Nihal Kularatna

List of Publications by Year
in descending order

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122	1,108	567281	552781
papers	citations	15 h-index	26 g-index

124	124	124	489
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Permeance Based Design and Analysis of Supercapacitor Assisted Surge Absorber for Magnetic Component Selection. IEEE Transactions on Industrial Electronics, 2023, 70, 3593-3603.	7.9	5
2	Supercapacitor-Assisted Low-Dropout Regulator Technique for Low Output Ripple DC-DC Conversion. IEEE Journal of Emerging and Selected Topics in Industrial Electronics, 2022, , 1-1.	3.9	0
3	Maximum Power Point Tracking of an Off-Grid Photovoltaic System Consisting of a Series Connected Supercapacitor with a Step-Down Converter. ECS Transactions, 2022, 107, 16233-16250.	0.5	0
4	Current Context and Research Trends in Linear DCâ€“DC Converters. Applied Sciences (Switzerland), 2022, 12, 4594.	2.5	3
5	Supercapacitor assisted surge absorber technique: high performance transient surge protectors for consumer electronics. IEEE Power Electronics Magazine, 2022, 9, 48-60.	0.7	5
6	Extending the Input Voltage Range of Solar PV Inverters with Supercapacitor Energy Circulation. Electronics (Switzerland), 2021, 10, 88.	3.1	9
7	Supercapacitors for surge absorption: Supercapacitor assisted surge absorber (SCASA) technique. , 2021, , 377-394.		0
8	New developments of larger supercapacitors: Symmetrical devices, hybrid types, and battery-capacitors. , 2021, , 239-249.		1
9	Rechargeable battery technologies: An electronic circuit designerâ€™s viewpoint. , 2021, , 65-98.		1
10	Supercapacitor as a lossless dropper in DC-DC converterâ€”SCALDO technique. , 2021, , 273-310.		0
11	End-to-End Efficiency Improvement Technique for Supercapacitor Energy Stores in Renewable Energy Applications. , 2021, , .		0
12	Supercapacitor assisted surge absorber (SCASA) technique: selection of magnetic components based on permeance. , 2021, , .		6
13	Development of Supercapacitor Technology and Its Potential Impact on New Power Converter Techniques for Renewable Energy. IEEE Journal of Emerging and Selected Topics in Industrial Electronics, 2021, 2, 267-276.	3.9	17
14	Scalable SCALDO Design for 48 V Google Server Racks Powered by 380 V DC-microgrids. , 2021, , .		0
15	Optimization of Supercapacitor Assisted Surge Absorber (SCASA) Technique: A New Approach to Improve Surge Endurance Using Air-Gapped Ferrite Cores. Energies, 2021, 14, 4337.	3.1	8
16	Supercapacitor-Assisted Techniques and Supercapacitor-Assisted Loss Management Concept: New Design Approaches to Change the Roadmap of Power Conversion Systems. Electronics (Switzerland), 2021, 10, 1697.	3.1	15
17	Supercapacitors in a rapid heat transfer application. , 2021, , 395-405.		0
18	Dynamics, models, and management of rechargeable batteries. , 2021, , 99-172.		1

#	Article	IF	Citations
19	Supercapacitor Assisted Hybrid PV System for Efficient Solar Energy Harnessing. Electronics (Switzerland), 2021, 10, 2422.	3.1	0
20	UPS Capability and End-to-End Efficiency Improvement Technique for DC Microgrids with Supercapacitor Energy Storage. , 2021, , .		0
21	A Preliminary Study on the Switching Ripple of Supercapacitor-Assisted Low-Dropout Regulator. , 2021, , .		3
22	Circuit Protection Techniques for Supercapacitor-Assisted Low-Dropout (SCALDO) Regulator. , 2021, , .		0
23	Comparison of Step-Down Charge Pump Converters and Supercapacitor-Assisted Low- Dropout (SCALDO) Regulators. , 2021, , .		0
24	Supercapacitorâ€assisted LED (SCALED) technique for renewable energy systems: a very low frequency design approach with shortâ€term DCâ€UPS capability eliminating battery banks. IET Renewable Power Generation, 2020, 14, 1559-1570.	3.1	23
25	Supercapacitor Assisted Hybrid DC-DC Converter for Applications Powered by Renewable Energy Sources. , 2020, , .		1
26	Permeance based model for the coupled-inductor utilized in the supercapacitor assisted surge absorber (SCASA) and its experimental validation. , 2020, , .		7
27	Batteryless UPS for Modern Data Centres: A High Current Extension of SCALDO with Distributed DC-UPS. , 2020, , .		0
28	Exprimental verification of Supercapacitor Assisted Sub Module Inverter (SCASMI) Technique. , 2020, , .		0
29	Supercapacitor based RC loop loss circumvention technique to improve the efficiency of photovoltaic inverters. , 2020, , .		1
30	Efficiency Enhancements to a Linear AC Voltage Regulator: Multiwinding Versus Multitransformer Design. IEEE Journal of Emerging and Selected Topics in Industrial Electronics, 2020, 1, 192-199.	3.9	0
31	Supercapacitor-Based Long Time-Constant Circuits: A Unique Design Opportunity for New Power Electronic Circuit Topologies. IEEE Industrial Electronics Magazine, 2020, 14, 40-56.	2.6	27
32	Stability analysis and experimental validation of the supercapacitorâ€assisted lowâ€dropout regulator. IET Power Electronics, 2020, 13, 3213-3225.	2.1	6
33	Upscaling supercapacitor assisted low dropout regulator for high-current and high-voltage for the 48 V DC Google rack architecture. , 2020, , .		0
34	Analysis of Impedance Matching Technique for Novel Supercapacitor Assisted PV Systems. , 2020, , .		2
35	Performance Characteristics of Energy-Efficient LED Lamps Leading to Supercapacitor Assisted LED (SCALED) Technique for DC-Microgrid Applications. , 2019, , .		3
36	DC-UPS Capability for the SCALDO-Assisted 48-V Google Rack Power Architecture. , 2019, , .		4

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37	Use of multiple transformer windings for efficiency enhancement in the series transistor-array based linear AC voltage regulator. , 2019, , .		1
38	Improving the Energy Storage of Standalone PV Systems while Enhancing the Charging Efficiency using Supercapacitors. , 2019, , .		4
39	Investigating the impact of ferrite magnetic cores on the performance of supercapacitor assisted surge absorber (SCASA) technique. , 2019, , .		4
40	Extending the Supercapacitor-Assisted Low-Dropout Regulator (SCALDO) Technique to a Split-Rail DCâ€“DC Converter Application. IEEE Access, 2019, 7, 124034-124047.	4.2	10
41	Development of the Supercapacitor-Assisted Surge Absorber (SCASA) Technique. , 2019, , 151-171.		0
42	Supercapacitor Assisted Data Center Power Architecture for 380 V DC-microgrid. , 2019, , .		2
43	Magnetic Design Aspects of New Hybrid 48-V DC Power Supply Based on SCALDO. , 2019, , .		1
44	A Validity of MPPT Technique Using Supercapacitors as Energy Storage Devices: Example of the SCALED converter technique. , 2019, , .		1
45	Supercapacitors for Surge Absorption. , 2019, , 43-60.		0
46	Supercapacitor Assisted LED lighting (SCALED) for DC-micro grids. , 2019, , .		3
47	Supercapacitorâ€assisted low dropout regulator technique: a new design approach to achieve highâ€efficiency linear DCâ€“DC converters. IET Power Electronics, 2018, 11, 229-238.	2.1	24
48	Design approach for Supercapacitor Assisted LED lighting (SCALED) technique for DC-microgrids. , 2018, , .		13
49	DO-SCALDO design approach versus other split-rail, inductor-less DC-DC converter techniques. , 2018, , .		1
50	Off-line SCALDO based high current DC power supply. , 2018, , .		6
51	Pole-zero analysis of supercapacitor-assisted low-dropout (SCALDO) regulator. , 2018, , .		4
52	Fast acting linear AC voltage regulator for consumer applications: Implementation options. , 2018, , .		1
53	Designing and constructing a DC microgrid with uninterrupted power supply capability and optimizing its energy usage by smart controlling system. , 2018, , .		4
54	Use of Effective Capacitance Variation as a Measure of State-of-Health in a Series-Connected Automotive Battery Pack. IEEE Transactions on Vehicular Technology, 2018, 67, 1961-1968.	6.3	20

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55	Powering 12-V LED luminiaries with supercapacitor-based energy storage in DC-microgrid systems. , 2018, , .		4
56	Analysis and Simulation of Transformer Isolated High Current 48 V DC Power Supply with DC-UPS Capability Based on SCALDO Technique for Google's New Open Rack Power Architecture. , 2018, , .		4
57	Novel Approach for Harnessing Maximum Energy from PV Systems using Supercapacitors. , 2018, , .		2
58	Transformer Isolated SCALDO Based High Current DC Power Supply. Applied Mechanics and Materials, 2018, 884, 122-128.	0.2	1
59	Taking the Stage at CPE-POWERENG 2018 [Students and Young Professional News]. IEEE Industrial Electronics Magazine, 2018, 12, 51-53.	2.6	0
60	Linear AC Voltage Regulator: Implementation Details of a Multi-Winding Approach. , 2018, , .		2
61	Efficiency enhanced linear DC-DC converter topology with integrated DC-UPS capability. , 2018, , .		14
62	Selection of the Stable Range of the Equivalent Series Resistance (ESR) of the Output Capacitor for a SCALDO Regulator. , 2018, , .		4
63	Developing a high current 48V DC power supply: Design approaches based on SCALDO. , 2018, , .		8
64	Back-to-back MOSFET switches to reduce the losses in SCALDO implementation. , 2017, , .		3
65	Single-input, dual polarity, dual output DC-DC converter implementation based on the SCALDO technique. , 2017, , .		2
66	Theoretical analysis of supercapacitor-based DC-DC converter with DC-UPS capability for 12 V LED lighting applications. , 2017, , .		0
67	Energy-Limited Transient-Mode Fast Supercapacitor Charger Topology. IEEE Transactions on Power Electronics, 2017, 32, 911-914.	7.9	22
68	Two-transformer-series approach in developing a transistor based-AC voltage regulator for consumer-end applications. , 2017, , .		3
69	Series transistor array-based linear AC regulator: Role of multiple buck-boost transformers in efficiency improvements. , 2017, , .		3
70	Potential of supercapacitors in novel power converters as semi-ideal lossless voltage droppers. , 2017, , .		27
71	Reducedâ€switch SCALDO: an extra lowâ€frequency DCâ€“DC converter technique for VRM applications. IET Power Electronics, 2017, 10, 2180-2189.	2.1	9
72	Design of an efficiency improved dual-output DC-DC converter utilizing a supercapacitor circulation technique. , 2016, , .		10

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73	Single-stage fast supercapacitor charger with inherent power factor correction for energy-limited applications. , 2016, , .		2
74	Design concepts and preliminary implementations of dual output supercapacitor-assisted low-dropout regulators (DO-SCALDO). , 2016, , .		7
75	A designer's view on non-traditional supercapacitor techniques for sustainable energy applications. , 2016, , .		1
76	Design approaches for fast supercapacitor chargers for applications like SCATMA, SRUPS. , 2016, , .		9
77	Supercapacitors Improve the Performance of Linear Power-Management Circuits: Unique new design options when capacitance jump from micro-farads to farads with a low equivalent series resistance. IEEE Power Electronics Magazine, 2016, 3, 45-59.	0.7	32
78	An extra-low-frequency RS-SCALDO technique: A new approach to design voltage regulator modules. , 2015, , .		8
79	Hybridisation techniques for a supercapacitor-assisted temperature modification apparatus for inline water heating. , 2015, , .		1
80	System implementation aspects of supercapacitor based fast in-line water heating system. , 2015, , .		4
81	Supercapacitors in a rapid heat transfer application. , 2015, , 245-255.		0
82	Supercapacitors for surge absorption. , 2015, , 227-244.		0
83	Supercapacitor energy storage in solar application: A design approach to minimize a fundamental loss issue by partitioning the load and the storage device. , 2015, , .		9
84	Loss estimation and validation of the SCALDO implementation. , 2015, , .		3
85	Supercapacitor-based DC-DC converter technique for DC-microgrids with UPS capability. , 2015, , .		7
86	Supercapacitors for distributed energy storage in DC microgrids and loads. , 2015, , .		6
87	Estimation of transient surge energy transferred with associated time delays for individual components of surge protector circuits. IET Power Electronics, 2015, 8, 685-692.	2.1	7
88	Supercapacitor Assisted Low Dropout Regulators (SCALDO) for high efficiency DC-DC converters for DC microgrid applications. , 2015, , .		13
89	Supercapacitors for energy mangement in autonomous sensor nodes. , 2014, , .		0
90	Pre-stored supercapacitor energy as a solution for burst energy requirements in domestic in-line fast water heating systems. , 2014, , .		9

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91	Supercapacitor assisted surge absorber (SCASA) technique: Selection of supercapacitor and magnetic components. , 2014, , .		16
92	Dynamics and Modeling of Rechargeable Batteries: What electrochemists? work tells the electronic engineers. IEEE Power Electronics Magazine, 2014, 1, 23-33.	0.7	29
93	Implementation of the supercapacitor-assisted surge absorber (SCASA) technique in a practical surge protector. , 2014, , .		15
94	Improving the End-to-End Efficiency of DCâ€“DC Converters Based on a Supercapacitor-Assisted Low-Dropout Regulator Technique. IEEE Transactions on Industrial Electronics, 2014, 61, 223-230.	7.9	63
95	Supercapacitor assisted low dropout regulators (SCALDO) with reduced switches: A new approach to high efficiency VRM designs. , 2013, , .		6
96	Developing a monitoring system for Toyota Prius battery-packs for longer term performance issues. , 2013, , .		4
97	A supercapacitor based enhancement technique for stand-alone surge protection circuits. , 2013, , .		7
98	Reduced-switch SCALDO technique for high-current VRM implementation. , 2013, , .		7
99	Implementation aspects of a new linear regulator topology based on low frequency supercapacitor circulation. , 2012, , .		12
100	Numerical simulation of surge protection circuits and experimental verification using a lightning surge simulator. , 2012, , .		2
101	IPT charged wireless sensor module for river sedimentation detection. , 2012, , .		0
102	Laplace transform-based theoretical foundations and experimental validation: low-frequency supercapacitor circulation for efficiency improvements in linear regulators. IET Power Electronics, 2012, 5, 1785-1792.	2.1	34
103	Design approaches to supercapacitor based surge resistant UPS techniques. , 2011, , .		9
104	A low frequency supercapacitor circulation technique to improve the efficiency of linear regulators based on LDO ICs. , 2011, , .		16
105	Surge Capability Testing of Supercapacitor Families Using a Lightning Surge Simulator. IEEE Transactions on Industrial Electronics, 2011, 58, 4942-4949.	7.9	43
106	Rechargeable batteries and their management. IEEE Instrumentation and Measurement Magazine, 2011, 14, 20-33.	1.6	42
107	Laplace transform — Based theoretical foundations and experimental validation — Low frequency supercapacitor circulation technique for efficiency improvements in linear regulators. , 2011, , .		5
108	Rechargeable batteries and battery management systems design. , 2010, , .		5

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109	Investigation of failure patterns of desktop computer power supplies using a lightning surge simulator and the generation of a database for a comprehensive surge propagation study. , 2010, , .		5
110	Surge endurance capability testing of supercapacitor families. , 2010, , .		11
111	Low-Cost Autonomous 3-D Monitoring Systems for Hydraulic Engineering Environments and Applications With Limited Accuracy Requirements. IEEE Sensors Journal, 2010, 10, 331-339.	4.7	3
112	Very low frequency supercapacitor techniques to improve the end-to-end efficiency of DC-DC converters based on commercial off the shelf LDOs. , 2010, , .		15
113	A supercapacitor technique for efficiency improvement in linear regulators. , 2009, , .		19
114	Design enhancements of the Smart Sediment Particle for riverbed transport monitoring. , 2009, , .		2
115	Power Semiconductors. , 2008, , 197-245.		0
116	An Environmental Air Pollution Monitoring System Based on the IEEE 1451 Standard for Low Cost Requirements. IEEE Sensors Journal, 2008, 8, 415-422.	4.7	169
117	Use of motion sensors for autonomous monitoring of hydraulic environments. , 2008, , .		6
118	Testing and calibration of smart pebble for river bed sediment transport monitoring. , 2007, , .		8
119	An ICPT-Supercapacitor Hybrid System for Surge-Free Power Transfer. IEEE Transactions on Industrial Electronics, 2007, 54, 3287-3297.	7.9	55
120	A power sharing series power BJT array with isolated low voltage control for AC power control applications. Industrial Electronics Society (IECON), Annual Conference of IEEE, 2006, , .	0.0	1
121	Implementation Aspects and Offline Digital Signal Processing of a Smart Pebble for River Bed Sediment Transport Monitoring. , 2006, , .		7
122	Electronic Circuit Design. , 0, , .		5