Micky Rakotondrabe

List of Publications by Citations

100 papers	1,911 citations	22 h-index	40 g-index
108 ext. papers	2,343 ext. citations	3.3 avg, IF	5.68 L-index

#	Paper	IF	Citations
100	Bouc–Wen Modeling and Inverse Multiplicative Structure to Compensate Hysteresis Nonlinearity in Piezoelectric Actuators. *IEEE Transactions on Automation Science and Engineering*, **2011**, 8, 428-431	4.9	255
99	Complete Open Loop Control of Hysteretic, Creeped, and Oscillating Piezoelectric Cantilevers. *IEEE Transactions on Automation Science and Engineering*, **2010**, 7, 440-450	4.9	135
98	Bouc–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	4.8	104
97	Development and Force/Position Control of a New Hybrid Thermo-Piezoelectric MicroGripper Dedicated to Micromanipulation Tasks. *IEEE Transactions on Automation Science and Engineering*, **2011**, 8, 824-834	4.9	99
96	Quadrilateral Modelling and Robust Control of a Nonlinear Piezoelectric Cantilever. *IEEE Transactions on Control Systems Technology*, **2009**, 17, 528-539	4.8	77
95	Simultaneous Displacement/Force Self-Sensing in Piezoelectric Actuators and Applications to Robust Control. *IEEE/ASME Transactions on Mechatronics*, **2015**, 20, 519-531	5.5	76
94	Development, Modeling, and Control of a Micro-/Nanopositioning 2-DOF Stick–Slip Device. *IEEE/ASME Transactions on Mechatronics*, **2009**, 14, 733-745	5.5	70
93	Further Results on Hysteresis Compensation of Smart Micropositioning Systems With the Inverse Prandtl–Ishlinskii Compensator. *IEEE Transactions on Control Systems Technology*, **2016**, 24, 428-439	4.8	61
92	Robotic microassembly and micromanipulation at FEMTO-ST. *Journal of Micro-Bio Robotics*, **2013**, 8, 91-106	1.4	53
91	Robust Feedforward-Feedback Control of a Nonlinear and Oscillating 2-DOF Piezocantilever. *IEEE Transactions on Automation Science and Engineering*, **2011**, 8, 506-519	4.9	50
90	Quasistatic displacement self-sensing method for cantilevered piezoelectric actuators. *Review of Scientific Instruments*, **2009**, 80, 065102	1.7	45
89	Multivariable classical Prandtl–Ishlinskii hysteresis modeling and compensation and sensorless control of a nonlinear 2-dof piezoactuator. *Nonlinear Dynamics*, **2017**, 89, 481-499	5	42
88	Scanning Micromirror Platform Based on MEMS Technology for Medical Application. *Micromachines* , **2016**, 7,	3.3	39
87	Internal model-based feedback control design for inversion-free feedforward rate-dependent hysteresis compensation of piezoelectric cantilever actuator. *Control Engineering Practice*, **2018**, 72, 29-41	3.9	34
86	Interval Modeling and Robust Control of Piezoelectric Microactuators. *IEEE Transactions on Control Systems Technology*, **2012**, 20, 486-494	4.8	32
85	Classical Prandtl-Ishlinskii modeling and inverse multiplicative structure to compensate hysteresis in piezoactuators **2012**,		29
84	Backstepping-based robust-adaptive control of a nonlinear 2-DOF piezoactuator. *Control Engineering Practice*, **2015**, 41, 57-71	3.9	27

83	Guest Editorial Focused Section on Hysteresis in Smart Mechatronic Systems: Modeling, Identification, and Control. *IEEE/ASME Transactions on Mechatronics*, **2016**, 21, 1-3	5.5	25
82	Characterizing piezoscanner hysteresis and creep using optical levers and a reference nanopositioning stage. *Review of Scientific Instruments*, **2009**, 80, 046102	1.7	25
81	Voltage/Frequency Proportional Control of Stick-Slip Micropositioning Systems. *IEEE Transactions on Control Systems Technology*, **2008**, 16, 1316-1322	4.8	25
80	Modelling and Robust Position/Force Control of a Piezoelectric Microgripper **2007**,		25
79	Development and Dynamic Modeling of a New Hybrid Thermopiezoelectric Microactuator. *IEEE Transactions on Robotics*, **2010**, 26, 1077-1085	6.5	22
78	A Robust Resonant Controller for High-Speed Scanning of Nanopositioners: Design and Implementation. *IEEE Transactions on Control Systems Technology*, **2020**, 28, 1116-1123	4.8	21
77	Control of a Novel 2-DoF MEMS Nanopositioner With Electrothermal Actuation and Sensing. *IEEE Transactions on Control Systems Technology*, **2014**, 22, 1486-1497	4.8	20
76	Current integration force and displacement self-sensing method for cantilevered piezoelectric actuators. *Review of Scientific Instruments*, **2009**, 80, 126103	1.7	20
75	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	4.9	19
74	Optimal Design of Piezoelectric Cantilevered Actuators With Guaranteed Performances by Using Interval Techniques. *IEEE/ASME Transactions on Mechatronics*, **2014**, 19, 1660-1668	5.5	19
73	Performances inclusion for stable interval systems **2011**,		19
72	Hysteresis and vibration compensation in a nonlinear unimorph piezocantilever **2008**,		19
71	Quasi-Static Displacement Self-Sensing Measurement for a 2-DOF Piezoelectric Cantilevered Actuator. *IEEE Transactions on Industrial Electronics*, **2017**, 64, 6330-6337	8.9	18
70	Modeling and compensation of multivariable creep in multi-DOF piezoelectric actuators **2012**,		18
69	Combining self-sensing with an unkown-input-observer to estimate the displacement, the force and the state in piezoelectric cantilevered actuators **2013**,		16
68	On hysteresis modeling of a piezoelectric precise positioning system under variable temperature. *Mechanical Systems and Signal Processing*, **2020**, 145, 106880	7.8	15
67	Interval force/position modeling and control of a microgripper composed of two collaborative piezoelectric actuators and its automation. *International Journal of Control, Automation and Systems* , **2014**, 12, 358-371	2.9	15
66	An Overview of Piezoelectric Self-Sensing Actuation for Nanopositioning Applications: Electrical Circuits, Displacement, and Force Estimation. *IEEE Transactions on Instrumentation and Measurement*, **2020**, 69, 2-14	5.2	15

65	Combining H ∞ approach and interval tools to design a low order and robust controller for systems with parametric uncertainties: application to piezoelectric actuators. *International Journal of Control*, **2012**, 85, 251-259	1.5	14
64	Experimental comparison of rate-dependent hysteresis models in characterizing and compensating hysteresis of piezoelectric tube actuators. *Physica B: Condensed Matter*, **2016**, 486, 64-68	2.8	13
63	Feedforward and IMC-feedback control of a nonlinear 2-DOF piezoactuator dedicated to automated micropositioning tasks **2011**,		13
62	Optimal design of a unimorph piezoelectric cantilever devoted to energy harvesting to supply animal tracking devices. *IFAC-PapersOnLine*, **2017**, 50, 14600-14605	0.7	11
61	Topology optimization of 2DOF piezoelectric plate energy harvester under external in-plane force. *Journal of Micro-Bio Robotics*, **2020**, 16, 65-77	1.4	11
60	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		11
59	Plurilinear Modeling and discrete ∃Synthesis Control of a Hysteretic and Creeped Unimorph Piezoelectric Cantilever **2006**,		11
58	Nonlinear black-box system identification through coevolutionary algorithms and radial basis function artificial neural networks. *Applied Soft Computing Journal*, **2020**, 87, 105990	7.5	11
57	Nonlinear Black-box System Identification through Neural Networks of a Hysteretic Piezoelectric Robotic Micromanipulator. *IFAC-PapersOnLine*, **2015**, 48, 409-414	0.7	10
56	Static/dynamic trade-off performance of PZT thick film micro-actuators. *Journal of Micromechanics and Microengineering*, **2015**, 25, 075017	2	9
55	Self-Sensing Method Considering the Dynamic Impedance of Piezoelectric Based Actuators for Ultralow Frequency. *IEEE Robotics and Automation Letters*, **2018**, 3, 1049-1055	4.2	9
54	Robust control for a class of interval model: Application to the force control of piezoelectric cantilevers **2010**,		9
53	Force estimation in a piezoelectric cantilever using the inverse-dynamics-based UIO technique **2009** ,		9
52	Observer and Robust $H_{infty }$ Control of a 2-DOF Piezoelectric Actuator Equipped With Self-Measurement. *IEEE Robotics and Automation Letters*, **2018**, 3, 1080-1087	4.2	8
51	Design of a Fixed-Order RST Controller for Interval Systems: Application to the Control of Piezoelectric Actuators. *Asian Journal of Control*, **2013**, 15, 142-154	1.7	8
50	Multi Directional Piezoelectric Plate Energy Harvesters Designed By Topology Optimization Algorithm. *IEEE Robotics and Automation Letters*, **2020**, 5, 462-469	4.2	8
49	Characterization and modeling of the temperature effect on the piezoelectric tube actuator. *IFAC-PapersOnLine*, **2016**, 49, 354-360	0.7	8
48	Development and characterization of thinned PZT bulk technology based actuators devoted to a 6-DOF micropositioning platform. *Microelectronic Engineering*, **2018**, 197, 53-60	2.5	8

47	Analytical Modelling and Optimization of a Piezoelectric Cantilever Energy Harvester with In-Span Attachment. *Micromachines*, **2020**, 11,	3.3	7
46	Simultaneous suppression of badly damped vibrations and cross-couplings in a 2-DoF piezoelectric actuator by using feedforward standard H∞pproach **2015**,		6
45	Experimental model inverse-based hysteresis compensation on a piezoelectric actuator **2015**,		6
44	Enhancement of micro-positioning accuracy of a Piezoelectric positioner by suppressing the rate-dependant hysteresis nonlinearities **2014**,		6
43	Robust Interval Luenberger Observer-Based State Feedback Control: Application to a Multi-DOF Micropositioner. *IEEE Transactions on Control Systems Technology*, **2019**, 27, 2672-2679	4.8	6
42	2D topology optimization MATLAB codes for piezoelectric actuators and energy harvesters. *Structural and Multidisciplinary Optimization*, **2021**, 63, 983-1014	3.6	6
41	Rotorcraft with a 3DOF Rigid Manipulator: Quaternion-based Modeling and Real-time Control Tolerant to Multi-body Couplings. *International Journal of Automation and Computing*, **2018**, 15, 547-558	3.5	6
40	Displacement Amplifier Mechanism for Piezoelectric Actuators Design Using SIMP Topology Optimization Approach **2018**,		6
39	Output Feedback Control for a Nonlinear Optical Interferometry System **2021**, 5, 1880-1885		6
38	Robust micro-positionnig control of a 2DOF piezocantilever based on an extended-state LKF. *Mechatronics*, **2019**, 58, 82-92	3	5
37	Multi-mode vibration suppression in 2-DOF piezoelectric systems using zero placement input shaping technique **2015**,		5
36	Getting Started with PEAs-Based Flapping-Wing Mechanisms for Micro Aerial Systems. *Actuators*, **2016**, 5, 14	2.4	5
35	Multi-Mode Vibration Suppression in MIMO Systems by Extending the Zero Placement Input Shaping Technique: Applications to a 3-DOF Piezoelectric Tube Actuator. *Actuators*, **2016**, 5, 13	2.4	5
34	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	1.7	5
33	Robust Nonlinear Control for a Piezoelectric Actuator in a Robotic Hand Using Only Position Measurements **2022**, 6, 872-877		5
32	Model Predictive Control Based on the Generalized Bouc-Wen Model for Piezoelectric Actuators in Robotic Hand With Only Position Measurements **2022**, 6, 2186-2191		4
31	RALP and Beyond: Micro-Technologies and Systems for Robot-Assisted Endoscopic Laser Microsurgery. *Frontiers in Robotics and AI*, **2021**, 8, 664655	2.8	4
30	Design of Piezoelectric Actuators with Guaranteed Performances Using the Performances Inclusion Theorem **2013**, 41-59		4

29	Optimal Design of Piezoelectric Cantilevered Actuators for Charge-Based Self-Sensing Applications. *Sensors*, **2019**, 19,	3.8	3
28	Performances analysis of piezoelectric cantilever based energy harvester devoted to mesoscale intra-body robot **2015**,		3
27	Robust and Optimal Output-Feedback Control for Interval State-Space Model: Application to a Two-Degrees-of-Freedom Piezoelectric Tube Actuator. *Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*, **2019**, 141,	1.6	3
26	PID-structured controller design for interval systems: Application to piezoelectric microactuators **2011**,		3
25	Precision motion control of a piezoelectric cantilever positioning system with rate-dependent hysteresis nonlinearities. *Nonlinear Dynamics*, **2021**, 104, 3385	5	3
24	Presentation and characterization of novel thick-film PZT microactuators. *Physica B: Condensed Matter*, **2016**, 486, 17-20	2.8	3
23	Dynamic behavior of magnetic hybrid films of polyvinyl butyral/iron oxide nanoparticles (PVB/Fe2O3) for their control as microactuators. *Physica B: Condensed Matter*, **2018**, 549, 113-117	2.8	3
22	Quaternion Modeling and Observer-based Torque Compensation of an Aerial Manipulator. *IFAC-PapersOnLine*, **2018**, 51, 543-548	0.7	3
21	Identification of Precision Motion Systems with Prandtl-Ishlinskii Hysteresis Nonlinearities **2018**,		3
20	Design, static modeling and simulation of a 5-DOF precise piezoelectric positioner **2016**,		2
19	Feedforward and output feedback control of a highly oscillating and nonlinear 2-DOF piezoelectric actuator by using input shaping compensator and a linear quadratic regulator **2016**,		2
18	Design, modeling and simulation of a three-layer piezoelectric cantilevered actuator with collocated sensor **2016**,		2
17	Nonlinear and Robust Internal Model Control of a Piezoelectric Actuator Devoted to Characterization at the Micro/Nanoscale **2018**,		2
16	Topology Optimization of Piezoelectric Plate Energy Harvester Under External In-Plan Force Considering Different Boundary Conditions **2019**,		2
15	Design of Piezoelectric Actuators By Optimizing the Electrodes Topology. *IEEE Robotics and Automation Letters*, **2021**, 6, 72-79	4.2	2
14	Force estimation in a 2-DoF piezoelectric actuator by using the inverse-dynamics based unknown input observer technique **2015**,		1
13	Presentation, Modeling and Experiments of an Electrostatic Actuator Based Catom for Programmable Matter. *Actuators*, **2020**, 9, 43	2.4	1
12	Robust feedback control for automated force/position control of piezoelectric tube based microgripper **2017**,		1

11	Micropositioning of 2DOF piezocantilever: LKF compensation of parasitic disturbances **2015**,		1
10	Feedforward and State-Feedback Force-Position Control of a Robotic Platform Devoted to Precise Co-manipulation **2020**,		1
9	Development, presentation and tests of a hybrid thermal vibrational energy harvester based on lead free piezoelectric material **2020**,		1
8	Output-feedback control of precision motion systems with uncertain nonlinearities. *Mechanical Systems and Signal Processing*, **2021**, 153, 107483	7.8	1
7	Identification of Hammerstein Systems with Rate-Dependent Hysteresis Nonlinearities in a Class of Smart Material-Based Actuators **2019**,		1
6	Identification of Piezomicropositioning Hammerstein Systems with Generalized Prandtl-Ishlinskii Hysteresis Nonlinearities **2018**,		1
5	Robust and guaranteed output-feedback force control of piezoelectric actuator under temperature variation and input constraints. *Asian Journal of Control*, **2020**, 22, 2242-2253	1.7	0
4	Deep Learning Applied to Data-driven Dynamic Characterization of Hysteretic Piezoelectric Micromanipulators. *IFAC-PapersOnLine*, **2020**, 53, 8559-8564	0.7	0
3	Feedforward and H∞ Feedback Robotic Force Control in a 1-dof Physical Interaction Using a Nonlinear Human Model. *IFAC-PapersOnLine*, **2020**, 53, 8531-8537	0.7	
2	Interval Modeling and Robust Feedback Control of Piezoelectric-Based Microactuators **2013**, 121-147		
1	Identification of a class of precision motion systems with uncertain hysteretic nonlinearities. *International Journal of Control*,1-18	1.5	