Control*, **2014**, 24, 3009-3026	3.6	32

233	On the evaluation of the global impact of control strategies applied to wastewater treatment plants. *Journal of Cleaner Production*, **2017**, 149, 396-405	10.3	31
232	Proportional-Integral-Derivative Tuning for Servo/Regulation Control Operation for Unstable and Integrating Processes. *Industrial & Engineering Chemistry Research*, **2011**, 50, 3327-3334	3.9	31
231	On the model matching approach to PID design: Analytical perspective for robust Servo/Regulator tradeoff tuning. *Journal of Process Control*, **2010**, 20, 596-608	3.9	31
230	ANN-Based Soft Sensor to Predict Effluent Violations in Wastewater Treatment Plants. *Sensors*, **2019**, 19,	3.8	30
229	IMC based feedforward controller framework for disturbance attenuation on uncertain systems. *ISA Transactions*, **2009**, 48, 439-48	5.5	30
228	Optimal Control of Wastewater Treatment Plants Using Economic-Oriented Model Predictive Dynamic Strategies. *Applied Sciences (Switzerland)*, **2017**, 7, 813	2.6	29
227	Fuzzy Control and Model Predictive Control Configurations for Effluent Violations Removal in Wastewater Treatment Plants. *Industrial & Engineering Chemistry Research*, **2015**, 54, 2763-2775	3.9	28
226	Inventory control of supply chains: Mitigating the bullwhip effect by centralized and decentralized Internal Model Control approaches. *European Journal of Operational Research*, **2013**, 224, 261-272	5.6	26
225	Control strategies for nitrous oxide emissions reduction on wastewater treatment plants operation. *Water Research*, **2017**, 125, 466-477	12.5	25
224	Simple Servo/Regulation Proportional□Integral□Derivative (PID) Tuning Rules for Arbitrary Ms-Based Robustness Achievement. *Industrial & Engineering Chemistry Research*, **2012**, 51, 2666-2674	3.9	25
223	Simple robust autotuning rules for 2-DoF PI controllers. *ISA Transactions*, **2012**, 51, 30-41	5.5	24
222	IMC-like analytical H□design with S/SP mixed sensitivity consideration: Utility in PID tuning guidance. *Journal of Process Control*, **2011**, 21, 976-985	3.9	24
221	Control PID robusto: Una visi□ panor□mica. *RIAI - Revista Iberoamericana De Automatica E Informatica Industrial*, **2011**, 8, 141-158	1.5	23
220	Model-Reference Robust Tuning of PID Controllers. *Advances in Industrial Control*, **2016**,	0.3	20
219	Non-Linear Sliding Mode Controller for Photovoltaic Panels with Maximum Power Point Tracking. *Processes*, **2020**, 8, 108	2.9	19
218	Robust PI/PID controllers for load disturbance based on direct synthesis. *ISA Transactions*, **2018**, 81, 177-196	5.6	19
217	Realisation of two-degrees-of-freedom compensators. *IET Control Theory and Applications*, **1997**, 144, 589-595		19
216	A refinement procedure for PID controller tuning. *Computers and Chemical Engineering*, **2002**, 26, 903-908	4	19

215	Control en Estaciones Depuradoras de Aguas Residuales: Estado actual y perspectivas. *RIAI - Revista Iberoamericana De Automatica E Informatica Industrial*, **2017**, 14, 329-345	1.5	18
214	Fuzzy logic for plant-wide control of biological wastewater treatment process including greenhouse gas emissions. *ISA Transactions*, **2018**, 77, 146-166	5.5	18
213	Maximum Sensitivity Based Robust Tuning for Two-Degree-of-Freedom Proportional□Integral Controllers. *Industrial & Engineering Chemistry Research*, **2010**, 49, 5415-5423	3.9	18
212	Control y Operaci□ de Estaciones Depuradoras de Aguas Residuales: Modelado y Simulaci□. *RIAI - Revista Iberoamericana De Automatica E Informatica Industrial*, **2017**, 14, 217-233	1.5	17
211	N-Removal on Wastewater Treatment Plants: A Process Control Approach. *Journal of Water Resource and Protection*, **2011**, 03, 1-11	0.7	17
210	Analytical robust tuning of PI controllers for first-order-plus-dead-time processes **2008**,		16
209	Optimal Nash tuning rules for robust PID controllers. *Journal of the Franklin Institute*, **2017**, 354, 3945-3970	4	15
208	Two-Degree-of-Freedom PI/PID tuning approach for smooth control on cascade control systems **2008**,		15
207	Wastewater Treatment Plant Operation: Simple Control Schemes with a Holistic Perspective. *Sustainability*, **2020**, 12, 768	3.6	14
206	LSTM-Based Wastewater Treatment Plants Operation Strategies for Effluent Quality Improvement. *IEEE Access*, **2019**, 7, 159773-159786	3.5	13
205	Improved PID controller tuning rules for performance degradation/robustness increase trade-off. *Electrical Engineering*, **2016**, 98, 233-243	1.5	12
204	Generalized Internal Model Control for Balancing Input/Output Disturbance Response. *Industrial & Engineering Chemistry Research*, **2011**, 50, 11170-11180	3.9	12
203	Performance/robustness tradeoff analysis of PI/PID servo and regulatory control systems **2010**,		12
202	PI and Fuzzy Control for P-removal in Wastewater Treatment Plant. *International Journal of Computers, Communications and Control*, **2015**, 10, 176	3.6	12
201	Simple Robust Tuning of 2DoF PID Controllers From A Performance/Robustness Trade-off Analysis. *Asian Journal of Control*, **2013**, 15, 1700-1713	1.7	11
200	Simple PID tuning rules with guaranteed Ms robustness achievement. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2011**, 44, 12042-12047		11
199	Simple Analytical min□max Model Matching Approach to Robust Proportional-Integrative-Derivative Tuning with Smooth Set-Point Response. *Industrial & Engineering Chemistry Research*, **2010**, 49, 690-700	3.9	11
198	Considerations on Set-Point Weight choice for 2-DoF PID Controllers. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2009**, 42, 721-726		11

197	Multiobjective tuning of PI controller using the NNC Method: Simplified problem definition and guidelines for decision making **2013**,		10
196	Removing violations of the effluent pollution in a wastewater treatment process. *Chemical Engineering Journal*, **2015**, 279, 207-219	14.7	10
195	Performance and Robustness Considerations for Tuning of Proportional Integral/Proportional Integral Derivative Controllers with Two Input Filters. *Industrial & Engineering Chemistry Research*, **2013**, 52, 18287-18302	3.9	10
194	**2010**,		10
193	Optimal Robust Tuning for 1DoF PI/PID Control Unifying FOPDT/SOPDT Models. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2012**, 45, 572-577		10
192	PIT Attuning settings for balanced Servo/Regulation operation **2007**,		10
191	Optimal Robust PID Control for First- and Second-Order Plus Dead-Time Processes. *Applied Sciences (Switzerland)*, **2019**, 9, 1934	2.6	9
190	Applying Control Actions for Water Line and Sludge Line To Increase Wastewater Treatment Plant Performance. *Industrial & Engineering Chemistry Research*, **2018**, 57, 5630-5638	3.9	9
189	Fragility analysis of PID controllers **2009**,		9
188	Multi-loop PI-based control strategies for the Activated Sludge Process **2009**,		9
187	Procedure for Cascade Control Systems Design: Choice of Suitable PID Tunings. *International Journal of Computers, Communications and Control*, **2014**, 3, 235	3.6	9
186	. *IEEE Access*, **2020**, 8, 212818-212836	3.5	9
185	Joint Environmental and Economical Analysis of Wastewater Treatment Plants Control Strategies: A Benchmark Scenario Analysis. *Sustainability*, **2016**, 8, 360	3.6	9
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182	Adaptive PID control system with assigned robust stability. *IEEJ Transactions on Electrical and Electronic Engineering*, **2018**, 13, 1169-1181	1	7
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180	Model predictive control and fuzzy control in a hierarchical structure for wastewater treatment plants **2014**,		7

179	A single-parameter robust tuning approach for Two-Degree-of-Freedom PID controllers **2009**,		7
178	Optimal reference processing in two-degrees-of-freedom control. *IET Control Theory and Applications*, **2007**, 1, 1322-1328	2.5	7
177	PID controller tuning rules for robust step response of first-order-plus-dead-time models **2006**,		7
176	Dissolved Oxygen Control in Biological Wastewater Treatments with Non-Ideal Sensors and Actuators. *Industrial & Engineering Chemistry Research*, **2019**, 58, 20639-20654	3.9	7
175	Improvement of the Control System Performance based on Fractional-Order PID Controllers and Models with Robustness Considerations. *IFAC-PapersOnLine*, **2018**, 51, 551-556	0.7	7
174	Robust proportional□integral□derivative design for processes with interval parametric uncertainty. *IET Control Theory and Applications*, **2017**, 11, 1016-1023	2.5	6
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168	A look into robustness/performance and servo/regulation issues in PI tuning. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2012**, 45, 181-186		6
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166	A Complete Solution for Developing Remote Labs. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2013**, 46, 96-101		6
165	Considerations on PID controller operation: Application to a continuous stirred tank reactor **2008**,		6
164	Human Intervention and Interface Design in Automation Systems. *International Journal of Computers, Communications and Control*, **2014**, 6, 166	3.6	6
163	Model reference based robust tuning of five-parameter 2DoF PID controllers for first-order plus dead-time models **2013**,		6
162	Nash tuning for optimal balance of the servo/regulation operation in robust PID control **2015**,		5

161	Robust discrete-time linear control of heart rate during treadmill exercise **2016**,		5
160	Discrete-Time First-Order Plus Dead-Time Model-Reference Trade-off PID Control Design. *Applied Sciences (Switzerland)*, **2019**, 9, 3220	2.6	5
159	Reliability based multiobjective optimization design procedure for PI controller tuning.. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2014**, 47, 10263-10268		5
158	Nash-based criteria for selection of Pareto Optimal PI controller **2013**,		5
157	Global Evaluation of Wastewater Treatment Plants Control Strategies Including CO2 Emissions. *IFAC-PapersOnLine*, **2017**, 50, 12956-12961	0.7	5
156	Comparison of multi-objective optimization methods for PI controllers tuning **2015**,		5
155	Model reference robust tuning of 2DoF PI controllers for integrating controlled processes **2012**,		5
154	Conversion formulae and performance capabilities of two-degree-of-freedom PID control algorithms **2012**,		5
153	Control de Dos-Grados-de-Libertad (2-GdL) aplicados al Benchmark de Sistemas para Controladores PID. *RIAI - Revista Iberoamericana De Automatica E Informatica Industrial*, **2009**, 6, 59-67	1.5	5
152	Revisiting IMC based design of PI/PID controllers for FOPTD Models **2006**,		5
151	A New Architecture for Robust Model Reference Control		5
150	Model-Reference Robust Tuning Design Methodology. *Advances in Industrial Control*, **2016**, 29-34	0.3	5
149	Two-Degree-of-Freedom PID Controllers Structures. *Advances in Industrial Control*, **2016**, 7-19	0.3	5
148	Multi-objective optimal tuning of two degrees of freedom PID controllers using the ENNC method **2016**,		5
147	Closed-loop Data-driven Trade-off PID Control Design. *IFAC-PapersOnLine*, **2018**, 51, 244-249	0.7	5
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145	Application of fuzzy control on wastewater treatment plant for P-removal **2015**,		4
144	Control and Decision Strategies in Wastewater Treatment Plants for Operation Improvement. *Intelligent Systems, Control and Automation: Science and Engineering*, **2017**,	0.6	4

143	Set-point weight selection for robustly tuned PI/PID regulators for over damped processes **2012**,		4
142	Fragility Evaluation of PI and PID Controllers Tuning Rules. *Advances in Industrial Control*, **2012**, 349-380	0.3	4
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140	Identification and adaptive control of delayed unstable systems **2010**,		4
139	Multi-Model Smith Predictor Based Control of Multivariable Systems with Uncertain Bounded External Delays. *IEEE Latin America Transactions*, **2009**, 7, 42-53	0.7	4
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137	Data-driven robust PID tuning toolbox. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2012**, 45, 134-139		4
136	Analytical H∞ design for a Smith-type inverse-response compensator **2009**,		4
135	NORT: a non-oscillatory robust tuning approach for 2-DoF PI controllers **2009**,		4
134	On estimation of unknown state variables in wastewater systems **2009**,		4
133	PID tuning for cascade control system design. *Canadian Conference on Electrical and Computer Engineering*, **2008**,		4
132	A 2DOF H∞ robust tracking design for a special type of observed state feedback controllers **2008**,		4
131	Control configuration for inverse response processes **2008**,		4
130	Reference processing in Two-Degree-Of-Freedom Control: Separation, Independence or Optimality **2006**,		4
129	Feedforward control for uncertain systems. internal model control approach **2007**,		4
128	Model reference control in two degree of freedom control systems: Adaptive min∞max approach. *IET Control Theory and Applications*, **1999**, 146, 273-281		4
127	Digital Control of a Waste Water Treatment Plant. *International Journal of Computers, Communications and Control*, **2014**, 6, 367	3.6	4
126	Data-driven Control of the Activated Sludge Process: IMC plus Feedforward Approach. *International Journal of Computers, Communications and Control*, **2016**, 11, 522	3.6	4

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124	Eco-Efficiency Assessment of Control Actions in Wastewater Treatment Plants. *Water (Switzerland)*, **2021**, 13, 612	3	4
123	Decentralized Model Predictive Control for N and P removal in wastewater treatment plants **2018**,		4
122	Fractional order model identification: Computational optimization **2015**,		3
121	Robust tuning of 2DoF PID controllers with filter for unstable first-order plus dead-time processes **2013**,		3
120	Process based control architecture for avoiding effluent pollutants quality limits violations in wastewater treatment plants **2015**,		3
119	Identification and Control of Chemical Processes Using the Anisochronic Modeling Paradigm. *IFAC-PapersOnLine*, **2015**, 48, 361-366	0.7	3
118	Economic optimization of Wastewater Treatment Plants using Non Linear Model Predictive Control **2015**,		3
117	Servo/regulation intermediate tuning for fractional order PID controllers **2015**,		3
116	Comparison of control strategies on combined biological phosphorus and nitrogen removal wastewater treatment process **2013**,		3
115	Internal Model Controller tuning using the Virtual Reference Approach with Robust Stability. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2011**, 44, 10237-10242		3
114	Evaluation of Methodology PBL Done by Students **2010**,		3
113	Multimodel-based techniques for the identification of the delay in MIMO systems **2010**,		3
112	Control of a pH neutralization plant using the VRFT framework **2010**,		3
111	Robust-performance tuning of 2DoF PI/PID controllers for first- and Second-Order-Plus-Dead-Time models **2011**,		3
110	Observer□controller Design for a Class of Stable/Unstable Inverse Response Processes. *Industrial & Engineering Chemistry Research*, **2009**, 48, 10986-10993	3.9	3
109	General Smith Predictors from an Observer-Controller perspective **2009**,		3
108	Smith Predictor based intelligent control of multiple-input-multiple-output systems with unknown delays **2008**,		3

107	Feedforward based two degrees of freedom formulation of the Virtual Reference Feedback Tuning approach **2009**,		3
106	Multiple-Delay Smith Predictor Based Control of LTI Systems with Bounded Uncertain Delay **2007**,		3
105	Intelligent Control of a Distributed Energy Generation System Based on Renewable Sources. *Sustainability*, **2016**, 8, 748	3.6	3
104	Robustness Improvement Using the Filtered Smith Predictor Based Fractional Integral-Fractional Derivative Controllers: Application to a Pressure Plant **2018**,		3
103	Chattering Free Adaptive Sliding Mode Controller for Photovoltaic Panels with Maximum Power Point Tracking. *Energies*, **2020**, 13, 5678	3.1	2
102	Control strategies for the sludge line in wastewater treatment plants **2016**,		2
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100	ANN-based Internal Model Control strategy applied in the WWTP industry **2019**,		2
99	An internal model control approach to event-based control **2017**,		2
98	Multi-objective optimization based tuning tool for industrial 2doF PID controllers * *This work was supported under grant 322-B4-218 by Vicerrectorí de Investigaciñ de la Universidad de Costa Rica and partially supported by the Spanish Ministry of Economy and Competitiveness program under grants DPI2013-47825-C3-1-R, DPI2016-77271-R. *IFAC-PapersOnLine*, **2017**, 50, 7511-7516	0.7	2
97	Control strategies for ammonia violations removal in BSM1 for dry, rain and storm weather conditions **2015**,		2
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95	Multistage procedure for PI controller design of the Boiler Benchmark problem **2015**,		2
94	A Usability Study Case of a Vision-Based Gesture Interface **2014**,		2
93	Optimality comparison of 2DoF PID implementations **2014**,		2
92	Performance analysis of model reference robust tuned 2DoF PI controllers for over damped processes **2012**,		2
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87	Frequency-dependent approach to model validation for iterative identification and control schemes. *IET Control Theory and Applications*, **2009**, 3, 98-109	2.5	2
86	Digital inverse model control using Generalised holds with extensions to the adaptive case. *International Journal of Control, Automation and Systems*, **2010**, 8, 707-719	2.9	2
85	Closed-loop interaction and performance considerations for decentralized control of two-by-two multivariable systems. *Canadian Conference on Electrical and Computer Engineering*, **2008**,		2
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80	Anaerobic Digestion Process Control Using a Data-Driven Internal Model Control Method. *Energies*, **2021**, 14, 6746	3.1	2
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78	Data Preprocessing for ANN-based Industrial Time-Series Forecasting with Imbalanced Data **2019**,		2
77	The Tuning of a Model-Free Controller for an Anaerobic Digestion Process using ADM1 as Virtual Plant. *IFAC-PapersOnLine*, **2019**, 52, 99-104	0.7	2
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66	Dissolved oxygen control in wastewater treatment plants considering sensor noise and actuator delays. **2019**,		1
65	Event-based internal model control approach for frequency deviation control in islanded micro grid **2017**,		1
64	Optimization of the wastewater treatment processes based on the relaxation method **2017**,		1
63	Optimal PID control in discrete time using a sensitivity function **2015**,		1
62	Lead-time identification for inventory control of the supply chain **2012**,		1
61	Interactive Software Tool for Robust Tuning of One- and Two-Degree-of-Freedom PI and PID Controllers. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2013**, 46, 13-18		1
60	Education on automatic control for professionals through the LRA-ULE remote laboratory. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2013**, 46, 90-95		1
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58	Guest Editorial Special Section on Industrial Control. *IEEE Transactions on Industrial Informatics*, **2011**, 7, 161-162	11.9	1
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54	Application of the virtual reference feedback tuning on wastewater treatment plants: A simulation study **2010**,		1

53	**2011**,		1
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47	Guidelines for controller structure in the Two Degrees of Freedom VRFT framework based on a Correlation Test **2009**,		1
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