

Fred Wang

List of Publications by Year in descending order

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154
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3,130
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154
docs citations

154
times ranked

2250
citing authors

#	ARTICLE	IF	CITATIONS
1	High-Bandwidth Combinational Rogowski Coil for SiC MOSFET Power Module. IEEE Transactions on Power Electronics, 2022, 37, 4397-4405.	7.9	17
2	Comprehensive Analysis and Improvement Methods of Noise Immunity of Desat Protection for High Voltage SiC MOSFETs With High DV/DT. IEEE Open Journal of Power Electronics, 2022, 3, 36-50.	5.7	11
3	Development of High-Power Bidirectional DC Solid-State Power Controller for Aircraft Applications. IEEE Journal of Emerging and Selected Topics in Power Electronics, 2022, 10, 5498-5508.	5.4	12
4	10 kV SiC MOSFET Based Medium Voltage Power Conditioning System for Asynchronous Microgrids. IEEE Access, 2022, 10, 73294-73308.	4.2	5
5	Modular Multilevel Converter (MMC) Modeling Considering Submodule Voltage Sensor Noise. IEEE Transactions on Power Electronics, 2021, 36, 1215-1219.	7.9	11
6	High-Bandwidth Low-Inductance Current Shunt for Wide-Bandgap Devices Dynamic Characterization. IEEE Transactions on Power Electronics, 2021, 36, 4522-4531.	7.9	30
7	Primary Frequency Control Using Motor Drives for Short Term Grid Disturbances. IEEE Open Journal of Industry Applications, 2021, 2, 1-10.	6.5	8
8	Variable Speed Drive Connected Motor Load Emulator for a Multi-Converter-Based Hardware Testbed System. IEEE Open Journal of Industry Applications, 2021, 2, 337-346.	6.5	4
9	Online Junction Temperature Monitoring for SiC MOSFETs Using Turn-On Delay Time. , 2020, , .		10
10	Modeling and Analysis of Zero Common-mode Voltage Modulation with Dead-Time for Three-Level Inverter. , 2020, , .		2
11	Current Jump Mechanism and Suppression in Paralleled Three-level Inverters with Space Vector Modulation. , 2020, , .		0
12	A Power Converter Based Real-time Air-conditioner Motor Emulator. , 2020, , .		4
13	Controller Development of an Asynchronous Microgrid Power Conditioning System (PCS) Converter Considering Grid Requirements. , 2020, , .		9
14	Reconfigurable Real-Time Power Grid Emulator for Systems With High Penetration of Renewables. IEEE Open Access Journal of Power and Energy, 2020, 7, 489-500.	3.4	26
15	A Novel Voltage Balancing Control With $\langle i \rangle dv/dt \langle /i \rangle$ Reduction for 10-kV SiC MOSFET-Based Medium Voltage Modular Multilevel Converter. IEEE Transactions on Power Electronics, 2020, 35, 12533-12543.	7.9	24
16	Leakage Inductance Estimation of Toroidal Common-mode Choke from Perspective of Analogy between Reluctances and Capacitances. , 2020, , .		3
17	Stability Analysis and Controller Design of MMC Considering Control Delay. , 2020, , .		2
18	Impedance-based Common-mode Inductor Design Approach Considering Frequency-dependent and Imaginary Permeability. , 2020, , .		2

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19	Impact of Submodule Voltage Sensor Noise in 10 kV SiC MOSFET Modular Multilevel Converters (MMCs) under High dv/dt Environment. , 2020, , .		9
20	Power Emulator of Variable Speed Drive with Grid Frequency Support in Multi-Converter Based Power Grid Emulation System. , 2020, , .		3
21	A Single Gate Driver Based Solid-State Circuit Breaker Using Series Connected SiC MOSFETs. IEEE Transactions on Power Electronics, 2019, 34, 2002-2006.	7.9	54
22	Adaptive Impedance Compensation of Inverters for Stable Grid Integration Based on Online Resonance Detection. , 2019, , .		8
23	Converter-Based Emulation of Battery Energy Storage Systems (BESS) for Grid Applications. IEEE Transactions on Industry Applications, 2019, 55, 4020-4032.	4.9	29
24	Data-driven Leakage Inductance Modeling of Common Mode Chokes. , 2019, , .		8
25	Development of a Converter Based Microgrid Test Platform. , 2019, , .		9
26	Design of Low Inductance Busbar for 500 kVA Three-Level ANPC Converter. , 2019, , .		13
27	Resolving Loss Discrepancy between Calculation and Measurement in a 4.5 kW GaN-based Inverter. , 2019, , .		3
28	Harmonic Analysis of Common-mode Reduction Modulation for Three-level Inverter. , 2019, , .		2
29	DC Impedance Model of MMC Considering Capacitor Voltage and Circulating Current Dynamics. , 2019, , .		7
30	Current-bias Dependent Permeability of Powder and Amorphous Core Induced Unbalanced DM Impedance and Mixed-mode Noise. , 2019, , .		3
31	Medium Voltage (13.8 kV) Transformer-less Grid-Connected DC/AC Converter Design and Demonstration Using 10 kV SiC MOSFETs. , 2019, , .		21
32	Hierarchical control system for a flexible microgrid with dynamic boundary: design, implementation and testing. IET Smart Grid, 2019, 2, 669-676.	2.2	6
33	Online condition monitoring based dead-time compensation for high frequency SiC voltage source inverter. , 2018, , .		5
34	A sampling scheme for three-phase high switching frequency and speed converter. , 2018, , .		2
35	Common-mode inductor saturation analysis and design optimization based on spectrum concept. , 2018, , .		2
36	Common-mode noise reduction with impedance balancing in DC-fed motor drives. , 2018, , .		5

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37	Short circuit characterization of 3 rd generation 10 kV SiC MOSFET. , 2018, , .		15
38	Battery and backup generator sizing for a resilient microgrid under stochastic extreme events. IET Generation, Transmission and Distribution, 2018, 12, 4443-4450.	2.5	44
39	Common source inductance introduced self-turn-on in MOSFET turn-off transient. , 2017, , .		34
40	Battery energy storage emulation in a converter-based power system emulator. , 2017, , .		10
41	Analysis of the dv/dt transient of enhancement-mode GaN FETs. , 2017, , .		21
42	Protection and temperature-dependent switching characterization of latest generation 10 kV SiC MOSFETs. , 2017, , .		10
43	Development, Demonstration, and Control of a Testbed for Multiterminal HVDC System. IEEE Transactions on Power Electronics, 2017, 32, 6069-6078.	7.9	26
44	Steady-State Modeling of Modular Multilevel Converter Under Unbalanced Grid Conditions. IEEE Transactions on Power Electronics, 2017, 32, 7306-7324.	7.9	55
45	Overview of high voltage sic power semiconductor devices: development and application. CES Transactions on Electrical Machines and Systems, 2017, 1, 254-264.	3.5	133
46	Dead-time optimization for SiC based voltage source converters using online condition monitoring. , 2017, , .		10
47	A fast overcurrent protection scheme for GaN GITs. , 2017, , .		23
48	Maximizing the voltage and current capability of GaN FETs in a hard-switching converter. , 2017, , .		13
49	Design consideration of converter based transmission line emulation. , 2016, , .		9
50	Online junction temperature monitoring using turn-off delay time for silicon carbide power devices. , 2016, , .		16
51	Cascaded droop control for dc overvoltage suppression in a multi-terminal HVDC system under onshore side AC faults. , 2016, , .		1
52	A compensation scheme to reduce input current distortion in a GaN based 450 kHz three-phase Vienna type PFC. , 2016, , .		7
53	Dc fault protection of multi-terminal VSC-HVDC system with hybrid dc circuit breaker. , 2016, , .		20
54	Online condition monitoring of SiC devices using intelligent gate drive for converter performance improvement. , 2016, , .		9

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55	Integrated DC-DC converter design for Electric Vehicle powertrains. , 2016, , .		19
56	Steady-state analysis of modular multilevel converter (MMC) under unbalanced grid conditions. , 2016, , .		2
57	Parasitic inductance extraction and verification for 3D Planar Bond All Module. , 2016, , .		20
58	Active voltage balancing control for multi HV-IGBTs in series connection. , 2016, , .		2
59	Soft switching for half bridge current doubler for high voltage point of load converter in data center power supplies. , 2016, , .		5
60	Temperature-dependent turn-on loss analysis for GaN HFETs. , 2016, , .		30
61	Voltage closed-loop virtual synchronous generator control of full converter wind turbine for grid-connected and stand-alone operation. , 2016, , .		8
62	Active voltage balancing control for 10kV three-level converter using series-connected HV-IGBTs. , 2016, , .		7
63	Development of a hybrid emulation platform based on RTDS and reconfigurable power converter-based testbed. , 2016, , .		11
64	Decoupling of interaction between WBG converter and motor load for switching performance improvement. , 2016, , .		9
65	Hardware implementation of a four-terminal HVDC test-bed. , 2015, , .		5
66	Cross conduction analysis for enhancement-mode 650-V GaN HFETs in a phase-leg topology. , 2015, , .		46
67	Realization of high speed switching of SiC power devices in voltage source converters. , 2015, , .		6
68	Reliability-oriented design of gate driver for SiC devices in voltage source converter. , 2015, , .		7
69	Short circuit fault emulation by shunt connected voltage source converter. , 2015, , .		12
70	A DC controller for continuous variable series reactors (CVSRs). , 2015, , .		4
71	Startup schemes for modular multilevel converter under different load conditions. , 2015, , .		3
72	Dead-time optimization of SiC devices for voltage source converter. , 2015, , .		19

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73	Influence of voltage feed-forward control on small-signal stability of grid-tied inverters. , 2015, , .		7
74	Sequence impedance measurement of three-phase inverters using a parallel structure. , 2015, , .		17
75	Active gate driver for fast switching and cross-talk suppression of SiC devices in a phase-leg configuration. , 2015, , .		41
76	Characterization of an enhancement-mode 650-V GaN HFET. , 2015, , .		82
77	A Novel Filter Topology With Active Motor CM Impedance Regulator in PWM ASD System. IEEE Transactions on Industrial Electronics, 2014, 61, 6938-6946.	7.9	41
78	Investigation of soft-switching behavior of 600 V cascode GaN HEMT. , 2014, , .		7
79	Application-based review of GaN HFETs. , 2014, , .		113
80	A high temperature silicon carbide MOSFET power module with integrated silicon-on-insulator based gate drive. , 2014, , .		4
81	Wide bandgap power devices based high efficiency power converters for data center application. , 2014, , .		14
82	Power Module and Cooling System Thermal Performance Evaluation for HEV Application. IEEE Journal of Emerging and Selected Topics in Power Electronics, 2014, 2, 487-495.	5.4	81
83	Understanding the limitations and impact factors of wide bandgap devices' high switching-speed capability in a voltage source converter. , 2014, , .		28
84	A line impedance conditioner to improve zigzag transformer based hybrid Ac/Dc transmission under unbalanced line impedance conditions. , 2014, , .		4
85	Evaluation of switching performance of SiC devices in PWM inverter fed induction motor drives. , 2014, , .		10
86	DC impedance modelling of a MMC-HVDC system for DC voltage ripple prediction under a single-line-to-ground fault. , 2014, , .		22
87	Maximum modulation index for modular multilevel converter with circulating current control. , 2014, , .		11
88	Development of converter based reconfigurable power grid emulator. , 2014, , .		37
89	A compact planar Rogowski coil current sensor for active current balancing of parallel-connected Silicon Carbide MOSFETs. , 2014, , .		62
90	A Phase-Leg Power Module Packaged With Optimized Planar Interconnections and Integrated Double-Sided Cooling. IEEE Journal of Emerging and Selected Topics in Power Electronics, 2014, 2, 443-450.	5.4	50

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91	Overvoltage protection scheme for three-phase current source converter built with SiC MOSFETs. , 2014, , .		10
92	High efficiency data center power supply using wide band gap power devices. , 2014, , .		15
93	Direct 400 V to 1 V converter for data center power supplies using GaN FETs. , 2014, , .		16
94	Active compensation of current unbalance in paralleled silicon carbide MOSFETs. , 2014, , .		42
95	High efficiency paralleled three-phase current source front-end rectifiers for data center power supplies with current balancing and hot-swap. , 2014, , .		1
96	Virtual series impedance emulation control for remote PV or wind farms. , 2014, , .		9
97	Feasibility study and design of hybrid AC/DC high power transmission considering unbalanced line impedances. , 2014, , .		12
98	Impact of ringing on switching losses of wide band-gap devices in a phase-leg configuration. , 2014, , .		31
99	Methodology for switching characterization evaluation of wide band-gap devices in a phase-leg configuration. , 2014, , .		68
100	A 10-MHz resonant gate driver design for LLC resonant DC-DC converters using GaN devices. , 2014, , .		13
101	Switching-frequency ripple on DC link voltage in a modular multilevel converter with circulating current suppressing control. , 2014, , .		6
102	Analysis of the relationship between switching frequency and sub-module capacitor unbalanced voltage for a modular multilevel converter. , 2014, , .		3
103	Active Gate Driver for Crosstalk Suppression of SiC Devices in a Phase-Leg Configuration. IEEE Transactions on Power Electronics, 2014, 29, 1986-1997.	7.9	215
104	Arm inductance selection principle for modular multilevel converters with circulating current suppressing control. , 2013, , .		37
105	A study of motor-end EMI filter on output common-mode noise suppression in DC-fed motor drive system. , 2013, , .		5
106	Variable switching frequency PWM strategy for inverter switching loss and system noise reduction in electric/hybrid vehicle motor drives. , 2013, , .		16
107	SiC based current source rectifier paralleling and circulating current suppression. , 2013, , .		9
108	Two-stage PV inverter system emulator in converter based power grid emulation system. , 2013, , .		35

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109	Evaluation of 600 V cascode GaN HEMT in device characterization and all-GaN-based LLC resonant converter. , 2013, , .		69
110	Impact of planar transformer winding capacitance on Si-based and GaN-based LLC resonant converter. , 2013, , .		18
111	Design and performance evaluation of overcurrent protection schemes for silicon carbide (SiC) power MOSFETs. , 2013, , .		20
112	A comparison of phase disposition and phase shift PWM strategies for modular multilevel converters. , 2013, , .		48
113	Automatic resonant frequency tracking in unregulated LLC resonant converters based on total resonant current harmonic calculation. , 2013, , .		22
114	Active current balancing for parallel-connected silicon carbide MOSFETs. , 2013, , .		81
115	Modeling and control of an LCL filter based three-phase active rectifier in grid emulator. , 2013, , .		13
116	Modular multilevel converters with integrated arm inductors for high quality current waveforms. , 2013, , .		21
117	Mixed-mode EMI noise in three-phase DC-fed PWM motor drive system. , 2013, , .		12
118	Power converter-based three-phase induction motor load emulator. , 2013, , .		42
119	A gate assist circuit for cross talk suppression of SiC devices in a phase-leg configuration. , 2013, , .		14
120	Stability analysis of inverter based generator emulator in test-bed for power systems. , 2013, , .		13
121	Hardware implementation and control design of generator emulator in multi-converter system. , 2013, , .		27
122	Control of three-phase buck-type rectifier in discontinuous current mode. , 2013, , .		8
123	Circulating current control and reduction in a paralleled converter test-bed system. , 2013, , .		10
124	Development of a 30 kW Si IGBT based three-phase converter for operation at 200 °C with high temperature coolant in hybrid electric vehicle applications. , 2013, , .		2
125	Analysis and control of DC voltage ripple for modular multilevel converters under single line to ground fault. , 2013, , .		3
126	Compensation of input current distortion in three-phase buck rectifiers. , 2013, , .		21

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127	A novel gate assist circuit for cross talk mitigation of SiC power devices in a phase-leg configuration. , 2013, , .		7
128	DC-link current control scheme for paralleled three-phase current source rectifiers in high efficiency power supply system. , 2013, , .		1
129	Modeling and design of common-mode inductor for conductive EMI noise suppression in DC-fed motor drive system. , 2012, , .		4
130	Evaluation and comparison of silicon and gallium nitride power transistors in LLC resonant converter. , 2012, , .		59
131	Modulation scheme analysis for high efficiency three-phase buck rectifier considering different device combinations. , 2012, , .		8
132	Si IGBT phase-leg module packaging and cooling design for operation at 200 °C in hybrid electrical vehicle applications. , 2012, , .		9
133	Junction temperature measurement of IGBTs using short circuit current. , 2012, , .		18
134	Design and performance of an all-SiC three-phase buck rectifier for high efficiency data center power supplies. , 2012, , .		18
135	Filter design oriented EMI prediction model for DC-fed motor drive system using double fourier integral transformation method. , 2012, , .		10
136	Design of output passive EMI filter in DC-fed motor drive. , 2012, , .		17
137	Evaluation of SiC MOSFETs for a high efficiency three-phase buck rectifier. , 2012, , .		35
138	Characterization of a high temperature multichip SiC JFET-based module. , 2011, , .		30
139	P-cell and N-cell based IGBT module: Layout design, parasitic extraction, and experimental verification. , 2011, , .		32
140	High-Temperature SiC Power Module Electrical Evaluation Procedure. IEEE Transactions on Power Electronics, 2011, 26, 3079-3083.	7.9	42
141	Single-phase inverter design for V2G reactive power compensation. , 2011, , .		25
142	250°C SiC high density power module development. , 2011, , .		6
143	Unified control for the permanent magnet generator and rectifier system. , 2011, , .		4
144	High temperature packaging of 50 kW three-phase SiC power module. , 2011, , .		23

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145	High density Modular Multilevel Cascade Converter for medium-voltage motor drive. , 2011, , .		6
146	Evaluation of SiC devices in converter phase-leg at high temperature. , 2011, , .		1
147	Investigation of Si IGBT operation at 200 °C for traction application. , 2011, , .		15
148	Automatic layout design for power module. , 2010, , .		4
149	Study of conducted EMI reduction for three-phase Vienna-type rectifier. , 2010, , .		2
150	An improved design for transmission line busbar EMI filter. , 2010, , .		3
151	Single-phase vs. three-phase high density power transformers. , 2010, , .		11
152	Common mode voltage in DC-fed motor drive system and its impact on the EMI filter. , 2010, , .		8
153	An Integrated EMI Choke for Differential-Mode and Common-Mode Noise Suppression. IEEE Transactions on Power Electronics, 2010, 25, 539-544.	7.9	68
154	Start-up transient improvement for sensorless control approach of PM motor. , 2010, , .		6