Roberto Giral

List of Publications by Year
in descending order

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108 papers	2,817 citations	186209 28 h-index	197736 49 g-index
110 all docs	110 docs citations	110 times ranked	1977 citing authors

#	Article	IF	Citations
1	The Versatile Buck-Boost Converter as Power Electronics Building Block: Changes, Techniques, and Applications. IEEE Industrial Electronics Magazine, 2023, 17, 36-45.	2.3	6
2	Improved Model Predictive Current Control of the versatile Buck-Boost Converter for a Photovoltaic Application. IEEE Transactions on Energy Conversion, 2022, , 1-14.	3.7	4
3	Sliding mode control of photovoltaic based power generation systems for microgrid applications. International Journal of Control, 2021, 94, 1704-1715.	1.2	15
4	A Large-Signal Model for a Peak Current Mode Controlled Boost Converter With Constant Power Loads. IEEE Journal of Emerging and Selected Topics in Power Electronics, 2021, 9, 559-568.	3.7	7
5	Fast-Scale Stability Analysis of a DCâ€“DC Boost Converter With a Constant Power Load. IEEE Journal of Emerging and Selected Topics in Power Electronics, 2021, 9, 549-558.	3.7	26
6	An MPPT Algorithm for PV Systems Based on a Simplified Photo-Diode Model. IEEE Access, 2021, 9, 33189-33202.	2.6	20
7	Evaluation of particle swarm optimization techniques applied to maximum power point tracking in photovoltaic systems. International Journal of Circuit Theory and Applications, 2021, 49, 1849-1867.	1.3	26
8	Sliding-mode controller for a photovoltaic system based on a Cuk converter. International Journal of Electrical and Computer Engineering, 2021, 11, 2027.	0.5	1
9	DC Voltage Sensorless Predictive Control of a High-Efficiency PFC Single-Phase Rectifier Based on the Versatile Buck-Boost Converter. Sensors, 2021, 21, 5107.	2.1	8
10	Modelling of SEPIC, Ätuk and Zeta Converters in Discontinuous Conduction Mode and Performance Evaluation. Sensors, 2021, 21, 7434.	2.1	9
11	ADC Quantization Effects in Two-Loop Digital Current Controlled DC-DC Power Converters: Analysis and Design Guidelines. Applied Sciences (Switzerland), 2020, 10, 7179.	1.3	3
12	Coupled inductors design of the bidirectional nonâ€inverting buckâ€“boost converter for highâ€voltage applications. IET Power Electronics, 2020, 13, 3188-3198.	1.5	9
13	HM/PWM Seamless Control of a Bidirectional Buckâ€“Boost Converter for a Photovoltaic Application. IEEE Transactions on Power Electronics, 2019, 34, 2887-2899.	5.4	19
14	Analysis, Design, and Implementation of a Static Conductance-Based MPPT Method. IEEE Transactions on Power Electronics, 2019, 34, 1960-1979.	5.4	27
15	Digital Control of a Buck Converter Based on Input-Output Linearization. An Interpretation Using Discrete-Time Sliding Control Theory. Energies, 2019, 12, 2738.	1.6	4
16	Multisampled Digital Average Current Controls of the Versatile Buckâ€“Boost Converter. IEEE Journal of Emerging and Selected Topics in Power Electronics, 2019, 7, 879-890.	3.7	24
17	An Efficiency Comparison of Fuel-Cell Hybrid Systems Based on the Versatile Buckâ€“Boost Converter. IEEE Transactions on Power Electronics, 2018, 33, 1237-1246.	5.4	47
18	Design of Current Programmed Switching Converters Using Sliding-Mode Control Theory. Energies, 2018, 11, 2034.	1.6	6

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19	Digital current control of the versatile buck-boost converter for photovoltaic applications. , 2017, , .		4
20	DC transformer based on the versatile DC-DC noninverting buck-boost converter for fuel cell emulation. , 2017, , .		2
21	Direct digital design of a sliding modeâ€based control of a PWM synchronous buck converter. IET Power Electronics, 2017, 10, 1714-1720.	1.5	24
22	Prediction of subharmonic oscillation in switching regulators: from a slope to a ripple standpoint. International Journal of Electronics, 2016, 103, 2090-2109.	0.9	9
23	Modeling, Dynamics, Bifurcation Behavior and Stability Analysis of a DCâ€“DC Boost Converter in Photovoltaic Systems. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2016, 26, 1650166.	0.7	27
24	Improved Design of Sliding-Mode Controllers Based on the Requirements of MPPT Techniques. IEEE Transactions on Power Electronics, 2016, 31, 235-247.	5.4	120
25	Static and Dynamic Currentâ€“Voltage Modeling of a Proton Exchange Membrane Fuel Cell Using an Inputâ€“Output Diffusive Approach. IEEE Transactions on Industrial Electronics, 2016, 63, 1003-1015.	5.2	23
26	Boundaries of Subharmonic Oscillations Associated With Filtering Effects of Controllers and Current Sensors in Switched Converters Under CMC. IEEE Transactions on Industrial Electronics, 2016, 63, 4826-4837.	5.2	7
27	Maximum power point tracking of photovoltaic systems based on the sliding mode control of the module admittance. Electric Power Systems Research, 2016, 136, 125-134.	2.1	58
28	Multisampled average current control of switching power converters. , 2015, , .		6
29	Identification of a Proton-Exchange Membrane Fuel Cellâ€™s Model Parameters by Means of an Evolution Strategy. IEEE Transactions on Industrial Informatics, 2015, 11, 548-559.	7.2	74
30	Energy Management of a Fuel-Cell Serialâ€“Parallel Hybrid System. IEEE Transactions on Industrial Electronics, 2015, 62, 5227-5235.	5.2	40
31	Input voltage sliding mode control of the versatile buck-boost converter for photovoltaic applications. , 2015, , .		5
32	Hysteretic Transition Method for Avoiding the Dead-Zone Effect and Subharmonics in a Noninverting Buckâ€“Boost Converter. IEEE Transactions on Power Electronics, 2015, 30, 3418-3430.	5.4	67
33	Maximum power point tracking based on the sliding mode control of the average PV admittance. , 2014, , .		0
34	Energy management of a fuel cell serial-parallel hybrid system. , 2014, , .		1
35	Energy Management DC System Based on Current-Controlled Buck-Boost Modules. IEEE Transactions on Smart Grid, 2014, 5, 2644-2653.	6.2	21
36	Simplified Mathematical Model for Calculating the Oxygen Excess Ratio of a PEM Fuel Cell System in Real-Time Applications. IEEE Transactions on Industrial Electronics, 2014, 61, 2816-2825.	5.2	29

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37	Active pre-filters for dc/dc Boost regulators. Ingenieria E Investigacion, 2014, 34, 49-54.	0.2	0
38	A new solution of maximum power point tracking based on sliding mode control. , 2013, , .		3
39	Perturb and Observe MPPT algorithm with a current controller based on the sliding mode. International Journal of Electrical Power and Energy Systems, 2013, 44, 346-356.	3.3	132
40	A Fast Current-Based MPPT Technique Employing Sliding Mode Control. IEEE Transactions on Industrial Electronics, 2013, 60, 1168-1178.	5.2	190
41	Fast Transitions Between Current Control Loops of the Coupled-Inductor Buckâ€“Boost DCâ€“DC Switching Converter. IEEE Transactions on Power Electronics, 2013, 28, 3648-3652.	5.4	45
42	Synthesis of loss-free resistors based on sliding-mode control and its applications in power processing. Control Engineering Practice, 2013, 21, 689-699.	3.2	60
43	Asymmetrical Interleaved DC/DC Switching Converters for Photovoltaic and Fuel Cell Applicationsâ€”Part 2: Control-Oriented Models. Energies, 2013, 6, 5570-5596.	1.6	12
44	Effects of non-ideal current sensing on subharmonic oscillation boundary in DC-DC switching converters under CMC. , 2013, , .		2
45	Model identification of a Proton-Exchange Membrane Fuel-Cell from an input-output experiment: The diffusive representation approach. , 2013, , .		1
46	Reactivation System for Proton-Exchange Membrane Fuel-Cells. Energies, 2012, 5, 2404-2423.	1.6	2
47	A Review of the Main Power Electronics' Advances in Order to Ensure Efficient Operation and Durability of PEMFCs. Automatika, 2012, 53, 184-198.	1.2	7
48	Predictive one-cycle current control of a boost converter. , 2012, , .		1
49	Asymmetrical Interleaved DC/DC Switching Converters for Photovoltaic and Fuel Cell Applicationsâ€”Part 1: Circuit Generation, Analysis and Design. Energies, 2012, 5, 4590-4623.	1.6	34
50	Fuel cell emulator for oxygen excess ratio estimation on power electronics applications. Computers and Electrical Engineering, 2012, 38, 926-937.	3.0	34
51	Current-Mode Control of a Coupled-Inductor Buckâ€“Boost DCâ€“DC Switching Converter. IEEE Transactions on Power Electronics, 2012, 27, 2536-2549.	5.4	82
52	LMI-Based Robust Controllers for DC-DC Cascade Boost Converters. Journal of Power Electronics, 2012, 12, 538-547.	0.9	6
53	PV field distributed maximum power point tracking by means of an active bypass converter. , 2011, , .		22
54	Interleaved Converters Based on Sliding-Mode Control in a Ring Configuration. IEEE Transactions on Circuits and Systems I: Regular Papers, 2011, 58, 2566-2577.	3.5	40

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55	A fast current-based MPPT technique based on sliding mode control. , 2011, , .		10
56	Improving the perturb and observe Maximum Power Point Tracking by using Sliding Mode control. , 2011, , .		2
57	Sliding-Mode Control of DC-DC Switching Converters. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 1910-1916.	0.4	17
58	Design of photovoltaic-based current sources for maximum power transfer by means of power gyrators. IET Power Electronics, 2011, 4, 674.	1.5	18
59	Topologies and control of a class of single inductor multiple-output converters operating in continuous conduction mode. IET Power Electronics, 2011, 4, 927.	1.5	29
60	A Noninverting Buckâ€“Boost DCâ€“DC Switching Converter With High Efficiency and Wide Bandwidth. IEEE Transactions on Power Electronics, 2011, 26, 2490-2503.	5.4	110
61	DC/DC pre-regulator for input current ripple reduction and efficiency improvement. Electric Power Systems Research, 2011, 81, 2048-2055.	2.1	13
62	Switching and linear power stages evaluation for PEM fuel cell emulation. International Journal of Circuit Theory and Applications, 2011, 39, 475-499.	1.3	9
63	Fuel cell hybrid topologies selection and control. , 2011, , .		2
64	Mathematical analysis of hybrid topologies efficiency for PEM fuel cell power systems design. International Journal of Electrical Power and Energy Systems, 2010, 32, 1049-1061.	3.3	41
65	A ripple-mitigating pre-filter based on interleaved DC-DC boost converters. , 2010, , .		1
66	FPGA-based controller for mitigation of the 100 Hz oscillation in grid connected PV systems. , 2010, , .		4
67	Fuel cell MPPT for fuel consumption optimization. , 2010, , .		16
68	Minimizing the effects of shadowing in a PV module by means of active voltage sharing. , 2010, , .		42
69	Why is sliding mode control methodology needed for power converters?. , 2010, , .		28
70	A PEM Fuel-Cell Model Featuring Oxygen-Excess-Ratio Estimation and Power-Electronics Interaction. IEEE Transactions on Industrial Electronics, 2010, 57, 1914-1924.	5.2	79
71	Dynamics and Stability Issues of a Single-Inductor Dual-Switching DCâ€“DC Converter. IEEE Transactions on Circuits and Systems I: Regular Papers, 2010, 57, 415-426.	3.5	61
72	Simulator of a PEM fuel-cell stack based on a dynamic model. , 2009, , .		4

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73	Minimum Fuel Consumption Strategy for PEM Fuel Cells. IEEE Transactions on Industrial Electronics, 2009, 56, 685-696.	5.2	109
74	Fuzzy-based modelling technique for PEMFC electrical power generation systems emulation. IET Power Electronics, 2009, 2, 241-255.	1.5	14
75	Predictive digital interpolation current control for DCâ€“DC power converters. IET Power Electronics, 2009, 2, 545-554.	1.5	36
76	Single inductor multiple outputs interleaved converters operating in CCM. , 2008, , .		7
77	Simulation-Oriented Continuous Model of Hysteretic Controlled DC-to-DC Converters. , 2007, , .		3
78	Fuel Cell Power Output Using a LQR Controlled AIDB Converter. , 2007, , .		4
79	Evaluation of Fixed-Step Differential Equations Solution Methods for Fuel Cell Real-Time Simulation. , 2007, , .		5
80	Maximum Power Point Tracking Strategy for Fuel Cell Power Systems. , 2007, , .		12
81	Predictive Digital Interpolation Current Control. , 2006, , .		2
82	Stability analysis of a single inductor dual switching dcâ€“dc converter. Mathematics and Computers in Simulation, 2006, 71, 256-269.	2.4	24
83	Three Dimensional Discrete Map for a Single Inductor Current Mode Controlled Dual Switching DC-DC Converter. , 2006, , .		1
84	Predictive Digital Interpolation Current Control. , 2006, , .		2
85	Three Dimensional Discrete Map for a Single Inductor Current Mode Controlled Dual Switching DC-DC Converter. , 2006, , .		0
86	BIFURCATIONS IN DCâ€“DC SWITCHING CONVERTERS: REVIEW OF METHODS AND APPLICATIONS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2005, 15, 1549-1578.	0.7	125
87	Self-oscillating DC-to-DC switching converters with transformer characteristics. IEEE Transactions on Aerospace and Electronic Systems, 2005, 41, 710-716.	2.6	40
88	Low frequency multilevel inverters for renewable energy systems. , 2005, , .		8
89	LQR control of an asymmetrical interleaved boost converter working in inherent DCM. , 2005, , .		10
90	Symmetrical power supply for 42 v automotive applications. Facta Universitatis - Series Electronics and Energetics, 2004, 17, 365-376.	0.6	1

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91	Current control technique for improving EMC in power converters. Electronics Letters, 2001, 37, 274.	0.5	23
92	Linear state-feedback control of a boost converter for large-signal stability. IEEE Transactions on Circuits and Systems Part 1: Regular Papers, 2001, 48, 418-424.	0.1	40
93	Sliding-mode control of interleaved boost converters. IEEE Transactions on Circuits and Systems Part 1: Regular Papers, 2000, 47, 1330-1339.	0.1	94
94	Interleaved converters operation based on CMC. IEEE Transactions on Power Electronics, 1999, 14, 643-652.	5.4	146
95	Analysis of a bidirectional coupled-inductor Cuk converter operating in sliding mode. IEEE Transactions on Circuits and Systems Part 1: Regular Papers, 1998, 45, 355-363.	0.1	74
96	Boost converter with output filter. A sliding approach. , 0, , .		4
97	Compensating networks for sliding-mode control. , 0, , .		18
98	Push-pull switching power amplifier with sliding-mode control. , 0, , .		2
99	Self-oscillating boost converter with output filter for ideal load regulation. , 0, , .		2
100	Switched capacitor interleaved dual-boost regulator with sliding mode control. , 0, , .		3
101	Design of locally stable sliding modes in bidirectional switching converters. , 0, , .		2
102	Large-signal stability of a boost regulator by means of linear control laws. , 0, , .		1
103	Quasiperiodic route to chaos in DC-DC switching regulators. , 0, , .		19
104	Inherent DCM operation of the asymmetrical interleaved dual buck-boost. , 0, , .		20
105	Stability analysis and bifurcations of SEPIC DC-DC converter using a discrete-time model. , 0, , .		11
106	Hopf bifurcation in PWM controlled asymmetrical interleaved dual boost DC-DC converter. , 0, , .		2
107	Novel autonomous current mode one-cycle controller for PFC AC-DC pre-regulators. , 0, , .		1
108	Self-oscillating interleaved boost regulator with loss free resistor characteristic. , 0, , .		8