

Sergio Vazquez

List of Publications by Year in descending order

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153
papers

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6083
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#	ARTICLE	IF	CITATIONS
1	Low Computational Burden Model Predictive Control for Single-Phase Cascaded H-Bridge Converters Without Weighting Factor. IEEE Transactions on Industrial Electronics, 2023, 70, 2396-2406.	7.9	9
2	Cascaded Modular Multilevel Converter and Cycloconverter Based Machine Drive System. IEEE Transactions on Industrial Electronics, 2023, 70, 2373-2384.	7.9	5
3	Control System Design of a Three-Phase Active Front End Using a Sliding-Mode Observer. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2022, 52, 739-748.	9.3	12
4	Sliding Mode Control of Grid-Connected Neutral-Point-Clamped Converters Via High-Gain Observer. IEEE Transactions on Industrial Electronics, 2022, 69, 4010-4021.	7.9	59
5	Applications and Modulation Methods for Modular Converters Enabling Unequal Cell Power Sharing: Carrier Variable-Angle Phase-Displacement Modulation Methods. IEEE Industrial Electronics Magazine, 2022, 16, 19-30.	2.6	28
6	Observer-Based Sliding-Mode Control for Grid-Connected Power Converters Under Unbalanced Grid Conditions. IEEE Transactions on Industrial Electronics, 2022, 69, 517-527.	7.9	33
7	Prediction Model With Harmonic Load Current Components for FCS-MPC of an Uninterruptible Power Supply. IEEE Transactions on Power Electronics, 2022, 37, 322-331.	7.9	37
8	Adaptive Second-Order Sliding Mode Control for Grid-Connected NPC Converters With Enhanced Disturbance Rejection. IEEE Transactions on Power Electronics, 2022, 37, 206-220.	7.9	29
9	K-Best Sphere Decoding Algorithm for Long Prediction Horizon FCS-MPC. IEEE Transactions on Industrial Electronics, 2022, 69, 7571-7581.	7.9	17
10	An Artificial Intelligence Approach for Real-Time Tuning of Weighting Factors in FCS-MPC for Power Converters. IEEE Transactions on Industrial Electronics, 2022, 69, 11987-11998.	7.9	26
11	Fuzzy Logic System-Based Sliding-Mode Control for Three-Level NPC Converters. IEEE Transactions on Transportation Electrification, 2022, 8, 3307-3319.	7.8	8
12	Sliding Mode Control in Power Converters and Drives: A Review. IEEE/CAA Journal of Automatica Sinica, 2022, 9, 392-406.	13.1	56
13	An Improved Implicit Model Predictive Current Control With Continuous Control Set for PMSM Drives. IEEE Transactions on Transportation Electrification, 2022, 8, 2444-2455.	7.8	24
14	Parallel Sphere Decoding Algorithm for Long-Prediction-Horizon FCS-MPC. IEEE Transactions on Power Electronics, 2022, 37, 7896-7906.	7.9	10
15	The Influence of MPPT Algorithms in the Lifespan of the Capacitor Across the PV Array. IEEE Access, 2022, 10, 40945-40952.	4.2	1
16	A Floquet theory-based fast time-domain stability analysis for n -parallel inverters system. IET Power Electronics, 2022, 15, 186-202.	2.1	0
17	Fuzzy Sliding-Mode Control for Three-Level NPC AFE Rectifiers: A Chattering Alleviation Approach. IEEE Transactions on Power Electronics, 2022, 37, 11704-11715.	7.9	18
18	Advanced Control Methods for Power Converters in DG Systems and Microgrids. IEEE Transactions on Industrial Electronics, 2021, 68, 5847-5862.	7.9	62

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19	Enhanced Switching Frequency Control in FCS-MPC for Power Converters. IEEE Transactions on Industrial Electronics, 2021, 68, 2470-2479.	7.9	48
20	Adaptive Control for Three-Phase Power Converters With Disturbance Rejection Performance. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2021, 51, 674-685.	9.3	18
21	Variable Rounding Level Control Method for Modular Multilevel Converters. IEEE Transactions on Power Electronics, 2021, 36, 4791-4801.	7.9	17
22	Discontinuous-PWM Method for Multilevel N^2 -Cell Cascaded H-Bridge Converters. IEEE Transactions on Industrial Electronics, 2021, 68, 7996-8005.	7.9	14
23	Electric Vehicle Charging Infrastructure: From Grid to Battery. IEEE Industrial Electronics Magazine, 2021, 15, 37-51.	2.6	130
24	Common-Mode Voltage Mitigation of Dual Three-Phase Voltage Source Inverters in a Motor Drive Application. IEEE Access, 2021, 9, 67477-67487.	4.2	16
25	Common-Mode Voltage Mitigation Technique in Motor Drive Applications by Applying a Sampling-Time Adaptive Multi-Carrier PWM Method. IEEE Access, 2021, 9, 56115-56126.	4.2	10
26	Feed-forward Modulation Technique for more Accurate Operation of Modular Multilevel Converters. IEEE Transactions on Power Electronics, 2021, , 1-1.	7.9	7
27	Microgrids Power Quality Enhancement Using Model Predictive Control. Electronics (Switzerland), 2021, 10, 328.	3.1	13
28	Common-Mode Voltage Harmonic Reduction in Variable Speed Drives Applying a Variable-Angle Carrier Phase-Displacement PWM Method. Energies, 2021, 14, 2929.	3.1	0
29	Model Predictive Control of Modular Multilevel Converters Using Quadratic Programming. IEEE Transactions on Power Electronics, 2021, 36, 7012-7025.	7.9	24
30	Binary Search Based Flexible Power Point Tracking Algorithm for Photovoltaic Systems. IEEE Transactions on Industrial Electronics, 2021, 68, 5909-5920.	7.9	39
31	Variable-Angle PS-PWM Technique for Multilevel Cascaded H-Bridge Converters With Large Number of Power Cells. IEEE Transactions on Industrial Electronics, 2021, 68, 6773-6783.	7.9	28
32	Optimal Switching Sequence Model Predictive Control for Single-Phase Cascaded H-Bridge. , 2021, , .		5
33	Sampling-Time Harmonic Control for Cascaded H-Bridge Converters With Thermal Control. IEEE Transactions on Industrial Electronics, 2020, 67, 2776-2785.	7.9	19
34	DC-Link Voltage-Balancing Strategy Based on Optimal Switching Sequence Model Predictive Control for Single-Phase H-NPC Converters. IEEE Transactions on Industrial Electronics, 2020, 67, 7410-7420.	7.9	82
35	High-Performance Second-Order Sliding Mode Control for NPC Converters. IEEE Transactions on Industrial Informatics, 2020, 16, 5345-5356.	11.3	31
36	Generalized Harmonic Control for CHB Converters With Unbalanced Cells Operation. IEEE Transactions on Industrial Electronics, 2020, 67, 9039-9047.	7.9	29

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37	Advanced Control Strategies for DCâ€“DC Buck Converters With Parametric Uncertainties via Experimental Evaluation. IEEE Transactions on Circuits and Systems I: Regular Papers, 2020, 67, 5257-5267.	5.4	38
38	FCS Model Predictive Torque Control with Switching Period Tracking for EV Powertrains. , 2020, , .		0
39	FCS-MPC and Observer Design in the dq Synchronous Frame: An Experimental Validation. , 2020, , .		3
40	Power Devices Aging Equalization of Interleaved DCâ€“DC Boost Converters via Power Routing. IEEE Journal of Emerging and Selected Topics in Industrial Electronics, 2020, 1, 91-101.	3.9	10
41	Efficient FPSoC Prototyping of FCS-MPC for Three-Phase Voltage Source Inverters. Energies, 2020, 13, 1074.	3.1	13
42	Closed-Loop Analytic Filtering Scheme of Capacitor Voltage Ripple in Multilevel Cascaded H-Bridge Converters. IEEE Transactions on Power Electronics, 2020, 35, 8819-8832.	7.9	21
43	Integral Sliding-Mode Control-Based Direct Power Control for Three-Level NPC Converters. Energies, 2020, 13, 227.	3.1	12
44	Real-Time Selective Harmonic Mitigation Technique for Power Converters Based on the Exchange Market Algorithm. Energies, 2020, 13, 1659.	3.1	8
45	A High-Gain Observer-Based Adaptive Super-Twisting Algorithm for DC-Link Voltage Control of NPC Converters. Energies, 2020, 13, 1110.	3.1	5
46	FS-MPC Method for MMCs with Large Number of Submodules with Reduced Computational Cost. , 2020, , .		4
47	Power Quality Management of Interconnected Microgrids using Model Predictive Control. IFAC-PapersOnLine, 2020, 53, 12918-12923.	0.9	2
48	Observer-Based Adaptive Sliding Mode Control of NPC Converters: An RBF Neural Network Approach. IEEE Transactions on Power Electronics, 2019, 34, 3831-3841.	7.9	122
49	An Algorithm for Fast Flexible Power Point Tracking in Photovoltaic Power Plants. , 2019, , .		17
50	High-quality Output Voltage of Multilevel Cascaded H-bridge Converters with Large Number of Cells with Unequal DC Voltages. , 2019, , .		3
51	Cost-effective Design of Modular Multilevel Converter Employing Full-bridge Submodules. , 2019, , .		1
52	Finite Control Set Model Predictive Control with an Output Current Observer in the dq-Synchronous Reference Frame for an Uninterruptible Power Supply System. , 2019, , .		4
53	A Generalized Voltage Balancing Algorithm for Modular Multilevel Cascaded Converters. , 2019, , .		1
54	Adaptive Sliding Mode Observer Design for Three-Phase Grid Voltage Parameters Under Unbalanced Faults. , 2019, , .		0

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55	Sliding Mode Control of a Three-Phase AC/DC Voltage Source Converter Under Unknown Load Conditions: Industry Applications. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2018, 48, 1771-1780.	9.3	94
56	Modeling, Control, and Integration of Energy Storage Systems in E-Transportation and Smart Grid. IEEE Transactions on Industrial Electronics, 2018, 65, 6548-6551.	7.9	21
57	Multistep Model Predictive Control for Cascaded H-Bridge Inverters: Formulation and Analysis. IEEE Transactions on Power Electronics, 2018, 33, 876-886.	7.9	107
58	Adaptive Filtering Scheme for a Low-Capacitance StatCom. , 2018, , .		9
59	Generating the Arm Voltage References of Modular Multilevel Converters Employing Predictive Technique. , 2018, , .		1
60	Flexible Harmonic Control for Three-Level Selective Harmonic Modulation Using the Exchange Market Algorithm. , 2018, , .		5
61	Backstepping Control of a DC-DC Boost Converters Under Unknown Disturbances. , 2018, , .		4
62	Power Device Lifetime Extension of Dc-Dc Interleaved Converters via Power Routing. , 2018, , .		7
63	Basic Control Principles in Power Electronics. , 2018, , 31-68.		15
64	Improving the operation of the modular multilevel converters with model predictive control. , 2018, , .		1
65	Closed-loop active thermal control via power routing of parallel DC-DC converters. , 2018, , .		7
66	Variable-Angle Phase-Shifted PWM for Multilevel Three-Cell Cascaded H-Bridge Converters. IEEE Transactions on Industrial Electronics, 2017, 64, 3619-3628.	7.9	84
67	FCS-MPC and observer design for a VSI with output LC filter and sinusoidal output currents. , 2017, , .		24
68	Sliding mode control of three-phase power converters with disturbance attenuation performance. , 2017, , .		3
69	Adaptive phase-shifted PWM for multilevel cascaded H-bridge converters with large number of power cells. , 2017, , .		14
70	Multilevel Converters: Control and Modulation Techniques for Their Operation and Industrial Applications. Proceedings of the IEEE, 2017, 105, 2066-2081.	21.3	328
71	Model Predictive Control for Power Converters and Drives: Advances and Trends. IEEE Transactions on Industrial Electronics, 2017, 64, 935-947.	7.9	1,305
72	Extended State Observer-Based Sliding-Mode Control for Three-Phase Power Converters. IEEE Transactions on Industrial Electronics, 2017, 64, 22-31.	7.9	426

#	ARTICLE	IF	CITATIONS
73	Operation of an hybrid PV-battery system with improved harmonic performance. , 2017, , .		13
74	Disturbance observer based second order sliding mode control for DC-DC buck converters. , 2017, , .		11
75	Power electronic converters and control techniques in AC microgrids. , 2017, , .		16
76	A simple model predictive control strategy aiming at enhancing the performance of modular multilevel converters. , 2017, , .		1
77	A comprehensive comparison of modulation methods for MMC converters. , 2017, , .		11
78	Second-order sliding mode control of power converters using different disturbance observers for DC-link voltage regulation. , 2017, , .		8
79	A Review of Power Electronics for Grid Connection of Utility-Scale Battery Energy Storage Systems. IEEE Transactions on Sustainable Energy, 2016, 7, 1778-1790.	8.8	271
80	Variable-angle interleaved DC-DC converters. , 2016, , .		4
81	Predictive Control in Power Converters and Electrical Drivesâ€™Part I. IEEE Transactions on Industrial Electronics, 2016, 63, 3834-3836.	7.9	16
82	Model Predictive Control for Single-Phase NPC Converters Based on Optimal Switching Sequences. IEEE Transactions on Industrial Electronics, 2016, 63, 7533-7541.	7.9	130
83	Binary search based MPPT algorithm for high-power PV systems. , 2016, , .		9
84	Predictive Control in Power Converters and Electrical Drivesâ€™Part IV. IEEE Transactions on Industrial Electronics, 2016, 63, 5804-5806.	7.9	2
85	Predictive direct power control for grid-connected power converters with an Extended State Observer based dc-link voltage regulator. , 2016, , .		3
86	Predictive Control in Power Converters and Electrical Drives - Part III. IEEE Transactions on Industrial Electronics, 2016, , 1-1.	7.9	5
87	Predictive control in power converters and electrical drivesâ€™part ii [guest editorial]. IEEE Transactions on Industrial Electronics, 2016, 63, 4472-4474.	7.9	9
88	Communications scheme of a modular power conversion system. , 2015, , .		2
89	Adaptive phase-shifted PWM for multilevel cascaded H-bridge converters for balanced or unbalanced operation. , 2015, , .		4
90	A Generalized Predictive control for T-type power inverters with output LC filter. , 2015, , .		6

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91	Predictive direct power control for grid connected power converters with dc-link voltage dynamic reference design. , 2015, , .		9
92	Model predictive control of cascaded H-bridge inverters based on a fast-optimization algorithm. , 2015, , .		14
93	Second Order Sliding Mode control for three-level NPC converters via extended state observer. , 2015, , .		11
94	Flexible and cost effective hybrid energy storage system based on batteries and ultracapacitors. , 2015, , .		0
95	Voltage predictive control for microgrids in islanded mode based on Fourier transform. , 2015, , .		8
96	Robust control for three-phase grid connected power converters via second order sliding mode. , 2015, , .		9
97	Predictive Optimal Switching Sequence Direct Power Control for Grid-Connected Power Converters. IEEE Transactions on Industrial Electronics, 2015, 62, 2010-2020.	7.9	302
98	Advanced control of a multilevel cascaded H-bridge converter for PV applications. , 2014, , .		23
99	Adaptive Vectorial Filter for Grid Synchronization of Power Converters Under Unbalanced and/or Distorted Grid Conditions. IEEE Transactions on Industrial Electronics, 2014, 61, 1355-1367.	7.9	130
100	Model Predictive Control: A Review of Its Applications in Power Electronics. IEEE Industrial Electronics Magazine, 2014, 8, 16-31.	2.6	894
101	Voltage balancing in three-level neutral-point-clamped converters via Luenberger observer. Control Engineering Practice, 2014, 25, 36-44.	5.5	17
102	Generalized Predictive Direct Power Control for AC/DC converters. , 2013, , .		15
103	Model Based Adaptive Direct Power Control for Three-Level NPC Converters. IEEE Transactions on Industrial Informatics, 2013, 9, 1148-1157.	11.3	85
104	Fast Response Energy Storage Systems. Green Energy and Technology, 2013, , 367-427.	0.6	1
105	Design and experimental validation of a Model Predictive Control strategy for a VSI with long prediction horizon. , 2013, , .		24
106	Direct power control of three-phase three-level neutral-point-clamped converters with control input saturation. , 2013, , .		1
107	Simplified Recursive Newton-type Algorithm for Instantaneous Modal Parameter Estimation of Sub-synchronous Oscillations. Electric Power Components and Systems, 2012, 40, 864-880.	1.8	2
108	Educational hardware/software interface for power electronic applications. , 2012, , .		0

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109	Decoupled Double Synchronous Reference Frame current controller for unbalanced grid voltage conditions. , 2012, , .		13
110	Enhanced Decoupled Double Synchronous Reference Frame Current Controller for Unbalanced Grid-Voltage Conditions. IEEE Transactions on Power Electronics, 2012, 27, 3934-3943.	7.9	258
111	A Crankâ€Nicolson Galerkin approach to the analysis of electromechanical oscillations in stressed power systems. Electric Power Systems Research, 2012, 86, 158-169.	3.6	2
112	Novel modulator for the hybrid two-cell flying-capacitor based ANPC converter. , 2011, , .		4
113	Recent advances on Energy Storage Systems. , 2011, , .		27
114	Simple modulator with voltage balancing control for the hybrid five-level flying-capacitor based ANPC converter. , 2011, , .		17
115	Multidimensional Modulation Technique for Cascaded Multilevel Converters. IEEE Transactions on Industrial Electronics, 2011, 58, 412-420.	7.9	110
116	Model predictive control of a VSI with long prediction horizon. , 2011, , .		32
117	Voltages balance control in three phase three-level NPC rectifiers. , 2010, , .		15
118	A voltage measurement based control of a SSSC. , 2010, , .		0
119	Predictive control of a three-phase UPS inverter using two steps prediction horizon. , 2010, , .		90
120	Two-dimensional modulation technique with dc voltage control for single-phase two-cell cascaded converters. , 2010, , .		13
121	Multilevel Multiphase Feedforward Space-Vector Modulation Technique. IEEE Transactions on Industrial Electronics, 2010, 57, 2066-2075.	7.9	31
122	Conventional Space-Vector Modulation Techniques Versus the Single-Phase Modulator for Multilevel Converters. IEEE Transactions on Industrial Electronics, 2010, 57, 2473-2482.	7.9	95
123	Analysis of the Power Balance in the Cells of a Multilevel Cascaded H-Bridge Converter. IEEE Transactions on Industrial Electronics, 2010, 57, 2287-2296.	7.9	115
124	Energy Storage Systems for Transport and Grid Applications. IEEE Transactions on Industrial Electronics, 2010, 57, 3881-3895.	7.9	1,054
125	Model Predictive Control of a switched reluctance machine using discrete Space Vector Modulation. , 2010, , .		24
126	Comparison between FS-MPC control strategy for an UPS inverter application in α-β and abc frames. , 2010, , .		11

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127	Educational software interface for power electronic applications. , 2010, , .		0
128	Analysis of nonlinear modal interaction in stressed power systems using POD-Galerkin characterization. , 2009, , .		2
129	Observer-based Direct Power Control for three-level NPC rectifiers. , 2009, , .		6
130	Two-dimensional modulation technique for multilevel cascaded H-bridge converters. , 2009, , .		4
131	DC-Voltage-Ratio Control Strategy for Multilevel Cascaded Converters Fed With a Single DC Source. IEEE Transactions on Industrial Electronics, 2009, 56, 2513-2521.	7.9	125
132	Model Predictive Control with constant switching frequency using a Discrete Space Vector Modulation with virtual state vectors. , 2009, , .		137
133	Feed-Forward Space Vector Modulation for Single-Phase Multilevel Cascaded Converters With Any DC Voltage Ratio. IEEE Transactions on Industrial Electronics, 2009, 56, 315-325.	7.9	122
134	Direct Power Control for three-phase power converters under distorted input voltages. , 2009, , .		6
135	Incorporation of hard excitation limits into power system normal form analysis. , 2009, , .		2
136	POD-Galerkin characterization of inter-area oscillations in power systems. , 2009, , .		1
137	Guidelines for weighting factors design in Model Predictive Control of power converters and drives. , 2009, , .		490
138	Three-Dimensional Feedforward Space Vector Modulation Applied to Multilevel Diode-Clamped Converters. IEEE Transactions on Industrial Electronics, 2009, 56, 101-109.	7.9	76
139	Model Predictive Control of an Inverter With Output LC Filter for UPS Applications. IEEE Transactions on Industrial Electronics, 2009, 56, 1875-1883.	7.9	552
140	Unidimensional Modulation Technique for Cascaded Multilevel Converters. IEEE Transactions on Industrial Electronics, 2009, 56, 2981-2986.	7.9	54
141	A dual-loop PI controller for a DC/DC full-bridge power converter with ZVS modulation. , 2009, , .		9
142	A simple and low cost modulation technique for single-phase multilevel cascade converters based on geometrical considerations. , 2008, , .		3
143	A Model-Based Direct Power Control for Three-Phase Power Converters. IEEE Transactions on Industrial Electronics, 2008, 55, 1647-1657.	7.9	168
144	Simple Unified Approach to Develop a Time-Domain Modulation Strategy for Single-Phase Multilevel Converters. IEEE Transactions on Industrial Electronics, 2008, 55, 3239-3248.	7.9	89

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145	Controller design for a single-phase two-cell multilevel cascade H-bridge converter. , 2008, , .		18
146	Space vector modulation for multilevel single-phase cascade converters avoiding the negative effects of the DC voltage unbalance. , 2008, , .		2
147	Stationary frame voltage harmonic controller for standalone power generation. , 2007, , .		22
148	New Space Vector Modulation Technique for Single-Phase Multilevel Converters. , 2007, , .		21
149	Digital Implementation Issues for a Three-Phase Power Converter Development Using a Repetitive Control Scheme. , 2007, , .		6
150	Optimized Direct Power Control Strategy using Output Regulation Subspaces and Pulse Width Modulation. Industrial Electronics Society (IECON), Annual Conference of IEEE, 2006, , .	0.0	12
151	Simple Control Algorithm to Balance the DC-Link Voltage in Multilevel Four-Leg Four-Wire Diode Clamped Converters. , 2006, , .		3
152	Simple Control Algorithm to Balance the DC-Link Voltage in Multilevel Four-Leg Four-Wire Diode Clamped Converters. , 2006, , .		2
153	Improving Multilevel Flying Capacitor Converters Features Using New Voltage Ratios Definitions. , 0, , .		5