Nihal Kularatna

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/3309917/publications.pdf

Version: 2024-02-01

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	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
2	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
3	An ICPT-Supercapacitor Hybrid System for Surge-Free Power Transfer. IEEE Transactions on Industrial Electronics, 2007, 54, 3287-3297.	7.9	55
4	Surge Capability Testing of Supercapacitor Families Using a Lightning Surge Simulator. IEEE Transactions on Industrial Electronics, 2011, 58, 4942-4949.	7.9	43
5	Rechargeable batteries and their management. IEEE Instrumentation and Measurement Magazine, 2011, 14, 20-33.	1.6	42
6	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
7	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
8	Dynamics and Modeling of Rechargeable Batteries: What electrochemists? work tells the electronic engineers. IEEE Power Electronics Magazine, 2014, 1, 23-33.	0.7	29
9	Potential of supercapacitors in novel power converters as semi-ideal lossless voltage droppers. , 2017, , .		27
10	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
11	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
12	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
13	Energy-Limited Transient-Mode Fast Supercapacitor Charger Topology. IEEE Transactions on Power Electronics, 2017, 32, 911-914.	7.9	22
14	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
15	A supercapacitor technique for efficiency improvement in linear regulators. , 2009, , .		19
16	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
17	A low frequency supercapacitor circulation technique to improve the efficiency of linear regulators based on LDO ICs. , 2011, , .		16
18	Supercapacitor assisted surge absorber (SCASA) technique: Selection of supercapacitor and magnetic components. , 2014, , .		16

#	Article	IF	Citations
19	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
20	Implementation of the supercapacitor-assisted surge absorber (SCASA) technique in a practical surge protector. , 2014, , .		15
21	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
22	Efficiency enhanced linear DC-DC converter topology with integrated DC-UPS capability. , 2018, , .		14
23	Supercapacitor Assisted Low Dropout Regulators (SCALDO) for high efficiency DC-DC converters for DC microgrid applications. , 2015, , .		13
24	Design approach for Supercapacitor Assisted LED lighting (SCALED) technique for DC-microgrids. , 2018, , .		13
25	Implementation aspects of a new linear regulator topology based on low frequency supercapacitor circulation. , 2012, , .		12
26	Surge endurance capability testing of supercapacitor families. , 2010, , .		11
27	Design of an efficiency improved dual-output DC-DC converter utilizing a supercapacitor circulation technique. , 2016, , .		10
28	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
29	Design approaches to supercapacitor based surge resistant UPS techniques. , 2011, , .		9
30	Pre-stored supercapacitor energy as a solution for burst energy requirements in domestic in-line fast water heating systems. , 2014, , .		9
31	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
32	Design approaches for fast supercapacitor chargers for applications like SCATMA, SRUPS. , 2016, , .		9
33	Reducedâ€switch SCALDO: an extra lowâ€frequency DCâ€“DC converter technique for VRM applications. IET Power Electronics, 2017, 10, 2180-2189.	2.1	9
34	Extending the Input Voltage Range of Solar PV Inverters with Supercapacitor Energy Circulation. Electronics (Switzerland), 2021, 10, 88.	3.1	9
35	Testing and calibration of smart pebble for river bed sediment transport monitoring. , 2007, , .		8
36	An extra-low-frequency RS-SCALDO technique: A new approach to design voltage regulator modules. , 2015, , .		8

#	Article	IF	Citations
37	Developing a high current 48V DC power supply: Design approaches based on SCALDO. , 2018, , .		8
38	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
39	Implementation Aspects and Offline Digital Signal Processing of a Smart Pebble for River Bed Sediment Transport Monitoring. , 2006, , .		7
40	A supercapacitor based enhancement technique for stand-alone surge protection circuits. , 2013, , .		7
41	Reduced-switch SCALDO technique for high-current VRM implementation. , 2013, , .		7
42	Supercapacitor-based DC-DC converter technique for DC-microgrids with UPS capability. , 2015, , .		7
43	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
44	Design concepts and preliminary implementations of dual output supercapacitor-assisted low-dropout regulators (DO-SCALDO). , 2016, , .		7
45	Permeance based model for the coupled-inductor utilized in the supercapacitor assisted surge absorber (SCASA) and its experimental validation. , 2020, , .		7
46	Use of motion sensors for autonomous monitoring of hydraulic environments. , 2008, , .		6
47	Supercapacitor assisted low dropout regulators (SCALDO) with reduced switches: A new approach to high efficiency VRM designs. , 2013, , .		6
48	Supercapacitors for distributed energy storage in DC microgrids and loads. , 2015, , .		6
49	Off-line SCALDO based high current DC power supply. , 2018, , .		6
50	Supercapacitor assisted surge absorber (SCASA) technique: selection of magnetic components based on permeance. , 2021, , .		6
51	Stability analysis and experimental validation of the supercapacitorâ€assisted lowâ€dropout regulator. IET Power Electronics, 2020, 13, 3213-3225.	2.1	6
52	Rechargeable batteries and battery management systems design. , 2010, , .		5
53	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
54	Laplace transform — Based theoretical foundations and experimental validation — Low frequency supercapacitor circulation technique for efficiency improvements in linear regulators. , 2011, , .		5

#	Article	IF	Citations
55	Electronic Circuit Design. , 0, , .		5
56	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
57	Supercapacitor assisted surge absorber technique: high performance transient surge protectors for consumer electronics. IEEE Power Electronics Magazine, 2022, 9, 48-60.	0.7	5
58	Developing a monitoring system for Toyota Prius battery-packs for longer term performance issues. , 2013, , .		4
59	System implementation aspects of supercapacitor based fast in-line water heating system. , 2015, , .		4
60	Pole-zero analysis of supercapacitor-assisted low-dropout (SCALDO) regulator. , 2018, , .		4
61	Designing and constructing a DC microgrid with uninterrupted power supply capability and optimizing its energy usage by smart controlling system. , 2018, , .		4
62	Powering 12-V LED luminiaries with supercapacitor-based energy storage in DC-microgrid systems. , 2018, , .		4
63	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
64	Selection of the Stable Range of the Equivalent Series Resistance (ESR) of the Output Capacitor for a SCALDO Regulator. , 2018, , .		4
65	DC-UPS Capability for the SCALDO-Assisted 48-V Google Rack Power Architecture. , 2019, , .		4
66	Improving the Energy Storage of Standalone PV Systems while Enhancing the Charging Efficiency using Supercapacitors. , 2019, , .		4
67	Investigating the impact of ferrite magnetic cores on the performance of supercapacitor assisted surge absorber (SCASA) technique. , 2019, , .		4
68	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
69	Loss estimation and validation of the SCALDO implementation. , 2015, , .		3
70	Back-to-back MOSFET switches to reduce the losses in SCALDO implementation. , 2017, , .		3
71	Two-transformer-series approach in developing a transistor based-AC voltage regulator for consumer-end applications. , 2017, , .		3
72	Series transistor array-based linear AC regulator: Role of multiple buck-boost transformers in efficiency improvements. , 2017, , .		3

#	Article	IF	Citations
73	Performance Characteristics of Energy-Efficient LED Lamps Leading to Supercapacitor Assisted LED (SCALED) Technique for DC-Microgrid Applications. , 2019, , .		3
74	Supercapacitor Assisted LED lighting (SCALED) for DC-micro grids. , 2019, , .		3
75	A Preliminary Study on the Switching Ripple of Supercapacitor-Assisted Low-Dropout Regulator. , 2021, , .		3
76	Current Context and Research Trends in Linear DCâ€“DC Converters. Applied Sciences (Switzerland), 2022, 12, 4594.	2.5	3
77	Design enhancements of the Smart Sediment Particle for riverbed transport monitoring. , 2009, , .		2
78	Numerical simulation of surge protection circuits and experimental verification using a lightning surge simulator. , 2012, , .		2
79	Single-stage fast supercapacitor charger with inherent power factor correction for energy-limited applications. , 2016, , .		2
80	Single-input, dual polarity, dual output DC-DC converter implementation based on the SCALDO technique. , 2017, , .		2
81	Novel Approach for Harnessing Maximum Energy from PV Systems using Supercapacitors. , 2018, , .		2
82	Linear AC Voltage Regulator: Implementation Details of a Multi-Winding Approach. , 2018, , .		2
83	Supercapacitor Assisted Data Center Power Architecture for 380 V DC-microgrid. , 2019, , .		2
84	Analysis of Impedance Matching Technique for Novel Supercapacitor Assisted PV Systems. , 2020, , .		2
85	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
86	Hybridisation techniques for a supercapacitor-assisted temperature modification apparatus for inline water heating. , 2015, , .		1
87	A designer's view on non-traditional supercapacitor techniques for sustainable energy applications. , 2016, , .		1
88	DO-SCALDO design approach versus other split-rail, inductor-less DC-DC converter techniques. , 2018, , .		1
89	Fast acting linear AC voltage regulator for consumer applications: Implementation options. , 2018, , .		1
90	Transformer Isolated SCALDO Based High Current DC Power Supply. Applied Mechanics and Materials, 2018, 884, 122-128.	0.2	1

#	Article	IF	Citations
91	Use of multiple transformer windings for efficiency enhancement in the series transistor-array based linear AC voltage regulator. , 2019, , .		1
92	Magnetic Design Aspects of New Hybrid 48-V DC Power Supply Based on SCALDO. , 2019, , .		1
93	A Validity of MPPT Technique Using Supercapacitors as Energy Storage Devices: Example of the SCALED converter technique. , 2019, , .		1
94	Supercapacitor Assisted Hybrid DC-DC Converter for Applications Powered by Renewable Energy Sources. , 2020, , .		1
95	Supercapacitor based RC loop loss circumvention technique to improve the efficiency of photovoltaic inverters. , 2020, , .		1
96	New developments of larger supercapacitors: Symmetrical devices, hybrid types, and battery-capacitors. , 2021, , 239-249.		1
97	Rechargeable battery technologies: An electronic circuit designerâ€™s viewpoint. , 2021, , 65-98.		1
98	Dynamics, models, and management of rechargeable batteries. , 2021, , 99-172.		1
99	Power Semiconductors. , 2008, , 197-245.		0
100	IPT charged wireless sensor module for river sedimentation detection. , 2012, , .		0
101	Supercapacitors for energy mangement in autonomous sensor nodes. , 2014, , .		0
102	Supercapacitors in a rapid heat transfer application. , 2015, , 245-255.		0
103	Supercapacitors for surge absorption. , 2015, , 227-244.		0
104	Theoretical analysis of supercapacitor-based DC-DC converter with DC-UPS capability for 12 V LED lighting applications. , 2017, , .		0
105	Taking the Stage at CPE-POWERENG 2018 [Students and Young Professional News]. IEEE Industrial Electronics Magazine, 2018, 12, 51-53.	2.6	0
106	Development of the Supercapacitor-Assisted Surge Absorber (SCASA) Technique. , 2019, , 151-171.		0
107	Supercapacitors for Surge Absorption. , 2019, , 43-60.		0
108	Batteryless UPS for Modern Data Centres: A High Current Extension of SCALDO with Distributed DC-UPS. , 2020, , .		0

#	Article	IF	Citations
109	Exprimental verification of Supercapacitor Assisted Sub Module Inverter (SCASMI) Technique. , 2020, , .		0
110	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
111	Supercapacitors for surge absorption: Supercapacitor assisted surge absorber (SCASA) technique. , 2021, , 377-394.		0
112	Supercapacitor as a lossless dropper in DC-DC converters â€"SCALDO technique. , 2021, , 273-310.		0
113	End-to-End Efficiency Improvement Technique for Supercapacitor Energy Stores in Renewable Energy Applications. , 2021, , .		0
114	Scalable SCALDO Design for 48 V Google Server Racks Powered by 380 V DC-microgrids. , 2021, , .		0
115	Supercapacitors in a rapid heat transfer application. , 2021, , 395-405.		0
116	Supercapacitor Assisted Hybrid PV System for Efficient Solar Energy Harnessing. Electronics (Switzerland), 2021, 10, 2422.	3.1	0
117	UPS Capability and End-to-End Efficiency Improvement Technique for DC Microgrids with Supercapacitor Energy Storage. , 2021, , .		0
118	Upscaling supercapacitor assisted low dropout regulator for high-current and high-voltage for the 48 V DC Google rack architecture. , 2020, , .		0
119	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
120	Circuit Protection Techniques for Supercapacitor-Assisted Low-Dropout (SCALDO) Regulator. , 2021, , .		0
121	Comparison of Step-Down Charge Pump Converters and Supercapacitor-Assisted Low- Dropout (SCALDO) Regulators. , 2021, , .		0
122	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