

# Fred Wang

## List of Publications by Year in descending order

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154  
papers

3,130  
citations

516710

16  
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642732

23  
g-index

154  
all docs

154  
docs citations

154  
times ranked

2250  
citing authors

#	ARTICLE	IF	CITATIONS
1	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
2	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
3	Application-based review of GaN HFETs. , 2014, , .		113
4	Characterization of an enhancement-mode 650-V GaN HFET. , 2015, , .		82
5	Active current balancing for parallel-connected silicon carbide MOSFETs. , 2013, , .		81
6	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
7	Evaluation of 600 V cascode GaN HEMT in device characterization and all-GaN-based LLC resonant converter. , 2013, , .		69
8	An Integrated EMI Choke for Differential-Mode and Common-Mode Noise Suppression. IEEE Transactions on Power Electronics, 2010, 25, 539-544.	7.9	68
9	Methodology for switching characterization evaluation of wide band-gap devices in a phase-leg configuration. , 2014, , .		68
10	A compact planar Rogowski coil current sensor for active current balancing of parallel-connected Silicon Carbide MOSFETs. , 2014, , .		62
11	Evaluation and comparison of silicon and gallium nitride power transistors in LLC resonant converter. , 2012, , .		59
12	Steady-State Modeling of Modular Multilevel Converter Under Unbalanced Grid Conditions. IEEE Transactions on Power Electronics, 2017, 32, 7306-7324.	7.9	55
13	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
14	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
15	A comparison of phase disposition and phase shift PWM strategies for modular multilevel converters. , 2013, , .		48
16	Cross conduction analysis for enhancement-mode 650-V GaN HFETs in a phase-leg topology. , 2015, , .		46
17	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
18	High-Temperature SiC Power Module Electrical Evaluation Procedure. IEEE Transactions on Power Electronics, 2011, 26, 3079-3083.	7.9	42

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19	Power converter-based three-phase induction motor load emulator. , 2013, , .		42
20	Active compensation of current unbalance in paralleled silicon carbide MOSFETs. , 2014, , .		42
21	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
22	Active gate driver for fast switching and cross-talk suppression of SiC devices in a phase-leg configuration. , 2015, , .		41
23	Arm inductance selection principle for modular multilevel converters with circulating current suppressing control. , 2013, , .		37
24	Development of converter based reconfigurable power grid emulator. , 2014, , .		37
25	Evaluation of SiC MOSFETs for a high efficiency three-phase buck rectifier. , 2012, , .		35
26	Two-stage PV inverter system emulator in converter based power grid emulation system. , 2013, , .		35
27	Common source inductance introduced self-turn-on in MOSFET turn-off transient. , 2017, , .		34
28	P-cell and N-cell based IGBT module: Layout design, parasitic extraction, and experimental verification. , 2011, , .		32
29	Impact of ringing on switching losses of wide band-gap devices in a phase-leg configuration. , 2014, , .		31
30	Characterization of a high temperature multichip SiC JFET-based module. , 2011, , .		30
31	Temperature-dependent turn-on loss analysis for GaN HFETs. , 2016, , .		30
32	High-Bandwidth Low-Inductance Current Shunt for Wide-Bandgap Devices Dynamic Characterization. IEEE Transactions on Power Electronics, 2021, 36, 4522-4531.	7.9	30
33	Converter-Based Emulation of Battery Energy Storage Systems (BESS) for Grid Applications. IEEE Transactions on Industry Applications, 2019, 55, 4020-4032.	4.9	29
34	Understanding the limitations and impact factors of wide bandgap devices' high switching-speed capability in a voltage source converter. , 2014, , .		28
35	Hardware implementation and control design of generator emulator in multi-converter system. , 2013, , .		27
36	Development, Demonstration, and Control of a Testbed for Multiterminal HVDC System. IEEE Transactions on Power Electronics, 2017, 32, 6069-6078.	7.9	26

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37	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
38	Single-phase inverter design for V2G reactive power compensation. , 2011, , .		25
39	A Novel Voltage Balancing Control With $\frac{dv}{dt}$ Reduction for 10-kV SiC MOSFET-Based Medium Voltage Modular Multilevel Converter. IEEE Transactions on Power Electronics, 2020, 35, 12533-12543.	7.9	24
40	High temperature packaging of 50 kW three-phase SiC power module. , 2011, , .		23
41	A fast overcurrent protection scheme for GaN GITs. , 2017, , .		23
42	Automatic resonant frequency tracking in unregulated LLC resonant converters based on total resonant current harmonic calculation. , 2013, , .		22
43	DC impedance modelling of a MMC-HVDC system for DC voltage ripple prediction under a single-line-to-ground fault. , 2014, , .		22
44	Modular multilevel converters with integrated arm inductors for high quality current waveforms. , 2013, , .		21
45	Compensation of input current distortion in three-phase buck rectifiers. , 2013, , .		21
46	Analysis of the $dv/dt$ transient of enhancement-mode GaN FETs. , 2017, , .		21
47	Medium Voltage (13.8 kV) Transformer-less Grid-Connected DC/AC Converter Design and Demonstration Using 10 kV SiC MOSFETs. , 2019, , .		21
48	Design and performance evaluation of overcurrent protection schemes for silicon carbide (SiC) power MOSFETs. , 2013, , .		20
49	Dc fault protection of multi-terminal VSC-HVDC system with hybrid dc circuit breaker. , 2016, , .		20
50	Parasitic inductance extraction and verification for 3D Planar Bond All Module. , 2016, , .		20
51	Dead-time optimization of SiC devices for voltage source converter. , 2015, , .		19
52	Integrated DC-DC converter design for Electric Vehicle powertrains. , 2016, , .		19
53	Junction temperature measurement of IGBTs using short circuit current. , 2012, , .		18
54	Design and performance of an all-SiC three-phase buck rectifier for high efficiency data center power supplies. , 2012, , .		18

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55	Impact of planar transformer winding capacitance on Si-based and GaN-based LLC resonant converter. , 2013, , .		18
56	Design of output passive EMI filter in DC-fed motor drive. , 2012, , .		17
57	Sequence impedance measurement of three-phase inverters using a parallel structure. , 2015, , .		17
58	High-Bandwidth Combinational Rogowski Coil for SiC MOSFET Power Module. IEEE Transactions on Power Electronics, 2022, 37, 4397-4405.	7.9	17
59	Variable switching frequency PWM strategy for inverter switching loss and system noise reduction in electric/hybrid vehicle motor drives. , 2013, , .		16
60	Direct 400 V to 1 V converter for data center power supplies using GaN FETs. , 2014, , .		16
61	Online junction temperature monitoring using turn-off delay time for silicon carbide power devices. , 2016, , .		16
62	Investigation of Si IGBT operation at 200 °C for traction application. , 2011, , .		15
63	High efficiency data center power supply using wide band gap power devices. , 2014, , .		15
64	Short circuit characterization of 3 <sup>rd</sup> generation 10 kV SiC MOSFET. , 2018, , .		15
65	A gate assist circuit for cross talk suppression of SiC devices in a phase-leg configuration. , 2013, , .		14
66	Wide bandgap power devices based high efficiency power converters for data center application. , 2014, , .		14
67	Modeling and control of an LCL filter based three-phase active rectifier in grid emulator. , 2013, , .		13
68	Stability analysis of inverter based generator emulator in test-bed for power systems. , 2013, , .		13
69	A 10-MHz resonant gate driver design for LLC resonant DC-DC converters using GaN devices. , 2014, , .		13
70	Maximizing the voltage and current capability of GaN FETs in a hard-switching converter. , 2017, , .		13
71	Design of Low Inductance Busbar for 500 kVA Three-Level ANPC Converter. , 2019, , .		13
72	Mixed-mode EMI noise in three-phase DC-fed PWM motor drive system. , 2013, , .		12

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73	Feasibility study and design of hybrid AC/DC high power transmission considering unbalanced line impedances. , 2014, , .		12
74	Short circuit fault emulation by shunt connected voltage source converter. , 2015, , .		12
75	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
76	Single-phase vs. three-phase high density power transformers. , 2010, , .		11
77	Maximum modulation index for modular multilevel converter with circulating current control. , 2014, , .		11
78	Development of a hybrid emulation platform based on RTDS and reconfigurable power converter-based testbed. , 2016, , .		11
79	Modular Multilevel Converter (MMC) Modeling Considering Submodule Voltage Sensor Noise. IEEE Transactions on Power Electronics, 2021, 36, 1215-1219.	7.9	11
80	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
81	Filter design oriented EMI prediction model for DC-fed motor drive system using double fourier integral transformation method. , 2012, , .		10
82	Circulating current control and reduction in a paralleled converter test-bed system. , 2013, , .		10
83	Evaluation of switching performance of SiC devices in PWM inverter fed induction motor drives. , 2014, , .		10
84	Overvoltage protection scheme for three-phase current source converter built with SiC MOSFETs. , 2014, , .		10
85	Battery energy storage emulation in a converter-based power system emulator. , 2017, , .		10
86	Protection and temperature-dependent switching characterization of latest generation 10 kV SiC MOSFETs. , 2017, , .		10
87	Dead-time optimization for SiC based voltage source converters using online condition monitoring. , 2017, , .		10
88	Online Junction Temperature Monitoring for SiC MOSFETs Using Turn-On Delay Time. , 2020, , .		10
89	Si IGBT phase-leg module packaging and cooling design for operation at 200 &#x00B0;C in hybrid electrical vehicle applications. , 2012, , .		9
90	SiC based current source rectifier paralleling and circulating current suppression. , 2013, , .		9

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91	Virtual series impedance emulation control for remote PV or wind farms. , 2014, , .		9
92	Design consideration of converter based transmission line emulation. , 2016, , .		9
93	Online condition monitoring of SiC devices using intelligent gate drive for converter performance improvement. , 2016, , .		9
94	Decoupling of interaction between WBG converter and motor load for switching performance improvement. , 2016, , .		9
95	Development of a Converter Based Microgrid Test Platform. , 2019, , .		9
96	Controller Development of an Asynchronous Microgrid Power Conditioning System (PCS) Converter Considering Grid Requirements. , 2020, , .		9
97	Impact of Submodule Voltage Sensor Noise in 10 kV SiC MOSFET Modular Multilevel Converters (MMCs) under High dv/dt Environment. , 2020, , .		9
98	Common mode voltage in DC-fed motor drive system and its impact on the EMI filter. , 2010, , .		8
99	Modulation scheme analysis for high efficiency three-phase buck rectifier considering different device combinations. , 2012, , .		8
100	Control of three-phase buck-type rectifier in discontinuous current mode. , 2013, , .		8
101	Voltage closed-loop virtual synchronous generator control of full converter wind turbine for grid-connected and stand-alone operation. , 2016, , .		8
102	Adaptive Impedance Compensation of Inverters for Stable Grid Integration Based on Online Resonance Detection. , 2019, , .		8
103	Data-driven Leakage Inductance Modeling of Common Mode Chokes. , 2019, , .		8
104	Primary Frequency Control Using Motor Drives for Short Term Grid Disturbances. IEEE Open Journal of Industry Applications, 2021, 2, 1-10.	6.5	8
105	A novel gate assist circuit for cross talk mitigation of SiC power devices in a phase-leg configuration. , 2013, , .		7
106	Investigation of soft-switching behavior of 600 V cascode GaN HEMT. , 2014, , .		7
107	Reliability-oriented design of gate driver for SiC devices in voltage source converter. , 2015, , .		7
108	Influence of voltage feed-forward control on small-signal stability of grid-tied inverters. , 2015, , .		7

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109	A compensation scheme to reduce input current distortion in a GaN based 450 kHz three-phase Vienna type PFC. , 2016, , .		7
110	Active voltage balancing control for 10kV three-level converter using series-connected HV-IGBTs. , 2016, , .		7
111	DC Impedance Model of MMC Considering Capacitor Voltage and Circulating Current Dynamics. , 2019, , .		7
112	Start-up transient improvement for sensorless control approach of PM motor. , 2010, , .		6
113	250&#x00B0;C SiC high density power module development. , 2011, , .		6
114	High density Modular Multilevel Cascade Converter for medium-voltage motor drive. , 2011, , .		6
115	Switching-frequency ripple on DC link voltage in a modular multilevel converter with circulating current suppressing control. , 2014, , .		6
116	Realization of high speed switching of SiC power devices in voltage source converters. , 2015, , .		6
117	Hierarchical control system for a flexible microgrid with dynamic boundary: design, implementation and testing. IET Smart Grid, 2019, 2, 669-676.	2.2	6
118	A study of motor-end EMI filter on output common-mode noise suppression in DC-fed motor drive system. , 2013, , .		5
119	Hardware implementation of a four-terminal HVDC test-bed. , 2015, , .		5
120	Soft switching for half bridge current doubler for high voltage point of load converter in data center power supplies. , 2016, , .		5
121	Online condition monitoring based dead-time compensation for high frequency SiC voltage source inverter. , 2018, , .		5
122	Common-mode noise reduction with impedance balancing in DC-fed motor drives. , 2018, , .		5
123	10 kV SiC MOSFET Based Medium Voltage Power Conditioning System for Asynchronous Microgrids. IEEE Access, 2022, 10, 73294-73308.	4.2	5
124	Automatic layout design for power module. , 2010, , .		4
125	Unified control for the permanent magnet generator and rectifier system. , 2011, , .		4
126	Modeling and design of common-mode inductor for conductive EMI noise suppression in DC-fed motor drive system. , 2012, , .		4



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127	A high temperature silicon carbide MOSFET power module with integrated silicon-on-insulator based gate drive. , 2014, , .		4
128	A line impedance conditioner to improve zigzag transformer based hybrid Ac/Dc transmission under unbalanced line impedance conditions. , 2014, , .		4
129	A DC controller for continuous variable series reactors (CVSRs). , 2015, , .		4
130	A Power Converter Based Real-time Air-conditioner Motor Emulator. , 2020, , .		4
131	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
132	An improved design for transmission line busbar EMI filter. , 2010, , .		3
133	Analysis and control of DC voltage ripple for modular multilevel converters under single line to ground fault. , 2013, , .		3
134	Analysis of the relationship between switching frequency and sub-module capacitor unbalanced voltage for a modular multilevel converter. , 2014, , .		3
135	Startup schemes for modular multilevel converter under different load conditions. , 2015, , .		3
136	Resolving Loss Discrepancy between Calculation and Measurement in a 4.5 kW GaN-based Inverter. , 2019, , .		3
137	Current-bias Dependent Permeability of Powder and Amorphous Core Induced Unbalanced DM Impedance and Mixed-mode Noise. , 2019, , .		3
138	Leakage Inductance Estimation of Toroidal Common-mode Choke from Perspective of Analogy between Reluctances and Capacitances. , 2020, , .		3
139	Power Emulator of Variable Speed Drive with Grid Frequency Support in Multi-Converter Based Power Grid Emulation System. , 2020, , .		3
140	Study of conducted EMI reduction for three-phase Vienna-type rectifier. , 2010, , .		2
141	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
142	Steady-state analysis of modular multilevel converter (MMC) under unbalanced grid conditions. , 2016, , .		2
143	Active voltage balancing control for multi HV-IGBTs in series connection. , 2016, , .		2
144	A sampling scheme for three-phase high switching frequency and speed converter. , 2018, , .		2

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145	Common-mode inductor saturation analysis and design optimization based on spectrum concept. , 2018, , .		2
146	Harmonic Analysis of Common-mode Reduction Modulation for Three-level Inverter. , 2019, , .		2
147	Modeling and Analysis of Zero Common-mode Voltage Modulation with Dead-Time for Three-Level Inverter. , 2020, , .		2
148	Stability Analysis and Controller Design of MMC Considering Control Delay. , 2020, , .		2
149	Impedance-based Common-mode Inductor Design Approach Considering Frequency-dependent and Imaginary Permeability. , 2020, , .		2
150	Evaluation of SiC devices in converter phase-leg at high temperature. , 2011, , .		1
151	DC-link current control scheme for paralleled three-phase current source rectifiers in high efficiency power supply system. , 2013, , .		1
152	High efficiency paralleled three-phase current source front-end rectifiers for data center power supplies with current balancing and hot-swap. , 2014, , .		1
153	Cascaded droop control for dc overvoltage suppression in a multi-terminal HVDC system under onshore side AC faults. , 2016, , .		1
154	Current Jump Mechanism and Suppression in Paralleled Three-level Inverters with Space Vector Modulation. , 2020, , .		0