

# Kamal Youcef-Toumi

## List of Publications by Year in descending order

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158  
papers

4,032  
citations

186209

28  
h-index

143943

57  
g-index

160  
all docs

160  
docs citations

160  
times ranked

3503  
citing authors

#	ARTICLE	IF	CITATIONS
1	A Time Delay Controller for Systems With Unknown Dynamics. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 1990, 112, 133-142.	0.9	558
2	Multifunctional "Hydrogel Skins" on Diverse Polymers with Arbitrary Shapes. Advanced Materials, 2019, 31, e1807101.	11.1	258
3	Terminal sliding mode control for the trajectory tracking of underactuated Autonomous Underwater Vehicles. Ocean Engineering, 2017, 129, 613-625.	1.9	221
4	Trajectory tracking sliding mode control of underactuated AUVs. Nonlinear Dynamics, 2016, 84, 1079-1091.	2.7	183
5	Analysis and Design of a Direct-Drive Arm With a Five-Bar-Link Parallel Drive Mechanism. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 1984, 106, 225-230.	0.9	163
6	Design of Machines With Compliant Bodies for Biomimetic Locomotion in Liquid Environments. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2006, 128, 3-13.	0.9	138
7	Real-time economic dispatch for the supply side of the energy-water nexus. Applied Energy, 2014, 122, 42-52.	5.1	116
8	High-Bandwidth AFM-Based Rheology Reveals that Cartilage is Most Sensitive to High Loading Rates at Early Stages of Impairment. Biophysical Journal, 2013, 104, 1529-1537.	0.2	90
9	Swimming performance of a biomimetic compliant fish-like robot. Experiments in Fluids, 2009, 47, 927-939.	1.1	89
10	Node Localization in Robotic Sensor Networks for Pipeline Inspection. IEEE Transactions on Industrial Informatics, 2016, 12, 809-819.	7.2	89
11	Computational fluid dynamic simulation of small leaks in water pipelines for direct leak pressure transduction. Computers and Fluids, 2012, 57, 110-123.	1.3	76
12	Fabrication of large area nanostructured magnets by interferometric lithography. IEEE Transactions on Magnetics, 1998, 34, 1087-1089.	1.2	68
13	Modeling, design, and control integration: a necessary step in mechatronics. IEEE/ASME Transactions on Mechatronics, 1996, 1, 29-38.	3.7	66
14	Aggrecan Nanoscale Solid-Fluid Interactions Are a Primary Determinant of Cartilage Dynamic Mechanical Properties. ACS Nano, 2015, 9, 2614-2625.	7.3	61
15	Design of a Novel In-Pipe Reliable Leak Detector. IEEE/ASME Transactions on Mechatronics, 2015, 20, 824-833.	3.7	56
16	Dynamic Cell Fractionation and Transportation Using Moving Dielectrophoresis. Analytical Chemistry, 2007, 79, 6975-6987.	3.2	52
17	A Time Delay Controller for Systems with Unknown Dynamics. , 1988, , .		51
18	Characterization of Environmental Dust in the Dammam Area and Mud After-Effects on Bisphenol-A Polycarbonate Sheets. Scientific Reports, 2016, 6, 24308.	1.6	49

#	ARTICLE	IF	CITATIONS
19	Review Article: Active scanning probes: A versatile toolkit for fast imaging and emerging nanofabrication. <i>Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics</i> , 2017, 35, .	0.6	44
20	The impact of storage facility capacity and ramping capabilities on the supply side economic dispatch of the energy-water nexus. <i>Energy</i> , 2014, 66, 363-377.	4.5	43
21	Intelligent disassembly of electric-vehicle batteries: a forward-looking overview. <i>Resources, Conservation and Recycling</i> , 2022, 182, 106207.	5.3	41
22	Cell Motion Model for Moving Dielectrophoresis. <i>Analytical Chemistry</i> , 2008, 80, 5454-5461.	3.2	40
23	Use of self-actuating and self-sensing cantilevers for imaging biological samples in fluid. <i>Nanotechnology</i> , 2009, 20, 434003.	1.3	40
24	Channel-Aware Relay Node Placement in Wireless Sensor Networks for Pipeline Inspection. <i>IEEE Transactions on Wireless Communications</i> , 2014, 13, 3510-3523.	6.1	39
25	The Design of Open-Loop Manipulator Arms With Decoupled and Configuration-Invariant Inertia Tensors. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , 1987, 109, 268-275.	0.9	38
26	Adaptive task allocation for multi-UAV systems based on bacteria foraging behaviour. <i>Applied Soft Computing Journal</i> , 2019, 83, 105643.	4.1	38
27	Modeling of dielectrophoretic force for moving dielectrophoresis electrodes. <i>Journal of Electrostatics</i> , 2008, 66, 514-525.	1.0	34
28	High-speed trajectory control of a direct-drive manipulator. <i>IEEE Transactions on Automation Science and Engineering</i> , 1993, 9, 102-108.	2.4	33
29	Control for Dynamic Positioning and Way-point Tracking of Underactuated Autonomous Underwater Vehicles Using Sliding Mode Control. <i>Journal of Intelligent and Robotic Systems: Theory and Applications</i> , 2019, 95, 1113-1132.	2.0	33
30	Design and control of multi-actuated atomic force microscope for large-range and high-speed imaging. <i>Ultramicroscopy</i> , 2016, 160, 213-224.	0.8	31
31	MultiCuckoo: Multi-Cloud Service Composition Using a Cuckoo-Inspired Algorithm for the Internet of Things Applications. <i>IEEE Access</i> , 2018, 6, 56737-56749.	2.6	29
32	DMCMN: In Depth Characterization and Control of AFM Cantilevers With Integrated Sensing and Actuation. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , 2009, 131, .	0.9	28
33	Optimal network flow for the supply side of the energy-water nexus. , 2013, , .		27
34	Demand side management in a day-ahead wholesale market: A comparison of industrial & social welfare approaches. <i>Applied Energy</i> , 2015, 156, 642-654.	5.1	27
35	Towards Continuous Authentication in Internet of Things Based on Secret Sharing Scheme. , 2015, , .		27
36	A soft body under-actuated approach to multi degree of freedom biomimetic robots: A stingray example. , 2010, , .		26

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37	An Enterprise Control Assessment Method for Variable Energy Resource-Induced Power System Imbalancesâ€™Part II: Methodology. IEEE Transactions on Industrial Electronics, 2015, 62, 2448-2458.	5.2	26
38	Charge Controller With Decoupled and Self-Compensating Configurations for Linear Operation of Piezoelectric Actuators in a Wide Bandwidth. IEEE Transactions on Industrial Electronics, 2019, 66, 5392-5402.	5.2	26
39	Analysis and Design of an In-Pipe System for Water Leak Detection. , 2011, , .		24
40	Compensator design for improved counterbalancing in high speed atomic force microscopy. Review of Scientific Instruments, 2011, 82, 113712.	0.6	23
41	Fish-Inspired Task Allocation Algorithm for Multiple Unmanned Aerial Vehicles in Search and Rescue Missions. Remote Sensing, 2021, 13, 27.	1.8	23
42	The need for holistic enterprise control assessment methods for the future electricity grid. Renewable and Sustainable Energy Reviews, 2016, 56, 669-685.	8.2	22
43	Flexible fixturing and automatic drilling of sheet metal parts using a robot manipulator. Robotics and Computer-Integrated Manufacturing, 1989, 5, 371-380.	6.1	21
44	Dimensional variation in production of high-aspect-ratio micro-pillars array by micro powder injection molding. Applied Physics A: Materials Science and Processing, 2007, 89, 721-728.	1.1	21
45	An Enterprise Control Assessment Method for Variable Energy Resource-Induced Power System Imbalancesâ€™Part II: Parametric Sensitivity Analysis. IEEE Transactions on Industrial Electronics, 2015, 62, 2459-2467.	5.2	21
46	Relative merits of load following reserves & energy storage market integration towards power system imbalances. International Journal of Electrical Power and Energy Systems, 2016, 74, 222-229.	3.3	21
47	A balanced evacuation algorithm for facilities with multiple exits. European Journal of Operational Research, 2021, 289, 285-296.	3.5	21
48	Computer-aided analysis of reconfigurable fixtures and sheet metal parts for robotic drilling. Robotics and Computer-Integrated Manufacturing, 1988, 4, 387-393.	6.1	20
49	On automating atomic force microscopes: An adaptive control approach. Control Engineering Practice, 2007, 15, 349-361.	3.2	20
50	Design of a mechanical-tunable filter spectrometer for noninvasive glucose measurement. Applied Optics, 2004, 43, 2680.	2.1	19
51	White-light scanning interferometer for absolute nano-scale gap thickness measurement. Optics Express, 2009, 17, 15104.	1.7	19
52	Demand side management in power grid enterprise control: A comparison of industrial & social welfare approaches. Applied Energy, 2017, 187, 833-846.	5.1	19
53	Modeling and Control of Piezoelectric Hysteresis: A Polynomial-Based Fractional Order Disturbance Compensation Approach. IEEE Transactions on Industrial Electronics, 2021, 68, 3348-3358.	5.2	19
54	Optimal coverage of an infrastructure network using sensors with distance-decaying sensing quality. Automatica, 2013, 49, 3351-3358.	3.0	18

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55	Multi-eigenmode control for high material contrast in bimodal and higher harmonic atomic force microscopy. <i>Nanotechnology</i> , 2015, 26, 235706.	1.3	18
56	Event triggered state estimation techniques for power systems with integrated variable energy resources. <i>ISA Transactions</i> , 2015, 56, 165-172.	3.1	18
57	Non-Linear Analysis of Vehicle Dynamics (NAVDyn): A Reduced Order Model for Vehicle Handling Analysis. , 2000, , .		16
58	Three-dimensional profile stitching based on the fiducial markers for microfluidic devices. <i>Optics Communications</i> , 2009, 282, 493-499.	1.0	16
59	Reliable Sensing of Leaks in Pipelines. , 2013, , .		15
60	A Multi-Agent System Coordination Approach for Resilient Self-Healing Operations in Multiple Microgrids. , 2015, , 269-285.		15
61	Smart recovery decision-making for end-of-life products in the context of ubiquitous information and computational intelligence. <i>Journal of Cleaner Production</i> , 2020, 272, 122804.	4.6	15
62	Principle, implementation, and applications of charge control for piezo-actuated nanopositioners: A comprehensive review. <i>Mechanical Systems and Signal Processing</i> , 2022, 171, 108885.	4.4	15
63	Analysis and Design of Semi-Direct-Drive Robot Arms. , 1983, , .		14
64	Variable energy resource induced power system imbalances: Mitigation by increased system flexibility, spinning reserves and regulation. , 2013, , .		14
65	A multi-agent system transient stability platform for resilient self-healing operation of multiple microgrids. , 2014, , .		14
66	Trade-offs and performance limitations in mechatronic systems: a case study. <i>Annual Reviews in Control</i> , 2004, 28, 181-192.	4.4	13
67	Design and analysis of novel friction controlling mechanism with minimal energy for in-pipe robot applications. , 2012, , .		12
68	An enhanced method for the determination of load following reserves. , 2014, , .		12
69	Automatic Vision-Guided Micromanipulation for Versatile Deployment and Portable Setup. <i>IEEE Transactions on Automation Science and Engineering</i> , 2018, 15, 1609-1620.	3.4	12
70	Image-Based Lateral Position, Steering Behavior Estimation, and Road Curvature Prediction for Motorcycles. <i>IEEE Robotics and Automation Letters</i> , 2018, 3, 2694-2701.	3.3	12
71	A Practical Minimalism Approach to In-pipe Robot Localization. , 2019, , .		12
72	Dynamic task allocation in an uncertain environment with heterogeneous multi-agents. <i>Autonomous Robots</i> , 2019, 43, 1639-1664.	3.2	12

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73	Comprehensive study of charge-based motion control for piezoelectric nanopositioners: Modeling, instrumentation and controller design. Mechanical Systems and Signal Processing, 2022, 166, 108477.	4.4	12
74	Automated setup and reconfiguration for modular fixturing. Robotics and Computer-Integrated Manufacturing, 1989, 5, 357-370.	6.1	11
75	An In-Pipe Leak Detection Sensor: Sensing Capabilities and Evaluation. , 2011, , .		11
76	Variable energy resource induced power system imbalances: A generalized assessment approach. , 2013, , .		11
77	MIT Leak Detector: Modeling and Analysis Toward Leak-Observability. IEEE/ASME Transactions on Mechatronics, 2015, 20, 2391-2402.	3.7	11
78	Towards automatic robot-assisted microscopy: An uncalibrated approach for robotic vision-guided micromanipulation. , 2016, , .		11
79	A modular low-cost atomic force microscope for precision mechatronics education. Mechatronics, 2021, 76, 102550.	2.0	11
80	Ultra-Wideband Radar for Robust Inspection Drone in Underground Coal Mines. , 2018, , .		10
81	Lights Out! Nano-Scale Topography Imaging of Sample Surface in Opaque Liquid Environments with Coated Active Cantilever Probes. Nanomaterials, 2019, 9, 1013.	1.9	9
82	Experimental study of interactions in the nanostructured Ni pillar arrays. Journal of Applied Physics, 2000, 87, 5123-5125.	1.1	8
83	Maneuverability of a robotic tuna with compliant body. , 2008, , .		8
84	A comparison of day-ahead wholesale market: Social welfare vs industrial demand side management. , 2015, , .		8
85	Confidence-Based Hybrid Tracking to Overcome Visual Tracking Failures in Calibration-Less Vision-Guided Micromanipulation. IEEE Transactions on Automation Science and Engineering, 2020, 17, 524-536.	3.4	8
86	Sensitivity analysis of near-infrared glucose absorption signals: toward noninvasive blood glucose sensing. , 2000, , .		7
87	Quantifying Acoustic and Pressure Sensing for In-Pipe Leak Detection. , 2010, , .		7
88	Design of a maneuverable swimming robot for in-pipe missions. , 2015, , .		7
89	An enhanced method for the determination of the regulation reserves. , 2015, , .		7
90	Modeling and parameter estimation for in-pipe swimming robots. , 2015, , .		7

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91	An a priori analytical method for the determination of operating reserve requirements. International Journal of Electrical Power and Energy Systems, 2017, 86, 1-17.	3.3	7
92	Self-initialization and recovery for uninterrupted tracking in vision-guided micromanipulation. , 2017, , .		7
93	A generalized Bayesian approach to model calibration. Reliability Engineering and System Safety, 2020, 204, 107141.	5.1	7
94	Extracting cancer cell line electrochemical parameters at the single cell level using a microfabricated device. Biotechnology Journal, 2009, 4, 216-223.	1.8	6
95	Design and Evaluation of an In-Pipe Leak Detection Sensing Technique Based on Force Transduction. , 2012, , .		6
96	Detection & estimation algorithms for in-pipe leak detection. , 2014, , .		6
97	Controlling stochastic growth processes on lattices: Wildfire management with robotic fire extinguishers. , 2014, , .		6
98	An Integrated Energy and Water Market for the Supply Side of the Energy-Water Nexus in the Engineered Infrastructure. , 2014, , .		6
99	An enhanced method for the determination of the ramping reserves. , 2015, , .		6
100	Selection of Important Parameters Using Uncertainty and Sensitivity Analysis. IEEE/ASME Transactions on Mechatronics, 2015, 20, 13-23.	3.7	6
101	Limitations of Underactuated Modal Damping for Multistage Vibration Isolation Systems. IEEE/ASME Transactions on Mechatronics, 2015, 20, 393-404.	3.7	6
102	Design of a leak sensor for operating water pipe systems. , 2017, , .		6
103	A general model validation and testing tool. Reliability Engineering and System Safety, 2020, 195, 106684.	5.1	6
104	Feedback-Assisted Feedforward Hysteresis Compensation: A Unified Approach and Applications to Piezoactuated Nanopositioners. IEEE Transactions on Industrial Electronics, 2021, 68, 11245-11254.	5.2	6
105	Large-area and high-resolution distortion measurement based on moiré fringe method for hot embossing process. Optics Express, 2009, 17, 18394.	1.7	5
106	A power grid enterprise control method for energy storage system integration. , 2014, , .		5
107	Modeling and analysis of an in-pipe robotic leak detector. , 2014, , .		5
108	Impacts of industrial baseline errors in demand side management enabled enterprise control. , 2015, , .		5

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109	Soft-Body Robot Fish. Springer Tracts in Mechanical Engineering, 2015, , 161-191.	0.1	5
110	Statically Stable Charge Sensing Method for Precise Displacement Estimation of Piezoelectric Stack-Based Nanopositioning. IEEE Transactions on Industrial Electronics, 2021, 68, 8550-8560.	5.2	5
111	Detect-Focus-Track-Servo (DFTS): A vision-based workflow algorithm for robotic image-guided micromanipulation. , 2017, , .		5
112	NIR measurements of glucose in synthetic biological solutions using high-throughput angle-tuned filter spectrometer. , 2004, , .		4
113	Robust adaptive control of a class of switched systems. , 2008, , .		4
114	Characterization of In-Pipe Acoustic Wave for Water Leak Detection. , 2011, , .		4
115	Relay node placement in wireless sensor networks for pipeline inspection. , 2013, , .		4
116	RIM Propeller for Micro Autonomous Underwater Vehicles. , 2014, , .		4
117	Inverse Perspective Mapping Roll Angle Estimation for Motorcycles. , 2018, , .		4
118	Context-Aware Gossip-Based Protocol for Internet of Things Applications. Sensors, 2018, 18, 2233.	2.1	4
119	Design and Control of a Multi-Actuated Nanopositioning Stage with Stacked Structure. , 2019, , .		4
120	Quantification and reduction of Poisson-Gaussian mixed noise induced errors in ellipsometry. Optics Express, 2021, 29, 27057.	1.7	4
121	Building block 3D printing based on molecular self-assembly monolayer with self-healing properties. Scientific Reports, 2022, 12, 6806.	1.6	4
122	Characterization of dynamic behavior of flexure-based mechanisms for precision angular alignment. , 2008, , .		3
123	Modal damping of a quadruple pendulum for advanced gravitational wave detectors. , 2012, , .		3
124	MIT Leak Detector: An in-pipe leak detection robot. , 2014, , .		3
125	Impacts of Industrial Baseline Errors on Costs and Social Welfare in the Demand Side Management of Day-Ahead Wholesale Markets. , 2015, , .		3
126	Estimator based multi-eigenmode control of cantilevers in multifrequency Atomic Force Microscopy. , 2015, , .		3



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127	Scene-Adaptive Fusion of Visual and Motion Tracking for Vision-Guided Micromanipulation in Plant Cells. , 2018, , .		3
128	Design of Versatile and Low-Cost Shaft Sensor for Health Monitoring. , 2019, , .		3
129	A General-Purpose Anomalous Scenario Synthesizer for Rotary Equipment. , 2021, , .		3
130	Why simple quadrature is just as good as Monte Carlo. Monte Carlo Methods and Applications, 2020, 26, 1-16.	0.3	3
131	High-precision metrology by means of a novel stereo imaging technique based on atomic force microscopy. , 2001, , .		2
132	Measurements and quality assessments of near-infrared plasma glucose spectra in the combination band region using a scanning filter spectrometer. Journal of Biomedical Optics, 2005, 10, 064039.	1.4	2
133	SINGLE-MOLECULE DNA SEQUENCING WITH FUNCTIONALIZED CARBON NANOTUBE PROBES. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2006, 39, 825-830.	0.4	2
134	A novel white-light scanning interferometer for absolute nano-scale gap thickness measurement. , 2009, , .		2
135	Transient stability of power systems with different configurations for wind power integration. , 2013, , .		2
136	Analysis and control of a thermal management system for robots in temperature-restricted environments. , 2014, , .		2
137	Unevenly spaced continuous measurement approach for dual rotatingâ€“retarder Mueller matrix ellipsometry. Optics Express, 2019, 27, 14736.	1.7	2
138	RecyGlide : A Forearm-worn Multi-modal Haptic Display aimed to Improve User VR Immersion Submission. , 2019, , .		2
139	An In-Pipe Manipulator for Contamination-Less Rehabilitation of Water Distribution Pipes. , 2020, , .		2
140	Radio-Frequency-Based Resonating Sensor for Condition Monitoring on Rotary Equipment. , 2021, , .		2
141	Explicit Energy Storage Fields and Their Application to Structural Property Inspection of Physical Systems. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 1999, 121, 402-409.	0.9	1
142	Robust Adaptive Control of Atomic Force Microscopes. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2004, 37, 669-674.	0.4	1
143	Actuator sizing of a quadruple pendulum for advanced gravitational wave detectors. , 2011, , .		1
144	Robot design for high flow liquid pipe networks. , 2013, , .		1

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145	Automatic Targeting of Plant Cells via Cell Segmentation and Robust Scene-Adaptive Tracking. , 2019, , .		1
146	Guest Editorsâ€™ Introduction to the Special Issue on RGB-D Vision: Methods and Applications. IEEE Transactions on Pattern Analysis and Machine Intelligence, 2020, 42, 2329-2332.	9.7	1
147	Angle Sensor with STM. (2nd Report). Atom Tracking and Yaw Measurement.. Journal of the Japan Society for Precision Engineering, 1997, 63, 807-811.	0.0	1
148	Modeling in the Physical Domain: An Optimization-Based Approach. , 2002, , .		1
149	Programmable Separation for Biologically Active Molecules. , 2006, , .		1
150	Magneto-hydrodynamic Energy Harvester for Low-Power Pipe Instrumentation. IEEE/ASME Transactions on Mechatronics, 2022, 27, 4718-4728.	3.7	1
151	Design and performance evaluation of a near-infrared Fourier transform spectrometer. , 2000, 4163, 33.		0
152	Nano precision AFM imaging by stereo deconvolution: theory; applications, and experimental validation. , 2003, , .		0
153	Moire fringe method for the measurement of distortions of hot-embossed polymeric substrates. , 2008, , .		0
154	Integrated Design and Control of Flexure-Based Nanopositioning Systems â€™ Part I: Methodology. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 9406-9412.	0.4	0
155	Integrated Design and Control of Flexure-Based Nanopositioning Systems â€™ Part II: Application Case Study. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 9397-9405.	0.4	0
156	Control of first and higher transverse eigenmodes of active Atomic Force Microscope cantilevers. , 2016, , .		0
157	Powered Two-Wheeled Vehicles Steering Behavior Study: Vision-Based Approach. , 2018, , .		0
158	Cell Targeting of Plant Cells Array using Uncalibrated Vision-Based Approach. , 2020, , .		0