

Deepakraj Divan

List of Publications by Year in descending order

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145
papers

1,991
citations

430442

18
h-index

360668

35
g-index

145
all docs

145
docs citations

145
times ranked

1206
citing authors

#	ARTICLE	IF	CITATIONS
1	New Modulation and Impact of Transformer Leakage Inductance on Current-Source Solid-State Transformer. IEEE Transactions on Power Electronics, 2022, 37, 562-576.	5.4	13
2	Current-Source Solid-State DC Transformer Integrating LVDC Microgrid, Energy Storage, and Renewable Energy Into MVDC Grid. IEEE Transactions on Power Electronics, 2022, 37, 1044-1058.	5.4	29
3	Insulation Coordination Design for Grid-Connected Solid-State Transformers. IEEE Journal of Emerging and Selected Topics in Power Electronics, 2022, 10, 3746-3758.	3.7	9
4	Solid-State Transformer and Hybrid Transformer With Integrated Energy Storage in Active Distribution Grids: Technical and Economic Comparison, Dispatch, and Control. IEEE Journal of Emerging and Selected Topics in Power Electronics, 2022, 10, 3771-3787.	3.7	40
5	7.2 kV Three-Port SiC Single-Stage Current-Source Solid-State Transformer With 90 kV Lightning Protection. IEEE Transactions on Power Electronics, 2022, 37, 12080-12094.	5.4	16
6	Predictive Direct DC-Link Control for 7.2 kV Three-Port Low-Inertia Solid-State Transformer With Active Power Decoupling. IEEE Transactions on Power Electronics, 2022, 37, 11673-11685.	5.4	7
7	Laminated Permanent Magnets Enable Compact Magnetic Components in Current-Source Converters. IEEE Transactions on Power Electronics, 2022, 37, 12391-12405.	5.4	6
8	Negative Virtual Inductance based Active Damping and Direct Power Control of a Soft Switching Solid State Transformer for \$PV\$ Application. , 2022, , .		6
9	Sensing Circuits and Transition Control Mechanisms for Soft-Switching Current Source Converters. , 2022, , .		1
10	On the Passivity of Grid-Forming Converters â€” Role of Virtual Impedance. , 2022, , .		4
11	DC-Link Current Minimization Control for Current Source Converter-Based Solid-State Transformer. IEEE Transactions on Power Electronics, 2022, 37, 11865-11875.	5.4	4
12	A Tri-Port Current-Source Soft-Switching Medium-Voltage String Inverter for Large-Scale Solar-Plus-Storage Farms. IEEE Transactions on Power Electronics, 2022, 37, 13808-13823.	5.4	9
13	An Edge-Intelligent, Clip-on Rogowski Current Sensor With Wide Dynamic Range. IEEE Sensors Journal, 2021, 21, 1059-1071.	2.4	10
14	Soft-Switching Solid-State Transformer With Reduced Conduction Loss. IEEE Transactions on Power Electronics, 2021, 36, 5236-5249.	5.4	61
15	Characterization of 3.3-kV Reverse-Blocking SiC Modules for Use in Current-Source Zero-Voltage-Switching Converters. IEEE Transactions on Power Electronics, 2021, 36, 876-887.	5.4	19
16	The Case for Soft Switching in Four-Quadrant Power Converters. IEEE Journal of Emerging and Selected Topics in Power Electronics, 2021, 9, 6545-6560.	3.7	6
17	Online Detection of Inter-Turn Winding Faults in Single-Phase Distribution Transformers Using Smart Meter Data. IEEE Transactions on Smart Grid, 2021, 12, 5073-5083.	6.2	12
18	Suppression of Device Voltage Stress from Ground Leakage Current for Soft-Switching Solid-State Transformer. , 2021, , .		3

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19	Stacked Low-Inertia Converter or Solid-State Transformer: Modeling and Model Predictive Priority-Shifting Control for Voltage Balance. IEEE Transactions on Power Electronics, 2021, 36, 8934-8952.	5.4	23
20	SiC-Based 5-kV Universal Modular Soft-Switching Solid-State Transformer (M-S4T) for Medium-Voltage DC Microgrids and Distribution Grids. IEEE Transactions on Power Electronics, 2021, 36, 11326-11343.	5.4	49
21	Robust Predictive Control for Modular Solid-State Transformer With Reduced DC Link and Parameter Mismatch. IEEE Transactions on Power Electronics, 2021, 36, 14295-14311.	5.4	17
22	Feed-Forward Compensation for Model Predictive Control in Tri-port Current-Source Medium-Voltage String Inverters for PV-Plus-Storage Farms. , 2021, , .		6
23	Feedback Linearization based Direct Power Control of a three-phase grid-connected inverter with online parameter update. , 2021, , .		5
24	A Multiport DC Transformer to Enable Flexible Scalable DC as a Service. , 2021, , .		3
25	Layout, Packaging, and Efficiency Implications of a 1.7 kV Hybrid Si/SiC Reverse Blocking Switch Module in Soft-Switching Current Source Converters. , 2021, , .		5
26	Control of Soft Switching Solid State Transformer based on Lyapunov Energy Function for Three-phase AC-AC Power Conversion. , 2021, , .		4
27	A Data-Driven Approach for Grid Synchronization Based on Deep Learning. , 2021, , .		3
28	Unified Control (UniCon) Strategies for Grid-Connected Inverters. , 2021, , .		9
29	A Charging Strategy for Electric Vehicle Fast Charging Station to Mitigate Distribution Transformer Aging and Reduce Operation Cost. , 2021, , .		0
30	Laminated Permanent Magnets Enable Compact Magnetic Components in Current Source Converters. , 2021, , .		1
31	Oversampling Multi-Variable Control for Soft-Switching Solid-State Transformer. , 2021, , .		3
32	Comparative Investigation of System-Level Optimized Power Conversion System Architectures to Reduce LCOE for Large-Scale PV-Plus-Storage Farms. , 2021, , .		6
33	Autonomous Fail-Normal Switch for Hybrid Transformers. , 2021, , .		2
34	Distributed Control of Aggregated Smart Buildings for Frequency Regulation. , 2021, , .		0
35	Core Losses of Nanocrystalline Materials Under DC Bias Conditions. , 2020, , .		5
36	New Single-Stage Soft-Switching Solid-State Transformer with Reduced Conduction Loss and Minimal Auxiliary Switch. , 2020, , .		14

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37	Decentralized Operation of Resource Constrained Microgrids â€” Multi-agent Demand-based Approach. , 2020, , .		0
38	Lightning Impulse Protection for Grid-connected Solid-state Transformers. , 2020, , .		7
39	Low-cost Smart Home Energy Management System based on Decentralized Real-Time Pricing. , 2020, , .		1
40	Sensing Service Transformer Secondary Currents using Planar Magnetic Pick-up Coils. , 2020, , .		0
41	Distribution Transformer Health Monitoring using Smart Meter Data. , 2020, , .		26
42	7.2 kV Three-Port Single-Phase Single-Stage Modular Soft-Switching Solid-State Transformer with Active Power Decoupling and Reduced DC-Link. , 2020, , .		24
43	Improving Energy Efficiency and Productivity at Industrial Plants Using Dynamic Voltage Management. IEEE Transactions on Industry Applications, 2020, 56, 1250-1257.	3.3	6
44	Intrinsically-Safe Modular Power Converters for Electric Transportation. , 2020, , .		3
45	A New Representation based on Virtual Capacitor for Virtual Synchronous Generators. , 2020, , .		2
46	Novel Modulation Strategy to Eliminate Device Overvoltage Stress and Enable True ZVS Operation in the Soft-Switching Solid-State Transformer. , 2020, , .		2
47	Multiport Power Management Method with Partial Power Processing in a MV Solid-State Transformer for PV, Storage, and Fast-Charging EV Integration. , 2020, , .		7
48	Predictive Direct DC-Link Control for Active Power Decoupling of A Single-Phase Reduced DC-Link MV Solid-State Transformer. , 2020, , .		7
49	Lyapunov Energy Function based Control of a Soft Switching Solid State Transformer for Three-phase Standalone Application. , 2020, , .		6
50	Dynamic DC-Link Current Minimization Control to Improve Current-Source Solid-State Transformer Efficiency. , 2020, , .		2
51	Enabling High Efficiency in Low-Voltage Soft-Switching Current Source Converters. , 2020, , .		4
52	Design of Control Architecture for Stacked Low-Inertia Converters with Fast Dynamic Control. , 2020, , .		2
53	Accurate voltage-to-frequency sensor with galvanic isolation and bandwidth of 375kHz. , 2020, , .		1
54	Implementing Pay-as-You-Go Functionality in Microgrids using Mobile Ad-Hoc Networks. , 2019, , .		3

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55	A Novel Approach to Implement Low-Cost AMI Functionality using Delay-Tolerant Communication. , 2019, , .		12
56	A Novel Approach for Bump-less Connection of Microgrids with the Grid. , 2019, , .		3
57	Evaluating Time Varying Connectivities and System Throughput in Opportunistic Networks for Smart Grid Applications. , 2019, , .		1
58	Decentralized Real-Time Pricing to Achieve Integrated Transactive and Physical Grids. IEEE Access, 2019, 7, 132525-132541.	2.6	10
59	The IEEE Empower a Billion Lives Competition: Regional Round Results [Entrepreneur Viewpoint]. IEEE Power Electronics Magazine, 2019, 6, 12-16.	0.6	0
60	Collaborative Volt-VAR Control Using Grid-Connected PV Inverters. , 2019, , .		3
61	Energy Access in Community Microgrids based on Decentralized Real-time Pricing. , 2019, , .		4
62	Island Interconnection Device - Enabling a Simplified Approach to Integrate Microgrids with the Grid. , 2019, , .		0
63	Enabling a Decentralized Smart Grid Using Autonomous Edge Control Devices. IEEE Internet of Things Journal, 2019, 6, 7406-7419.	5.5	35
64	Low-Cost Industrial Monitoring Platform for Energy Efficiency and Optimized Plant Productivity. , 2019, , .		1
65	Team SoULS Wins US$100,000 in the IEEE Empower a Billion Lives Global Competition [Entrepreneur Viewpoint]. IEEE Power Electronics Magazine, 2019, 6, 12-16.	0.6	0
66	Residential Load Management Using System Frequency and Grid Voltage as Price Indicators. , 2019, , .		1
67	Systematic Study of Data Requirements and AMI Capabilities for Smart Meter Analytics. , 2019, , .		12
68	Asset Monitoring using Smart Sensing and Advanced Analytics for the Distribution Network. , 2019, , .		12
69	Improving Energy Efficiency and Productivity at Industrial Plants Using Dynamic Voltage Management. , 2019, , .		2
70	Optimal Design of the Resonant Tank of the Soft-Switching Solid-State Transformer. , 2019, , .		12
71	Estimation of Eddy Current Winding Losses in Soft-Switching Solid-State Transformer. , 2019, , .		2
72	Real-Time Modeling and HIL Simulation of Stacked Low-Inertia Converters with Soft-Switching and Fast Dynamic Control. , 2019, , .		3

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73	Design of a 10-kV \hat{V} -A Soft-Switching Solid-State Transformer (S4T). IEEE Transactions on Power Electronics, 2018, 33, 5724-5738.	5.4	60
74	Soft-Switching Solid-State Transformer (S4T). IEEE Transactions on Power Electronics, 2018, 33, 2933-2947.	5.4	119
75	Standards: Entrepreneurs' Friend or Foe? [Entrepreneur Viewpoint]. IEEE Power Electronics Magazine, 2018, 5, 18-20.	0.6	0
76	Fast Dynamic Control of Stacked Low Inertia Converters. , 2018, , .		15
77	Modular Universal Converter for MVDC Applications. , 2018, , .		34
78	Soft-Switching Characterization of 3.3 kV Reverse-blocking SiC Devices. , 2018, , .		3
79	Soft-switching â€œ The Key to High Power WBG Converters. , 2018, , .		6
80	Reducing Energy Consumption in Industrial Plants Using Behind the Meter Conservation Voltage Reduction. , 2018, , .		6
81	Cost-Effective Dynamic Control for Transmission Systems. , 2018, , .		3
82	Update on the Empower a Billion Lives Initiative [Entrepreneur Viewpoint]. IEEE Power Electronics Magazine, 2018, 5, 18-19.	0.6	0
83	Impact of Transformer Leakage Inductance on the Soft-Switching Solid-State Transformer. , 2018, , .		17
84	Grounded Controllable Network Transformer for Cost-Effective Grid Control. , 2018, , .		10
85	Implementing Volt-Var Control in Meshed Low Voltage Grids. , 2018, , .		1
86	Dyna-C: A Minimal Topology for Bidirectional Solid-State Transformers. IEEE Transactions on Power Electronics, 2017, 32, 995-1005.	5.4	68
87	High-frequency transformer design for the soft-switching solid state transformer (S4T). , 2017, , .		11
88	A soft-switching dynamic VAR compensator. , 2017, , .		2
89	Turning Distribution Feeders Into STATCOMs. IEEE Transactions on Industry Applications, 2017, 53, 1372-1380.	3.3	12
90	Soft-switching isolated tri-port converter for integration of PV, storage and single-phase AC grid. , 2017, , .		15

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91	Single-stage soft-switching solid-state transformer for bidirectional motor drives. , 2017, , .		17
92	Slow and Steady Wins the Race: Other Models for Entrepreneurship [Entrepreneur Viewpoint]. IEEE Power Electronics Magazine, 2016, 3, 16-17.	0.6	0
93	Flexible transformers for distribution grid control. , 2016, , .		3
94	Soft-switching solid state transformer (S4T). , 2016, , .		12
95	Increasing solar hosting capacity is the key to sustainability. , 2016, , .		1
96	Managing distribution feeder voltage issues caused by high PV penetration. , 2016, , .		16
97	Identifying and Avoiding Some Common Traps [Entrepreneur Viewpoint]. IEEE Power Electronics Magazine, 2016, 3, 64-65.	0.6	1
98	Entrepreneurs Drive Creative Destruction [Entrepreneur Viewpoint]. IEEE Power Electronics Magazine, 2016, 3, 38-39.	0.6	0
99	Distributed Power Electronics: An Enabler for the Future Grid. CPSS Transactions on Power Electronics and Applications, 2016, 1, 57-65.	2.9	21
100	What's the Difference Between a US\$0 Million and a US\$0 Billion Company? [Entrepreneur Viewpoint]. IEEE Power Electronics Magazine, 2016, 3, 69-70.	0.6	2
101	High speed switching issues of high power rated silicon-carbide devices and the mitigation methods. , 2015, , .		55
102	You Have Decided to Take The Plunge - Now How Do You Fund It? [Entrepreneur Viewpoint]. IEEE Power Electronics Magazine, 2015, 2, 54-55.	0.6	0
103	Transient droop for improved transient load sharing in microgrids. , 2014, , .		13
104	Validation of the Plug-and-Play AC/AC Power Electronics Building Block (AC-PEBB) for Medium-Voltage Grid Control Applications. IEEE Transactions on Industry Applications, 2014, 50, 3549-3557.	3.3	15
105	Stable operation of multiple power routers. , 2013, , .		2
106	A Practical Directional Third Harmonic Hybrid Active Filter for Medium-Voltage Utility Applications. IEEE Transactions on Industry Applications, 2013, 49, 2674-2683.	3.3	10
107	A 7.2 kV experimental setup of a third harmonic hybrid active filter for medium voltage utility applications. , 2013, , .		1
108	Power flow controller for meshed systems with a fractionally rated BTB converter. , 2012, , .		8

#	ARTICLE	IF	CITATIONS
109	Loss comparison between SiC, hybrid Si/SiC, and Si devices in direct AC/AC converters. , 2012, , .		16
110	Plug-and-play AC/AC power electronics building blocks (AC-PEBBs) for grid control. , 2012, , .		5
111	Experimental validation of active snubber circuit for direct AC/AC converters. , 2012, , .		7
112	A practical directional third harmonic hybrid active filter for medium voltage utility applications. , 2012, , .		0
113	Smart “Stick-on” Sensors for the Smart Grid. IEEE Transactions on Smart Grid, 2012, 3, 241-252.	6.2	68
114	Mitigating distribution transformer lifetime degradation caused by grid-enabled vehicle (GEV) charging. , 2011, , .		17
115	Evaluating the application of energy storage and day-ahead solar forecasting to firm the output of a photovoltaic plant. , 2011, , .		4
116	Active AC snubber for direct AC/AC power converters. , 2011, , .		7
117	Design and testing of a medium voltage Controllable Network Transformer Prototype with an integrated hybrid active filter. , 2011, , .		11
118	Directional Triplen Hybrid Active Filter for radial systems. , 2011, , .		4
119	Increasing the likelihood of large-scale grid-enabled vehicle (GEV) penetration through appropriate design choices. , 2011, , .		0
120	Reducing transmission investment to meet Renewable Portfolio Standards Using Smart Wires. , 2010, , .		21
121	Power line vicinity monitoring via multiple displacement current measurement. , 2010, , .		1
122	Scaling the Dynamic Capacitor (D-CAP) to medium voltages. , 2010, , .		2
123	Smart tie-line control using Controllable Network Transformers. , 2010, , .		9
124	Protection of meshed microgrids with communication overlay. , 2010, , .		30
125	Reducing transmission investment to meet Renewable Portfolio Standards using Controlled Energy Flows. , 2010, , .		12
126	Overhead conductor thermal dynamics identification by using Echo State Networks. , 2009, , .		13

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127	Design and implementation of power line sensor net for overhead transmission lines. , 2009, , .		32
128	Integrated fault current limiter and power flow controller for grid tie-lines. , 2009, , .		2
129	Individual generator contributions towards loads and line flows in networks with loop flows. , 2009, , .		1
130	Control of multilevel direct AC converters. , 2009, , .		10
131	MLPN based Parameter Estimation to Evaluate Overhead Power Line Dynamic Thermal Rating. , 2009, , .		7
132	Condition Monitoring of Power Electronic Circuits Using Artificial Neural Networks. IEEE Transactions on Power Electronics, 2009, 24, 2363-2367.	5.4	65
133	Inverter-less STATCOMs. Power Electronics Specialist Conference (PESC), IEEE, 2008, , .	0.0	17
134	Controllable Network Transformers. Power Electronics Specialist Conference (PESC), IEEE, 2008, , .	0.0	37
135	Dynamic Var/Harmonic Compensation with Inverter-Less Active Filters. , 2008, , .		17
136	Thin AC converters — A new approach for making existing grid assets smart and controllable. Power Electronics Specialist Conference (PESC), IEEE, 2008, , .	0.0	41
137	Zero Energy Sag Corrector with reduced device count. Power Electronics Specialist Conference (PESC), IEEE, 2008, , .	0.0	2
138	From Power Line to Pipeline — Creating an Efficient and Sustainable Market Structure. , 2008, , .		3
139	Zero Energy Storage Voltage Sag Correctors for Industrial Applications. , 2007, , .		9
140	Voltage Synthesis Using Dual Virtual Quadrature Sources - A New Concept in AC Power Conversion. , 2007, , .		25
141	Zero Energy Sag Correctors - Optimizing Dynamic Voltage Restorers for Industrial Applications. Conference Record - IAS Annual Meeting (IEEE Industry Applications Society), 2007, , .	0.0	1
142	Design Considerations for Series-Connected Distributed FACTS Converters. IEEE Transactions on Industry Applications, 2007, 43, 1609-1618.	3.3	84
143	Zero Energy Sag Correctors - Optimizing Dynamic Voltage Restorers for Industrial Applications. Conference Record - IAS Annual Meeting (IEEE Industry Applications Society), 2007, , .	0.0	4
144	A Survey on Technologies for Implementing Sensor Networks for Power Delivery Systems. IEEE Power Engineering Society General Meeting, 2007, , .	0.0	75

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145	Distributed FACTSâ€™A New Concept for Realizing Grid Power Flow Control. IEEE Transactions on Power Electronics, 2007, 22, 2253-2260.	5.4	147