Yann Le Gorrec

List of Publications by Year
in descending order

143 papers	1,887 citations	331670 21 h-index	302126 39 g-index
147 all docs	147 docs citations	147 times ranked	939 citing authors

#	Article	IF	Citations
1	Dirac structures and Boundary Control Systems associated with Skew-Symmetric Differential Operators. SIAM Journal on Control and Optimization, 2005, 44, 1864-1892.	2.1	219
2	Boucâ€"Wen Modeling and Feedforward Control of Multivariable Hysteresis in Piezoelectric Systems: Application to a 3-DoF Piezotube Scanner. IEEE Transactions on Control Systems Technology, 2015, 23, 1797-1806.	5.2	133
3	Exponential Stability of a Class of Boundary Control Systems. IEEE Transactions on Automatic Control, 2009, 54, 142-147.	5.7	86
4	Modeling and Optimal Force Control of a Nonlinear Electrostatic Microgripper. IEEE/ASME Transactions on Mechatronics, 2013, 18, 1130-1139.	5.8	81
5	The port Hamiltonian approach to modeling and control of Continuous Stirred Tank Reactors. Journal of Process Control, 2011, 21, 1449-1458.	3.3	79
6	Exponential Stabilization of Boundary Controlled Port-Hamiltonian Systems With Dynamic Feedback. IEEE Transactions on Automatic Control, 2014, 59, 2849-2855.	5.7	72
7	Lyapunov-based control of non isothermal continuous stirred tank reactors using irreversible thermodynamics. Journal of Process Control, 2012, 22, 412-422.	3.3	60
8	On the Synthesis of Boundary Control Laws for Distributed Port-Hamiltonian Systems. IEEE Transactions on Automatic Control, 2017, 62, 1700-1713.	5.7	57
9	Generic Dynamic Model for Simulation and Control of Reactive Extrusion. Industrial & Engineering Chemistry Research, 2004, 43, 7373-7382.	3.7	54
10	Well-posedness and regularity of hyperbolic boundary control systems on a one-dimensional spatial domain. ESAIM - Control, Optimisation and Calculus of Variations, 2010, 16, 1077-1093.	1.3	53
11	On the passivity based control of irreversible processes: A port-Hamiltonian approach. Automatica, 2016, 64, 105-111.	5.0	52
12	Finite differences on staggered grids preserving the port-Hamiltonian structure with application to an acoustic duct. Journal of Computational Physics, 2018, 373, 673-697.	3.8	35
13	Stabilization of infinite dimensional port-Hamiltonian systems by nonlinear dynamic boundary control. Automatica, 2017, 85, 61-69.	5.0	34
14	Modal Multimodel Control Design Approach Applied to Aircraft Autopilot Design. Journal of Guidance, Control, and Dynamics, 1998, 21, 77-83.	2.8	30
15	Structure-preserving infinite dimensional model reduction: Application to adsorption processes. Journal of Process Control, 2009, 19, 394-404.	3.3	29
16	Multivariable Compensation of Hysteresis, Creep, Badly Damped Vibration, and Cross Couplings in Multiaxes Piezoelectric Actuators. IEEE Transactions on Automation Science and Engineering, 2018, 15, 1639-1653.	5.2	29
17	Magnetic Shape Memory Alloys as smart materials for micro-positioning devices. Advanced Electromagnetics, 2012, 1, 75.	1.0	29
18	A robust self-scheduled missile autopilot: design by multi-model eigenstructure assignment. Control Engineering Practice, 2001, 9, 1067-1078.	5.5	28

#	Article	IF	Citations
19	A double linear driving force approximation for non-isothermal mass transfer modeling through bi-disperse adsorbents. Chemical Engineering Science, 2007, 62, 4040-4053.	3.8	25
20	Stability and Stabilization of a Class of Boundary Control Systems. , 0, , .		24
21	Thermodynamics based stability analysis and its use for nonlinear stabilization of the CSTR. Computers and Chemical Engineering, 2013, 58, 156-177.	3.8	24
22	Modelling of a MEMS-based microgripper: application to dexterous micromanipulation. , 2010, , .		21
23	Noise characterization in millimeter sized micromanipulation systems. Mechatronics, 2011, 21, 1087-1097.	3.3	21
24	Passivity-based nonlinear control of CSTR via asymptotic observers. Annual Reviews in Control, 2013, 37, 278-288.	7.9	20
25	Modeling and simulation of polymeric nanocapsule formation by emulsion diffusion method. AICHE Journal, 2009, 55, 2094-2105.	3.6	19
26	Infinite dimensional model of a double flexible-link manipulator: The Port-Hamiltonian approach. Applied Mathematical Modelling, 2020, 83, 59-75.	4.2	19
27	Gain Scheduling Control of a Nonlinear Electrostatic Microgripper: Design by an Eigenstructure Assignment With an Observer-Based Structure. IEEE Transactions on Control Systems Technology, 2015, 23, 1255-1267.	5.2	18
28	An output feedback LPV control strategy of a nonlinear electrostatic microgripper through a singular implicit modeling. Control Engineering Practice, 2014, 28, 97-111.	5.5	17
29	Multivariable Generalized Bouc-Wen modeling, identification and feedforward control and its application to multi-DoF piezoelectric actuators. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 10952-10958.	0.4	17
30	Reduced order LQG control design for port Hamiltonian systems. Automatica, 2018, 95, 86-92.	5.0	17
31	Modelling and control of an IPMC actuated flexible structure: A lumped port Hamiltonian approach. Control Engineering Practice, 2020, 101, 104498.	5.5	17
32	Boundary controlled irreversible port-Hamiltonian systems. Chemical Engineering Science, 2022, 248, 117107.	3.8	15
33	Reduced Order LQG Control Design for Infinite Dimensional Port Hamiltonian Systems. IEEE Transactions on Automatic Control, 2021, 66, 865-871.	5.7	14
34	A port-Hamiltonian formulation of a 2D boundary controlled acoustic system. IFAC-PapersOnLine, 2015, 48, 235-240.	0.9	13
35	Distributed port-Hamiltonian modelling for irreversible processes. Mathematical and Computer Modelling of Dynamical Systems, 2017, 23, 3-22.	2.2	13
36	Induction machine control using robust eigenstructure assignment. Control Engineering Practice, 2006, 14, 29-43.	5.5	12

#	Article	IF	Citations
37	Observer-based boundary control of distributed port-Hamiltonian systems. Automatica, 2020, 120, 109130.	5.0	12
38	Study of thermal and acoustic noise interferences in low stiffness atomic force microscope cantilevers and characterization of their dynamic properties. Review of Scientific Instruments, 2012, 83, 013704.	1.3	11
39	Dissipative pseudo-Hamiltonian realization of chemical systems using irreversible thermodynamics. Mathematical and Computer Modelling of Dynamical Systems, 2017, 23, 135-155.	2.2	11
40	A fractional Burgers equation arising in nonlinear acoustics: theory and numerics. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 406-411.	0.4	10
41	Characterization and modeling of the temperature effect on the piezoelectric tube actuator. IFAC-PapersOnLine, 2016, 49, 354-360.	0.9	10
42	Exponential Stabilization of Port-Hamiltonian Boundary Control Systems via Energy Shaping. IEEE Transactions on Automatic Control, 2020, 65, 4440-4447.	5.7	10
43	Force control in piezoelectric microactuators using self scheduled H technique. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2010, 43, 417-422.	0.4	9
44	About Dissipative and Pseudo Port-Hamiltonian Formulations of Irreversible Newtonian Compressible Flows. IFAC-PapersOnLine, 2020, 53, 11521-11526.	0.9	9
45	An observer based multimodel control design approach. International Journal of Systems Science, 1999, 30, 61-68.	5.5	8
46	Dynamic modeling of a batch crystallization process: A stochastic approach for agglomeration and attrition process. Chemical Engineering Science, 2007, 62, 6604-6614.	3.8	8
47	Gain scheduled control strategies for a nonlinear electrostatic microgripper: Design and real time implementation. , 2012, , .		8
48	Dynamic Modeling of the Reactive Twin-Screw Corotating Extrusion Process: Experimental Validation by Using Inlet Glass Fibers Injection Response and Application to Polymers Degassing. Industrial & Engineering Chemistry Research, 2012, 51, 11381-11388.	3.7	8
49	Improvement of Silicon Nanotweezers Sensitivity for Mechanical Characterization of Biomolecules Using Closed-Loop Control. IEEE/ASME Transactions on Mechatronics, 2015, 20, 1418-1427.	5.8	8
50	Energy-Based Modeling of Ionic Polymerâ€"Metal Composite Actuators Dedicated to the Control of Flexible Structures. IEEE/ASME Transactions on Mechatronics, 2021, 26, 3139-3150.	5.8	8
51	Linking hyperbolic and parabolic p.d.e.'s. , 2011, , .		7
52	Thermodynamics based stabilitization of CSTR networks. , 2012, , .		7
53	Modeling, identification and feedforward control of multivariable hysteresis by combining Bouc-Wen equations and the inverse multiplicative structure. , 2014, , .		7
54	Port Hamiltonian System in Descriptor Form for Balanced Reduction: Application to a Nanotweezer. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 11404-11409.	0.4	7

#	Article	IF	Citations
55	Power preserving model reduction of 2D vibro-acoustic system: A port Hamiltonian approach. IFAC-PapersOnLine, 2015, 48, 206-211.	0.9	7
56	Simultaneous suppression of badly damped vibrations and cross-couplings in a 2-DoF piezoelectric actuator by using feedforward standard H_∞ approach. , 2015, , .		7
57	Characterization, Modeling and H_∞ control of n-DOF Piezoelectric Actuators: application to A 3-DOF Precise Positioner. Asian Journal of Control, 2016, 18, 1239-1258.	3.0	7
58	Building systems from simple hyperbolic ones. Systems and Control Letters, 2016, 91, 1-6.	2.3	7
59	Structure preserving spatial discretization of 2D hyperbolic systems using staggered grids finite difference. , 2017, , .		7
60	Flexible Transmission System Controlled by Modal Dynamic Feedback. European Journal of Control, 1997, 3, 227-234.	2.6	6
61	Controller parametric robustification using observer-based formulation and multimodel design technique. IEEE Transactions on Automatic Control, 2005, 50, 526-531.	5.7	6
62	Passivity Based Control of Irreversible Port Hamiltonian Systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 84-89.	0.4	6
63	Energy shaping of boundary controlled linear port Hamiltonian systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 1580-1585.	0.4	6
64	Asymptotic stability of an Euler-Bernoulli beam coupled to non-linear spring-damper systems * *This work was supported by French sponsored projects HAMEC-MOPSYS and Labex ACTION under reference codes ANR-11-BS03-0002 and ANR-11-LABX-0001-01 respectively.. IFAC-PapersOnLine, 2017, 50, 5580-5585.	0.9	6
65	Boundary Energy-Shaping Control of an Ideal Compressible Isentropic Fluid in 1-D. IFAC-PapersOnLine, 2017, 50, 5598-5603.	0.9	6
66	A port-Hamiltonian Fluid-Structure Interaction Model for the Vocal folds � 792This work was supported by CONICYT-PFCHA/2017-21170472, and AC3E CONICYT-Basal Project FB-0008.. IFAC-PapersOnLine, 2018, 51, 62-67.	0.9	6
67	A Lyapunov Approach to Robust Regulation of Distributed Port–Hamiltonian Systems. IEEE Transactions on Automatic Control, 2021, 66, 6041-6048.	5.7	6
68	Dissipative boundary control systems with application to distributed parameters reactors. , 2006, , .		6
69	Port based modelling of a multiscale adsorption column. Mathematical and Computer Modelling of Dynamical Systems, 2008, 14, 195-211.	2.2	5
70	Coupling between hyperbolic and diffusive systems: A port-Hamiltonian formulation. European Journal of Control, 2013, 19, 505-512.	2.6	5
71	Exponential stability of a class of PDE's with dynamic boundary control. , 2013, , .		5
72	Boundary port Hamiltonian control of a class of nanotweezers. , 2013, , .		5

#	Article	IF	Citations
73	Asymptotic Stabilisation of Distributed Port-Hamiltonian Systems by Boundary Energy-Shaping Control. IFAC-PapersOnLine, 2015, 48, 488-493.	0.9	5
74	An irreversible port-Hamiltonian formulation of distributed diffusion processes. IFAC-PapersOnLine, 2016, 49, 46-51.	0.9	5
75	Structure Preserving Finite Differences in Polar Coordinates for Heat and Wave Equations.. IFAC-PapersOnLine, 2018, 51, 571-576.	0.9	5
76	A thermodynamic approach to the stabilization of tubular reactors. Journal of Process Control, 2021, 108, 98-111.	3.3	5
77	Exponential stability of boundary controlled port Hamiltonian systems with dynamic feedback. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 115-120.	0.4	4
78	Lyapunov based nonlinear control of tubular chemical reactorsâˆ—âˆ—This contribution has been done within the context of the French National Research Agency sponsored projet HAMECMOP-SYS (ANR-11-) Tj ETQq0 0.0 rgBT /Overlock 10	0.9	4
79	Influence of mechanical noise inside a scanning electron microscope. Review of Scientific Instruments, 2015, 86, 045105.	1.3	4
80	Reduced order controller design for Timoshenko beam: A port Hamiltonian approach * *The authors gratefully acknowledge the support of the ANR-DFG (French-German) project INFIDHEM with Reference Code ANR-16-CE92-0028. The first author acknowledges the support of the ENSMM BQR project with Reference Code BQR ENSMM NÂ°06.2017. IFAC-PapersOnLine, 2017, 50, 7121-7126.	0.9	4
81	Passive observers for distributed port-Hamiltonian systems. IFAC-PapersOnLine, 2020, 53, 7587-7592.	0.9	4
82	SystÃ¨mes hamiltoniens Ã ports de dimension infinie. RÃ©duction et propriÃ©tÃ©s spectrales. Journal Europeen Des Systemes Automatises, 2011, 45, 645-664.	0.4	4
83	On port-Hamiltonian formulations of 3-dimensional compressible Newtonian fluids. Physics of Fluids, 2021, 33, .	4.0	4
84	An irreversible port-Hamiltonian model for a class of piezoelectric actuators. IFAC-PapersOnLine, 2021, 54, 436-441.	0.9	4
85	Basis for bond-graph modeling in chemical engineering. Computer Aided Chemical Engineering, 2007, 24, 69-74.	0.5	3
86	From Canonical Hamiltonian to Port-Hamiltonian Modeling: Application to Magnetic Shape Memory Alloys Actuators. , 2011, , .		3
87	Robust Microscale Grasping Using a Self Scheduled Dynamic Controller. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 7492-7498.	0.4	3
88	Interconnection and Damping Assignment - Passivity Based Control of Irreversible Port Hamiltonian Systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 9111-9116.	0.4	3
89	Control of non-isothermal chemical reaction networks using irreversible port-Hamiltonian systems. IFAC-PapersOnLine, 2017, 50, 576-581.	0.9	3
90	On the use of structural invariants for the distributed control of infinite dimensional port-Hamitonian systems. , 2017, , .		3

#	ARTICLE	IF	CITATIONS
91	Modelling and control of a class of lumped beam with distributed control. IFAC-PapersOnLine, 2018, 51, 217-222.	0.9	3
92	Observer-Based State Feedback Controller for a class of Distributed Parameter Systems. IFAC-PapersOnLine, 2019, 52, 114-119.	0.9	3
93	A Hamiltonian perspective to the stabilization of systems of two conservation laws. Networks and Heterogeneous Media, 2009, 4, 249-266.	1.1	3
94	Observer Based Nonlinear Control of a Rotating Flexible Beam. IFAC-PapersOnLine, 2020, 53, 7479-7484.	0.9	3
95	Controller reduction with closed loop H infinity performance constraints: A QFT perspective. International Journal of Control, 1999, 72, 1249-1259.	1.9	2
96	Exponential stabilization of a class of flexible microgrippers using dynamic boundary port Hamiltonian control. , 2013, , .		2
97	Robust microscale grasping through a multimodel design: synthesis and real time implementation. Control Engineering Practice, 2015, 39, 12-22.	5.5	2
98	On backstepping boundary control for a class of linear port-Hamiltonian systems. , 2017, , .		2
99	Irreversible port-Hamiltonian formulation of non-isothermal electromechanical systems with hysteresis. IFAC-PapersOnLine, 2018, 51, 19-24.	0.9	2
100	Optimal actuator location for electro-active polymer actuated endoscope âŽ âŽThe authors gratefully acknowledge the support of the ANR-DFG (French-German) project INFIDHEM with Reference Code ANR-16-CE92-0028 and the support of the ENSMM BQR project with Reference Code BQR ENSMM NÂ°06.2017. IFAC-PapersOnLine, 2018, 51, 199-204.	0.9	2
101	Modeling and control of an IPMC actuated flexible beam under the port-Hamiltonian framework. IFAC-PapersOnLine, 2019, 52, 108-113.	0.9	2
102	Irreversible Port-Hamiltonian Formulation of some Non-isothermal Electrochemical Processes. IFAC-PapersOnLine, 2019, 52, 19-24.	0.9	2
103	Structure-preserving discretization and control of a two-dimensional vibro-acoustic tube. IMA Journal of Mathematical Control and Information, 2021, 38, 417-439.	1.7	2
104	Energy-Based In-Domain Control and Observer Design for Infinite-Dimensional Port-Hamiltonian Systems. IFAC-PapersOnLine, 2021, 54, 468-475.	0.9	2
105	Energy shaping plus Damping injection of Irreversible Port Hamiltonian Systems. IFAC-PapersOnLine, 2020, 53, 11539-11544.	0.9	2
106	Stabilisation of a Rotating Beam Clamped on a Moving Inertia with Strong Dissipation Feedback. , 2020, , .		2
107	Energy-Based Modeling and Hamiltonian LQG Control of a Flexible Beam Actuated by IPMC Actuators. IEEE Access, 2022, 10, 12153-12163.	4.2	2
108	Modeling and Position Control of the HASEL Actuator via Port-Hamiltonian Approach. IEEE Robotics and Automation Letters, 2022, 7, 7100-7107.	5.1	2

#	Article	IF	Citations
109	Effects of environmental noise on the accuracy of millimeter sized grippers in cantilever configuration and active stabilisation. , 2011, , .		1
110	Closed-loop control of silicon nanotweezers for improvement of sensitivity to mechanical stiffness measurement and bio-sensing on DNA molecules. , 2013, , .		1
111	Structure preserving reduction of port hamiltonian system using a modified LQG method. , 2014, , .		1
112	Boundary L<inf>2</inf>-gain stabilisation of a distributed Port-Hamiltonian system with rectangular domain. , 2015, , .		1
113	Relating systems properties of the wave and the Schrödinger equation. Evolution Equations and Control Theory, 2015, 4, 233-240.	1.3	1
114	Parabolic matching of hyperbolic system using Control by Interconnection. IFAC-PapersOnLine, 2017, 50, 5574-5579.	0.9	1
115	Boundary control of distributed port-hamiltonian systems via generalised canonical transformations. , 2017, , .		1
116	Technical Committee on Distributed Parameter Systems [Technical Activities]. IEEE Control Systems, 2018, 38, 12-13.	0.8	1
117	A Simple Robust Controller for Port–Hamiltonian Systems. IFAC-PapersOnLine, 2018, 51, 92-96.	0.9	1
118	A Scalable port-Hamiltonian Model for Incompressible Fluids in Irregular Geometries. IFAC-PapersOnLine, 2019, 52, 102-107.	0.9	1
119	Finite-dimensional observers for port-Hamiltonian systems of conservation laws. , 2019, , .		1
120	Modelling, Control and Stability Analysis of Flexible Rotating Beam's Impacts During Contact Scenario. , 2021, , .		1
121	Dissipative port-Hamiltonian Formulation of Maxwell Viscoelastic Fluids. IFAC-PapersOnLine, 2021, 54, 430-435.	0.9	1
122	Energy-based Control of a Wave Equation with Boundary Anti-damping. IFAC-PapersOnLine, 2020, 53, 7740-7745.	0.9	1
123	On Linear Quadratic Regulation of Linear Port-Hamiltonian Systems. IFAC-PapersOnLine, 2020, 53, 6857-6862.	0.9	1
124	Irreversible port-Hamiltonian modelling of 1D compressible fluids. IFAC-PapersOnLine, 2021, 54, 64-69.	0.9	1
125	Exponential stabilization of a clamped Timoshenko beam with actuation on a tip mass. , 2021, , .		1
126	Stabilization of a class of mixed ODE–PDE port-Hamiltonian systems with strong dissipation feedback. Automatica, 2022, 142, 110284.	5.0	1

#	Article	IF	Citations
127	An Eigenstructure Based Methodology for Controller Reduction. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2003, 36, 235-240.	0.4	0
128	Energy-preserving method for spatial discretization: application to an adsorption column. Computer Aided Chemical Engineering, 2008, , 727-732.	0.5	0
129	Port-Based Modeling in Different Domains. , 2009, , 131-209.		0
130	Generalized availability function for the control of chemical reactors. , 2014, , .		0
131	Matrix-valued Impedances with Fractional Derivatives and Integrals in Boundary Feedback Control: a port-Hamiltonian approach. IFAC-PapersOnLine, 2015, 48, 182-187.	0.9	0
132	Extended high-gain observer for robust position control of a micro-gripper in air and vacuum. , 2015, , .		0
133	An energy based approach for the control of a micro-robotic contact scenario**This work was supported by French sponsored projects HAMEC-MOPSYS and Labex ACTION under reference codes ANR-11-BS03-0002 and ANR-11-LABX-0001-01 respectively.. IFAC-PapersOnLine, 2016, 49, 945-950.	0.9	0
134	A temperature-dependent control technique for a highly sensitive piezoelectric actuator. , 2016, , .		0
135	Technical Committee on Distributed Parameter Systems [Technical Activities]. IEEE Control Systems, 2016, 36, 15-17.	0.8	0
136	Asymptotic stability for a class of boundary control systems with non-linear damping**This work was supported by French sponsored projects HAMEC-MOPSYS and Labex ACTION under reference codes ANR-11-BS03-0002 and ANR-11-LABX-0001-01 respectively.. IFAC-PapersOnLine, 2016, 49, 304-308.	0.9	0
137	Boundary energy-shaping control of an isothermal tubular reactor. Mathematical and Computer Modelling of Dynamical Systems, 2017, 23, 77-88.	2.2	0
138	Constrained port Hamiltonian formulation of multiscale distributed parameter IPMC systems. IFAC-PapersOnLine, 2019, 52, 495-500.	0.9	0
139	Reduced order optimal control of infinite dimensional port Hamiltonian systems. , 2019, , .		0
140	LQG control for flexible micro-grippers with additional integral action. , 2019, , .		0
141	Une étude sur les spécificités de la commande dans le micromonde. Journal Europeen Des Systemes Automatises, 2010, 44, 577-601.	0.4	0
142	Kalman Filtering Applied to Weak Force Measurement and Control in the Microworld. , 2011, , 71-91.		0
143	Stabilization of Unstable Distributed Port-Hamiltonian Systems in Scattering Form. , 2022, 6, 3116-3121.		0