Yves Perriard

List of Publications by Year
in descending order

153 papers	2,219 citations	304602 22 h-index	265120 42 g-index
154 all docs	154 docs citations	154 times ranked	1696 citing authors

#	Article	IF	Citations
1	An autonomous untethered fast soft robotic insect driven by low-voltage dielectric elastomer actuators. Science Robotics, 2019, 4, .	9.9	295
2	Very-High-Speed Slotless Permanent-Magnet Motors: Analytical Modeling, Optimization, Design, and Torque Measurement Methods. IEEE Transactions on Industrial Electronics, 2010, 57, 296-303.	5.2	174
3	Contactless power and information transmission. IEEE Transactions on Industry Applications, 2002, 38, 1266-1272.	3.3	111
4	Untethered Feelâ€Through Haptics Using 18â€Âµm Thick Dielectric Elastomer Actuators. Advanced Functional Materials, 2021, 31, 2006639.	7.8	97
5	Optimization Design of a Segmented Halbach Permanent-Magnet Motor Using an Analytical Model. IEEE Transactions on Magnetics, 2009, 45, 2955-2960.	1.2	87
6	Slotless Permanent-Magnet Machines: General Analytical Magnetic Field Calculation. IEEE Transactions on Magnetics, 2011, 47, 1739-1752.	1.2	85
7	Reducing the Cogging Torque in Brushless DC Motors by Using Conformal Mappings. IEEE Transactions on Magnetics, 2004, 40, 451-455.	1.2	73
8	Analytical Solution for Rotor Eddy-Current Losses in a Slotless Permanent-Magnet Motor: The Case of Current Sheet Excitation. IEEE Transactions on Magnetics, 2008, 44, 386-393.	1.2	60
9	Force and Torque Analytical Models of a Reaction Sphere Actuator Based on Spherical Harmonic Rotation and Decomposition. IEEE/ASME Transactions on Mechatronics, 2013, 18, 1006-1018.	3.7	60
10	Design of a Contactless Energy-Transfer System for Desktop Peripherals. IEEE Transactions on Industry Applications, 2011, 47, 1643-1651.	3.3	43
11	Optimization of electric motor for a solar airplane application. IEEE Transactions on Industry Applications, 2006, 42, 1053-1061.	3.3	42
12	Development of a Hybrid MEMS BLDC Micromotor. IEEE Transactions on Industry Applications, 2011, 47, 3-11.	3.3	41
13	Rotor Design Optimization for a Reaction Sphere Actuator. IEEE Transactions on Industry Applications, 2014, 50, 1706-1716.	3.3	41
14	An Analytical Determination of Eddy-Current Losses in a Configuration With a Rotating Permanent Magnet. IEEE Transactions on Magnetics, 2007, 43, 3380-3386.	1.2	38
15	Simplified Design Methodology for a Slotless Brushless DC Motor. IEEE Transactions on Magnetics, 2006, 42, 3842-3846.	1.2	35
16	Design of a Semi-Implantable Hearing Device for Direct Acoustic Cochlear Stimulation. IEEE Transactions on Biomedical Engineering, 2011, 58, 420-428.	2.5	35
17	Electromagnetic Analysis and Validation of an Ironless Inductive Position Sensor. IEEE Transactions on Instrumentation and Measurement, 2013, 62, 1267-1275.	2.4	29
18	Determination of tooth cogging force in a hard-disk brushless DC motor. IEEE Transactions on Magnetics, 2005, 41, 4421-4426.	1.2	27

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19	Theoretical and Experimental Investigation of Flex-PCB Air-Gap Windings in Slotless BLDC Machines. IEEE Transactions on Industry Applications, 2014, 50, 3153-3160.	3.3	26
20	Determination of the Thermal Convection Coefficient for a Small Electric Motor. Conference Record - IAS Annual Meeting (IEEE Industry Applications Society), 2006, , .	0.0	25
21	Characterization of Magnetic Immunity of an Ironless Inductive Position Sensor. IEEE Sensors Journal, 2013, 13, 941-948.	2.4	25
22	Feasibility of a Dielectric Elastomer Augmented Aorta. Advanced Science, 2021, 8, 2001974.	5.6	25
23	Closed-loop magnetic bearing and angular velocity control of a reaction sphere actuator. Mechatronics, 2015, 30, 214-224.	2.0	23
24	A New Standstill Position Detection Technique for Nonsalient Permanent-Magnet Synchronous Motors Using the Magnetic Anisotropy Method. IEEE Transactions on Magnetics, 2007, 43, 554-560.	1.2	22
25	Sensitivity analysis and optimization of a standing wave ultrasonic linear motor. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2006, 53, 1352-1361.	1.7	21
26	Very-high-speed permanent magnet motors: Mechanical rotor stresses analytical model. , 2017, , .		19
27	PM motor sensorless position detection based on iron B-H local hysteresis. , 2009, , .		18
28	Design and Optimization of A Blood Pump for A Wearable Artificial Kidney Device. IEEE Transactions on Industry Applications, 2013, 49, 2053-2060.	3.3	18
29	Evaluation of dielectric elastomers to develop materials suitable for actuation. Soft Matter, 2021, 17, 10786-10805.	1.2	17
30	Brushless DC Motor Optimization Process - Choice between Standard or Straight Tooth Shape. Conference Record - IAS Annual Meeting (IEEE Industry Applications Society), 2006, , .	0.0	16
31	Design optimization of a BLDC motor: a comparative analysis. , 2007, , .		13
32	An analytical determination of the torque-speed and efficiency-speed characteristics of a BLDC motor. , 2009, , .		13
33	First-Pulse Technique for Brushless DC Motor Standstill Position Detection Based on Iron B-H Hysteresis. IEEE Transactions on Industrial Electronics, 2012, 59, 2319-2328.	5.2	13
34	Novel Optimized Shape and Topology for Slotless Windings in BLDC Machines. IEEE Transactions on Industry Applications, 2020, 56, 1275-1283.	3.3	13
35	Analytical Force Determination in an Electromagnetic Actuator. IEEE Transactions on Magnetics, 2008, 44, 2181-2185.	1.2	12
36	Sensorless position detection of a linear actuator using the resonance frequency. , 2009, , .		12

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37	Analytical Determination of the Phase Inductances of a Brushless DC Motor With Faulhaber Winding. IEEE Transactions on Industry Applications, 2010, 46, 1360-1366.	3.3	12
38	An analytical solution for the torque and power of a solid-rotor induction motor. , 2011, , .		12
39	Modeling of High-Frequency Electromagnetic Effects on an Ironless Inductive Position Sensor. IEEE Sensors Journal, 2013, 13, 4663-4670.	2.4	12
40	Novel Generalized Notch Filter for Harmonic Vibration Suppression in Magnetic Bearing Systems. IEEE Transactions on Industry Applications, 2021, 57, 6977-6987.	3.3	12
41	An untethered mechanically-intelligent inchworm robot powered by a shape memory alloy oscillator. Sensors and Actuators A: Physical, 2021, 332, 113115.	2.0	12
42	About tuning capacitors in inductive coupled power transfer systems. , 2013, , .		11
43	Minimizing the circulating currents of a slotless BLDC motor through winding reconfiguration. , 2015, , .		11
44	Validation by measurements of a windage losses model for very-high-speed machines. , 2017, , .		11
45	Current Control Strategy for Dynamic Winding Reconfiguration of Slotless Brushless DC Motors. IEEE Transactions on Industry Applications, 2019, 55, 417-425.	3.3	11
46	Study of a miniature magnetorheological fluid actuator for haptic devices. , 2010, , .		10
47	Ironless position sensor with intrinsic immunity to external magnetic fields. , 2011, , .		10
48	Analysis of a new topology of flexible PCB winding for slotless BLDC machines. , 2014, , .		10
49	Modeling and Compensation of Thermal Effects on an Ironless Inductive Position Sensor. IEEE Transactions on Industry Applications, 2014, 50, 375-382.	3.3	10
50	Design of Compact Bearingless Disc Drive Systems. IEEE Transactions on Industry Applications, 2020, 56, 4870-4881.	3.3	10
51	Eddy current power losses in a toroidal laminated core with rectangular cross section. , 2009, , .		9
52	Analysis of BLDC motor with zigzag and rhombic winding. , 2010, , .		9
53	Analytical and experimental investigation on the force and torque of a Reaction Sphere for satellite attitude control. , 2011, , .		9
54	New Implantable Hearing Device Based on a Micro-Actuator that is Directly Coupled to the Inner Ear Fluid. , 2006, 2006, 3162-5.		8

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55	Optimization of a new type of ultrasonic linear motor. IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 2008, 55, 659-667.	1.7	8
56	Optimization design of a linear actuator using a genetic algorithm. , 2009, , .		8
57	An open-loop control strategy of a reaction sphere for satellite attitude control. , 2011, , .		8
58	Electromagnetic model of an ironless inductive position sensor. , 2012, , .		8
59	Validity Tests of Superposition Principle Based on Forward Model for Electromagnetic Induction Scattering. IEEE Transactions on Magnetics, 2015, 51, 1-4.	1.2	8
60	Optimization of Shape and Topology for Slotless Windings in BLDC Machines. , 2018, , .		8
61	Very-High-Speed Miniaturized Permanent Magnet Motors: Modeling and Experimental Validation. , 2019, , .		8
62	Efficiency Optimization of Slotless Magnetic-Bearing Machines. IEEE Transactions on Industry Applications, 2021, 57, 6833-6843.	3.3	8
63	Sensorless Speed Control of Traveling Wave Ultrasonic Motor. Conference Record - IAS Annual Meeting (IEEE Industry Applications Society), 2006, , .	0.0	7
64	Brushless DC Motor for a Solar Airplane Application: Comparison between Simulations and Measurements. , 2008, , .		7
65	Exploitation of iron B-H local hysteresis for the rotor position detection of a PM motor. , 2009, , .		7
66	Skin and proximity effects for coreless transformers. , 2011, , .		7
67	Towards multi-finger haptic devices: A computer keyboard with adjustable force feedback. , 2011, , .		7
68	Design and characterization of a soft magneto-rheological miniature shock absorber for a controllable variable stiffness sole. Archives of Electrical Engineering, 2015, 64, 547-558.	1.0	7
69	Torque measurement methods for very high speed synchronous motors. , 2008, , .		6
70	Adaptive control of ultrasonic motors using the maximum power point tracking method. , 2008, , .		6
71	An analytical solution for the rotor eddy current losses in a slotless PM motor: the case of current layer excitation. , 2009, , .		6
72	Optimal design of an in-wheel BLDC motor for a kick scooter. , 2010, , .		6

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73	Kalman filter to measure position and speed of a linear actuator. , 2011, , .		6
74	Optimal design of a squeeze film actuator for friction feedback. , 2013, , .		6
75	Hybrid FEM-analytical force and torque models of a reaction sphere actuator. , 2013, , .		6
76	Back-EMF and rotor angular velocity estimation for a reaction sphere actuator. , 2014, , .		6
77	Design considerations for a contactless battery charger. , 2014, , .		6
78	Ultrahigh-Voltage Switch for Bidirectional DCâ€“DC Converter Driving Dielectric Elastomer Actuator. IEEE Transactions on Power Electronics, 2020, 35, 13172-13181.	5.4	6
79	Towards the material limit and field concentration smoothing in multilayer dielectric elastomer actuators. Smart Materials and Structures, 2020, 29, 045044.	1.8	6
80	Control-Oriented Modeling and Analysis of Tubular Dielectric Elastomer Actuators Dedicated to Cardiac Assist Devices. IEEE Robotics and Automation Letters, 2022, 7, 4361-4367.	3.3	6
81	Finite element method based design and optimisation methodology for piezoelectric ultrasonic motors. Mathematics and Computers in Simulation, 2010, 81, 446-459.	2.4	5
82	Design of a contactless energy transfer system for desktop peripherals. , 2010, , .		5
83	Thermal modeling of a BLDC motor for a kick scooter. , 2012, , .		5
84	Balanced Metal Detector Based on Optimized Frequencies and Spatial Phase Profile Responses to Differentiate Metal Rods. IEEE Magnetics Letters, 2017, 8, 1-5.	0.6	5
85	Characterization and Verification of Eddy-Current Position Sensing for Magnetic Levitation. IEEE Transactions on Industry Applications, 2021, 57, 5796-5805.	3.3	5
86	Adaptation of a Solid-State Marx Modulator for Electroactive Polymer. IEEE Transactions on Power Electronics, 2022, 37, 13014-13021.	5.4	5
87	An analytical formula for the back emf of a slotted BLDG motor. , 2007, , .		4
88	Development of Planar Microcoils for an Electromagnetic Linear Actuator Fabricated in Batch-Type Wafer Technology. , 2008, , .		4
89	Design of a resonant power inverter for a piezoelectric actuator. , 2012, , .		4
90	Density-Based Topology Optimization of Conductor Paths for Windings in Slotted Electrical Machines. , 2019, , .		4

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91	Shape Optimization of Soft Magnetic Composites Using Level-Set Method. IEEE Transactions on Magnetics, 2021, 57, 1-8.	1.2	4
92	Ultra-High-Voltage (7-kV) Bidirectional Flyback Converter Used to Drive Capacitive Actuators. IEEE Transactions on Industry Applications, 2021, 57, 5145-5156.	3.3	4
93	Contactless system dedicated to colic stimulation. , 2008, , .		3
94	Genetic Algorithm optimization for a surgical ultrasonic transducer. , 2008, , .		3
95	A miniature short stroke linear actuator and its position control for a haptic key. , 2009, , .		3
96	Torque measurement methods for very highâ€speed motors. COMPEL - the International Journal for Computation and Mathematics in Electrical and Electronic Engineering, 2010, 29, 1172-1183.	0.5	3
97	Indirect rotor position detection method based on angular admittance modulation of optimally designed piezoelectric ultrasonic motors. , 2010, , .		3
98	Modeling and design of a hybrid MEMS motor. , 2010, , .		3
99	Miniature Short-Stroke Linear Actuator. IEEE Industry Applications Magazine, 2011, 17, 14-19.	0.3	3
100	Self-sensing of linear short-stroke actuators for multi-finger haptic interfaces using induced high frequency oscillations. , 2012, , .		3
101	Empirical modeling of a squeeze film haptic actuator. , 2012, , .		3
102	Design of a Miniature Short-Stroke Constant-Force Linear Actuator. Applied Mechanics and Materials, 0, 416-417, 109-114.	0.2	3
103	Optimisation of the mover kinetic energy of a miniature linear actuator. , 2014, , .		3
104	Equivalent piezoelectric actuator circuits and comparison. , 2014, , .		3
105	Force Analysis of a Slotless Lorentz-Type Active Magnetic Bearing Actuator. , 2018, , .		3
106	An optimized self-sensing piezoelectric cantilever for micro-robotic applications. Journal of Micro-Bio Robotics, 2019, 15, 91-103.	2.1	3
107	Very-High-Speed Miniaturized Permanent Magnet Motors: Design and Optimization. , 2019, , .		3
108	Study of a hollow ultrasonic rotary motor. , 2008, , .		2

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109	Towards self-sensed drives in linear haptic systems. , 2009, , .		2
110	Development of a hybrid MEMS BLDC micromotor. , 2009, , .		2
111	Optimal design and sensorless position control of a piezoelectric motor integrated into a mechatronic cylinder lock. , 2010, , .		2
112	Extension of the local observability down to zero speed of BLDC motor state-space models using iron B-H local hysteresis. , 2011, , .		2
113	Conception of a piezoelectric linear motor for the generation of high linear forces. , 2011, , .		2
114	Robust and efficient 3D model of an electromagnetic induction (EMI) sensor. , 2013, , .		2
115	Modeling and characterization of a MEMS synchronous generator. , 2014, , .		2
116	A novel electronically-controlled linear escapement mechanism. , 2014, , .		2
117	Modelling and design of complex geometry parts vibratory conveying. , 2014, , .		2
118	Empirical Modeling of a Squeeze Film Haptic Actuator. IEEE Transactions on Industry Applications, 2014, 50, 1809-1816.	3.3	2
119	Design and modelling of a test bench to characterise magnetic fluids. , 2015, , .		2
120	Battery Charger for Electric Vehicle Based on a Wireless Power Transmission. , 2016, , .		2
121	Passive, Active and Loss Tradeoffs in High-Speed Bearingless Motors. , 2018, , .		2
122	General Sensorless Method with Parameter Identification and Double Kalman Filter Applied to a Bistable Fast Linear Switched Reluctance Actuator for Textile Machine. IEEJ Journal of Industry Applications, 2019, 8, 33-40.	0.9	2
123	Critical Parasitic Elements of Coupled Inductors for Ultra-High Voltage Flyback Converters Used to Drive Capacitive Actuators. , 2019, , .		2
124	Optimal Design of Magnetorheological Valve Integrated in an Intelligent Footwear for Diabetic Patients with Foot Insensitivity. , 2021, , .		2
125	A square magnetic circuit analysis using Schwarzâ€“Christoffel mapping. Mathematics and Computers in Simulation, 2006, 71, 460-465.	2.4	1
126	Ultrasonic Transducer Model for Optimization of a Spinal Tissue Ablation System. Conference Record - IAS Annual Meeting (IEEE Industry Applications Society), 2006, , .	0.0	1

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127	Analytical Determination of the Phase Inductances for a Brushless DC Motor with Faulhaber Winding. Conference Record - IAS Annual Meeting (IEEE Industry Applications Society), 2007, , .	0.0	1
128	A new electrically assist scooter. , 2008, , .		1
129	Modelling and design of a contactless energy transfer system for a notebook battery charger. , 2010, , .		1
130	Design for self-sensing of a linear actuator. , 2011, , .		1
131	Design of a blood pump for a wearable artificial kidney device. , 2012, , .		1
132	An optimal sensor placement strategy for force and torque analytical models of a reaction sphere actuator for satellite attitude control. , 2012, , .		1
133	Modelling and compensation of thermal effects on an Ironless Inductive Position Sensor. , 2012, , .		1
134	Modelling and optimal design of a ring-type structure for the generation of a traveling wave. , 2013, , .		1
135	3-Coil resonance structure wireless power transfer for 5kV implantable device. , 2015, , .		1
136	Quality factor and vibration amplitude estimation of a piezoelectric-actuated system using impedance measurements. , 2015, , .		1
137	Experimental Electromechanical Characterization of Slotted and Slotless Miniature Bearingless Drives. , 2021, , .		1
138	Integrated, Eddy-Current-Based Sensing of Rotor Position for Magnetic Levitation. , 2020, , .		1
139	Exploring Beyond the Helmholtz Coils for Uniform Magnetic Field Generation With Topology Optimization. IEEE Transactions on Magnetics, 2022, 58, 1-4.	1.2	1
140	Micro-Actuator for New Implantable Hearing Device. Conference Record - IAS Annual Meeting (IEEE) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	0.0	0
141	Modeling of Hysteresis Losses Applied to Slotless Permanent Magnet Motors. , 2007, , .		0
142	Optimization of a Biomedical Actuator for Implantable Continuous Glucose Monitoring. Conference Record - IAS Annual Meeting (IEEE Industry Applications Society), 2007, , .	0.0	0
143	Analysis and Modeling of Electrostatic Discharge in a Tactile Glass Featured Watch. IEEE Transactions on Industry Applications, 2007, 43, 1091-1098.	3.3	0
144	Erratum to â€œElectromagnetic Analysis and Validation of an Ironless Inductive Position Sensorâ€•[May 13 1267-1275]. IEEE Transactions on Instrumentation and Measurement, 2013, 62, 2356-2356.	2.4	0

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145	Haptic tactile interface (HTI): Friction coefficient measurements. , 2013, , .		0
146	Haptic tactile interface: A novel click-wheel user experience. , 2013, , .		0
147	Haptic tactile interface (HTI): Design of the power supply stage. , 2013, , .		0
148	A Novel winding topology applied for a self-shielding induction cooker. , 2013, , .		0
149	Comparison of FPCB windings of BLDC machines with paralelly and radially magnetized rotor poles. , 2014, , .		0
150	Design of a self-oscillating class D power amplifier for piezoelectric actuators. , 2014, , .		0
151	Study of the efficiency of an electronically-controlled linear escapement. , 2015, , .		0
152	LOD Homogenization of Multiscale Eddy Current Problem in Time Domain. IEEE Transactions on Magnetics, 2021, 57, 1-4.	1.2	0
153	Schmitt trigger-based control strategy for the discharge phase of an ultra-high-voltage bidirectional flyback. , 2021, , .		0