Angel Peterchev

List of Publications by Year in descending order

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147 papers

12,540 citations

61984 43 h-index 30922 102 g-index

180 all docs

180 docs citations

times ranked

180

8955 citing authors

#	Article	IF	CITATIONS
1	Safety, ethical considerations, and application guidelines for the use of transcranial magnetic stimulation in clinical practice and research. Clinical Neurophysiology, 2009, 120, 2008-2039.	1.5	4,364
2	Electric field depth–focality tradeoff in transcranial magnetic stimulation: Simulation comparison of 50 coil designs. Brain Stimulation, 2013, 6, 1-13.	1.6	771
3	Quantization resolution and limit cycling in digitally controlled PWM converters. IEEE Transactions on Power Electronics, 2003, 18, 301-308.	7.9	554
4	Safety and recommendations for TMS use in healthy subjects and patient populations, with updates on training, ethical and regulatory issues: Expert Guidelines. Clinical Neurophysiology, 2021, 132, 269-306.	1.5	553
5	Fundamentals of transcranial electric and magnetic stimulation dose: Definition, selection, and reporting practices. Brain Stimulation, 2012, 5, 435-453.	1.6	339
6	Architecture and IC implementation of a digital VRM controller. IEEE Transactions on Power Electronics, 2003, 18, 356-364.	7.9	331
7	Coil design considerations for deep transcranial magnetic stimulation. Clinical Neurophysiology, 2014, 125, 1202-1212.	1.5	222
8	A 4-/spl mu/a quiescent-current dual-mode digitally controlled buck converter IC for cellular phone applications. IEEE Journal of Solid-State Circuits, 2004, 39, 2342-2348.	5 . 4	210
9	Simulation of transcranial magnetic stimulation in head model with morphologically-realistic cortical neurons. Brain Stimulation, 2020, 13, 175-189.	1.6	193
10	Electroconvulsive Therapy Stimulus Parameters. Journal of ECT, 2010, 26, 159-174.	0.6	163
11	Electric field strength and focality in electroconvulsive therapy and magnetic seizure therapy: a finite element simulation study. Journal of Neural Engineering, 2011, 8, 016007.	3.5	152
12	International randomized-controlled trial of transcranial Direct Current Stimulation in depression. Brain Stimulation, 2018, 11, 125-133.	1.6	151
13	A Transcranial Magnetic Stimulator Inducing Near-Rectangular Pulses With Controllable Pulse Width (cTMS). IEEE Transactions on Biomedical Engineering, 2008, 55, 257-266.	4.2	142
14	A 2.5D Integrated Voltage Regulator Using Coupled-Magnetic-Core Inductors on Silicon Interposer. IEEE Journal of Solid-State Circuits, 2013, 48, 244-254.	5.4	127
15	Transcranial magnetic stimulation of the brain: What is stimulated? – A consensus and critical position paper. Clinical Neurophysiology, 2022, 140, 59-97.	1.5	124
16	Simultaneous transcranial magnetic stimulation and single-neuron recording in alert non-human primates. Nature Neuroscience, 2014, 17, 1130-1136.	14.8	123
17	Pulse width dependence of motor threshold and input–output curve characterized with controllable pulse parameter transcranial magnetic stimulation. Clinical Neurophysiology, 2013, 124, 1364-1372.	1.5	115
18	Modular Multilevel Converter With Series and Parallel Module Connectivity: Topology and Control. IEEE Transactions on Power Electronics, 2015, 30, 203-215.	7.9	114

#	Article	IF	Citations
19	Biophysically realistic neuron models for simulation of cortical stimulation. Journal of Neural Engineering, 2018, 15, 066023.	3.5	106
20	Consensus: New methodologies for brain stimulation. Brain Stimulation, 2009, 2, 2-13.	1.6	100
21	Effect of coil orientation on strength–duration time constant and I-wave activation with controllable pulse parameter transcranial magnetic stimulation. Clinical Neurophysiology, 2016, 127, 675-683.	1.5	99
22	Regional electric field induced by electroconvulsive therapy in a realistic finite element head model: Influence of white matter anisotropic conductivity. NeuroImage, 2012, 59, 2110-2123.	4.2	98
23	Digital Multimode Buck Converter Control With Loss-Minimizing Synchronous Rectifier Adaptation. IEEE Transactions on Power Electronics, 2006, 21, 1588-1599.	7.9	94
24	Control of Modular Multilevel Converter With Parallel Connectivityâ€"Application to Battery Systems. IEEE Transactions on Power Electronics, 2017, 32, 8381-8392.	7.9	92
25	Relative abundance of Akkermansia spp. and other bacterial phylotypes correlates with anxiety- and depressive-like behavior following social defeat in mice. Scientific Reports, 2019, 9, 3281.	3.3	85
26	Transcranial electrical stimulation nomenclature. Brain Stimulation, 2019, 12, 1349-1366.	1.6	84
27	A wireless millimetric magnetoelectric implant for the endovascular stimulation of peripheral nerves. Nature Biomedical Engineering, 2022, 6, 706-716.	22.5	80
28	Repetitive transcranial magnetic stimulator with controllable pulse parameters. Journal of Neural Engineering, 2011, 8, 036016.	3.5	78
29	Design of transcranial magnetic stimulation coils with optimal trade-off between depth, focality, and energy. Journal of Neural Engineering, 2018, 15, 046033.	3.5	76
30	Load-Line Regulation With Estimated Load-Current Feedforward: Application to Microprocessor Voltage Regulators. IEEE Transactions on Power Electronics, 2006, 21, 1704-1717.	7.9	75
31	Transcranial alternating current stimulation entrains alpha oscillations by preferential phase synchronization of fast-spiking cortical neurons to stimulation waveform. Nature Communications, 2021, 12, 3151.	12.8	74
32	Transcranial electric and magnetic stimulation. Handbook of Clinical Neurology / Edited By P J Vinken and G W Bruyn, 2013, 116, 329-342.	1.8	72
33	Controllable pulse parameter transcranial magnetic stimulator with enhanced circuit topology and pulse shaping. Journal of Neural Engineering, 2014, 11, 056023.	3.5	69
34	Conditions for numerically accurate TMS electric field simulation. Brain Stimulation, 2020, 13, 157-166.	1.6	68
35	A Novel Model Incorporating Two Variability Sources for Describing Motor Evoked Potentials. Brain Stimulation, 2014, 7, 541-552.	1.6	67
36	Comparison of electric field strength and spatial distribution of electroconvulsive therapy and magnetic seizure therapy in a realistic human head model. European Psychiatry, 2016, 36, 55-64.	0.2	65

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37	Focal Electrically Administered Seizure Therapy: A Novel form of ECT Illustrates the Roles of Current Directionality, Polarity, and Electrode Configuration in Seizure Induction. Neuropsychopharmacology, 2009, 34, 2002-2010.	5.4	64
38	Enhancement of Neuromodulation with Novel Pulse Shapes Generated by Controllable Pulse Parameter Transcranial Magnetic Stimulation. Brain Stimulation, 2016, 9, 39-47.	1.6	61
39	Fast computational optimization of TMS coil placement for individualized electric field targeting. Neurolmage, 2021, 228, 117696.	4.2	61
40	Extended Remediation of Sleep Deprived-Induced Working Memory Deficits Using fMRI-guided Transcranial Magnetic Stimulation. Sleep, 2013, 36, 857-871.	1.1	57
41	Quantization resolution and limit cycling in digitally controlled PWM converters. , 0, , .		55
42	Transcranial direct current stimulation (tDCS) of frontal cortex decreases performance on the WAIS-IV intelligence test. Behavioural Brain Research, 2015, 290, 32-44.	2.2	53
43	A Switched-Inductor Integrated Voltage Regulator With Nonlinear Feedback and Network-on-Chip Load in 45 nm SOI. IEEE Journal of Solid-State Circuits, 2012, 47, 1935-1945.	5.4	49
44	Electric field measurement of two commercial active/sham coils for transcranial magnetic stimulation. Journal of Neural Engineering, 2018, 15, 054001.	3.5	47
45	Coupling Magnetically Induced Electric Fields to Neurons: Longitudinal and Transverse Activation. Biophysical Journal, 2018, 115, 95-107.	0.5	47
46	Concept of a distributed photovoltaic multilevel inverter with cascaded double H-bridge topology. International Journal of Electrical Power and Energy Systems, 2019, 110, 667-678.	5.5	46
47	Online repetitive transcranial magnetic stimulation during working memory in younger and older adults: A randomized within-subject comparison. PLoS ONE, 2019, 14, e0213707.	2.5	45
48	Effect of Anatomical Variability on Electric Field Characteristics of Electroconvulsive Therapy and Magnetic Seizure Therapy: A Parametric Modeling Study. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2015, 23, 22-31.	4.9	44
49	Module Implementation and Modulation Strategy for Sensorless Balancing in Modular Multilevel Converters. IEEE Transactions on Power Electronics, 2019, 34, 8405-8416.	7.9	44
50	Architecture and IC implementation of a digital VRM controller. , 0, , .		42
51	Electric Field Model of Transcranial Electric Stimulation in Nonhuman Primates: Correspondence to Individual Motor Threshold. IEEE Transactions on Biomedical Engineering, 2015, 62, 2095-2105.	4.2	42
52	Coil design considerations for deep-brain transcranial magnetic stimulation (dTMS)., 2008, 2008, 5675-9.		41
53	An ultra-low-power digitally-controlled buck converter IC for cellular phone applications. , 0, , .		40
54	Magnetic Field Strength and Reproducibility of Neodymium Magnets Useful for Transcranial Static Magnetic Field Stimulation of the Human Cortex. Neuromodulation, 2014, 17, 438-442.	0.8	37

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55	Subject-Specific Multiscale Modeling to Investigate Effects of Transcranial Magnetic Stimulation. Neuromodulation, 2015, 18, 694-704.	0.8	37
56	Distributed balancing control for modular multilevel series/parallel converter with capability of sensorless operation. , 2017, , .		36
57	Analysis and Optimization of Pulse Dynamics for Magnetic Stimulation. PLoS ONE, 2013, 8, e55771.	2.5	35
58	A Modular Multilevel Series/Parallel Converter for a Wide Frequency Range Operation. IEEE Transactions on Power Electronics, 2019, 34, 9854-9865.	7.9	34
59	Individualized Low-Amplitude Seizure Therapy: Minimizing Current for Electroconvulsive Therapy and Magnetic Seizure Therapy. Neuropsychopharmacology, 2015, 40, 2076-2084.	5.4	33
60	Redesigning existing transcranial magnetic stimulation coils to reduce energy: application to low field magnetic stimulation. Journal of Neural Engineering, 2018, 15, 036022.	3.5	33
61	Controlling Stimulation Strength and Focality in Electroconvulsive Therapy via Current Amplitude and Electrode Size and Spacing. Journal of ECT, 2013, 29, 321-331.	0.6	31
62	Sound comparison of seven TMS coils at matched stimulation strength. Brain Stimulation, 2020, 13, 873-880.	1.6	31
63	Modified cable equation incorporating transverse polarization of neuronal membranes for accurate coupling of electric fields. Journal of Neural Engineering, 2018, 15, 026003.	3.5	28
64	Site-Specific Effects of Online rTMS during a Working Memory Task in Healthy Older Adults. Brain Sciences, 2020, 10, 255.	2.3	28
65	Effect of anatomical variability on neural stimulation strength and focality in electroconvulsive therapy (ECT) and magnetic seizure therapy (MST)., 2009, 2009, 682-8.		27
66	Statistical Model of Motor-Evoked Potentials. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2019, 27, 1539-1545.	4.9	26
67	Accuracy of robotic coil positioning during transcranial magnetic stimulation. Journal of Neural Engineering, 2019, 16, 054003.	3.5	26
68	A Reduced Series/Parallel Module for Cascade Multilevel Static Compensators Supporting Sensorless Balancing. IEEE Transactions on Industrial Electronics, 2021, 68, 15-24.	7.9	25
69	Effect of Experimental Manipulation of the Orbitofrontal Cortex on Short-Term Markers of Compulsive Behavior: A Theta Burst Stimulation Study. American Journal of Psychiatry, 2021, 178, 459-468.	7.2	25
70	Impulse Noise of Transcranial Magnetic Stimulation: Measurement, Safety, and Auditory Neuromodulation. Brain Stimulation, 2015, 8, 161-163.	1.6	24
71	A model of variability in brain stimulation evoked responses. , 2012, 2012, 6434-7.		23
72	Sensorless scheduling of the modular multilevel series-parallel converter: enabling a flexible, efficient, modular battery. , 2016, , .		23

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73	Minimum Electric Field Exposure for Seizure Induction with Electroconvulsive Therapy and Magnetic Seizure Therapy. Neuropsychopharmacology, 2017, 42, 1192-1200.	5.4	23
74	Integrated Flexible Conversion Circuit between a Flexible Photovoltaic and Supercapacitors for Powering Wearable Sensors. Journal of the Electrochemical Society, 2018, 165, B3122-B3129.	2.9	23
75	Modular multilevel TMS device with wide output range and ultrabrief pulse capability for sound reduction. Journal of Neural Engineering, 2022, 19, 026008.	3.5	23
76	Design of ceramic-capacitor VRM's with estimated load current feedforward. , 0, , .		21
77	Current Injection Methods for Ripple-Current Suppression in Delta-Configured Split-Battery Energy Storage. IEEE Transactions on Power Electronics, 2019, 34, 7411-7421.	7.9	21
78	Photovoltaic multilevel inverter with distributed maximum power point tracking and dynamic circuit reconfiguration. , 2017, , .		20
79	Older adults benefit from more widespread brain network integration during working memory. Neurolmage, 2020, 218, 116959.	4.2	20
80	Low conversion ratio VRM design. , 0, , .		19
81	A 2.5D integrated voltage regulator using coupled-magnetic-core inductors on silicon interposer delivering 10.8A/mm ² ., 2012,,.		19
82	Field Distribution of Transcranial Static Magnetic Stimulation in Realistic Human Head Model. Neuromodulation, 2018, 21, 340-347.	0.8	19
83	Structural Controllability Predicts Functional Patterns and Brain Stimulation Benefits Associated with Working Memory. Journal of Neuroscience, 2020, 40, 6770-6778.	3.6	19
84	Using diffusion tensor imaging to effectively target TMS to deep brain structures. NeuroImage, 2022, 249, 118863.	4.2	19
85	Optimal Estimation of Neural Recruitment Curves Using Fisher Information: Application to Transcranial Magnetic Stimulation. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2019, 27, 1320-1330.	4.9	18
86	A 4pA-quiescent-current dual-mode buck converter IC for cellular phone applications. , 0, , .		17
87	Characterizing the short-latency evoked response to intracortical microstimulation across a multi-electrode array. Journal of Neural Engineering, 2022, 19, 026044.	3.5	17
88	Seizure Induction With Low-Amplitude–Current (0.5 A) Electroconvulsive Therapy. Journal of ECT, 2011, 27, 342.	0.6	16
89	Transcranial Magnetic Stimulation Device With Reduced Acoustic Noise. IEEE Magnetics Letters, 2014, 5, 1-4.	1.1	16
90	Quiet transcranial magnetic stimulation: Status and future directions., 2015, 2015, 226-9.		16

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91	Ripple current suppression methods for star-configured modular multilevel converters. , 2017, , .		16
92	Rapid, Dose-Dependent Enhancement of Cerebral Blood Flow by transcranial AC Stimulation in Mouse. Brain Stimulation, 2021, 14, 80-87.	1.6	16
93	Digital loss-minimizing multimode synchronous buck converter control., 0,,.		15
94	Submodule short-circuit fault diagnosis based on wavelet transform and support vector machines for modular multilevel converter with series and parallel connectivity., 2017,,.		15
95	Predictive control of modular multilevel series/parallel converter for battery systems. , 2017, , .		15
96	Comparative evaluation of a new magnetic bead-based DNA extraction method from fecal samples for downstream next-generation 16S rRNA gene sequencing. PLoS ONE, 2018, 13, e0202858.	2.5	15
97	<i>In vitro</i> modulation of endogenous rhythms by AC electric fields: Syncing with clinical brain stimulation. Journal of Physiology, 2007, 584, 369-370.	2.9	14
98	Regional electric field induced by electroconvulsive therapy: A finite element simulation study. , 2010, 2010, 2045-8.		14
99	Controlling Stimulation Strength and Focality in Electroconvulsive Therapy via Current Amplitude and Electrode Size and Spacing. Journal of ECT, 2013, 29, 325-335.	0.6	14
100	Pulse Width Affects Scalp Sensation of Transcranial Magnetic Stimulation. Brain Stimulation, 2017, 10, 99-105.	1.6	14
101	Complementary topology of maintenance and manipulation brain networks in working memory. Scientific Reports, 2018, 8, 17827.	3.3	14
102	TAP: targeting and analysis pipeline for optimization and verification of coil placement in transcranial magnetic stimulation. Journal of Neural Engineering, 2022, 19, 026050.	3.5	14
103	Isolating two sources of variability of subcortical stimulation to quantify fluctuations of corticospinal tract excitability. Clinical Neurophysiology, 2022, 138, 134-142.	1.5	14
104	Transcranial magnetic stimulation in the presence of deep brain stimulation implants: Induced electrode currents., 2010, 2010, 6821-4.		13
105	Optimization of magnetic neurostimulation waveforms for minimum power loss., 2012, 2012, 4652-5.		13
106	Stimulation strength and focality of electroconvulsive therapy and magnetic seizure therapy in a realistic head model., 2014, 2014, 410-3.		13
107	Noninvasive Detection of Motor-Evoked Potentials in Response to Brain Stimulation Below the Noise Floor—How Weak Can a Stimulus Be and Still Stimulate. , 2018, 2018, 2687-2690.		13
108	Modulation and Control of Series/Parallel Module for Ripple-Current Reduction in Star-Configured Split-Battery Applications. IEEE Transactions on Power Electronics, 2020, 35, 12977-12987.	7.9	12

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109	Modular Multilevel Series/Parallel Converter for Bipolar DC Distribution and Transmission. IEEE Journal of Emerging and Selected Topics in Power Electronics, 2021, 9, 1765-1779.	5.4	12
110	Double-Containment Coil With Enhanced Winding Mounting for Transcranial Magnetic Stimulation With Reduced Acoustic Noise. IEEE Transactions on Biomedical Engineering, 2021, 68, 2233-2240.	4.2	12
111	Multichannel power electronics and magnetic nanoparticles for selective thermal magnetogenetics. Journal of Neural Engineering, 2022, 19, 026015.	3.5	12
112	Repetitive transcranial magnetic stimulator with controllable pulse parameters (cTMS)., 2010, 2010, 2922-6.		11
113	Approximating transcranial magnetic stimulation with electric stimulation in mouse: A simulation study., 2014, 2014, 6129-32.		11
114	Transcranial Magnetic Stimulation: Principles and Applications. , 2020, , 245-270.		11
115	Modular Multilevel Series/Parallel Converter With Switched-Inductor Energy Transfer Between Modules. IEEE Transactions on Power Electronics, 2019, 34, 4844-4852.	7.9	10
116	Circuit topology comparison and design analysis for controllable pulse parameter transcranial magnetic stimulators. , $2011, \ldots$		9
117	Networkâ€based rTMS to modulate working memory: The difficult choice of effective parameters for online interventions. Brain and Behavior, 2021, 11, e2361.	2.2	9
118	Transcranial magnetic stimulation coil with electronically switchable active and sham modes., 2011, 2011, 1993-6.		8
119	Modeling transcranial electric stimulation in mouse: A high resolution finite element study. , 2014, 2014, 406-9.		8
120	Different parallel connections generated by the Modular Multilevel Series/Parallel Converter: an overview., 2019,,.		8
121	Transcranial electric stimulation seen from within the brain. ELife, 2017, 6, .	6.0	8
122	A High-Frequency Pulsating DC-Link for Electric Vehicle Drives with Reduced Losses. , 2021, , .		8
123	An integrated four-phase buck converter delivering $1A/mm\<sup\>2\</sup\>$ with $700ps$ controller delay and network-on-chip load in $45-nm$ SOI. , $2011,$, .		7
124	Influence of white matter conductivity anisotropy on electric field strength induced by electroconvulsive therapy., 2011, 2011, 5473-6.		7
125	Stimulation strength and focality of electroconvulsive therapy with individualized current amplitude: A preclinical study., 2012, 2012, 6430-3.		6
126	Magnetic Seizure Therapy for the Treatment of Depression. , 2007, , 155-171.		5

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127	Electroconvulsive therapy in the presence of deep brain stimulation implants: Electric field effects., 2010, 2010, 2049-52.		5
128	Electric field characteristics of electroconvulsive therapy with individualized current amplitude: A preclinical study., 2013, 2013, 3082-5.		5
129	On the characterization of coils for deep transcranial magnetic stimulation. Clinical Neurophysiology, 2015, 126, 1456-1457.	1.5	5
130	Application of long-interval paired-pulse transcranial magnetic stimulation to motion-sensitive visual cortex does not lead to changes in motion discrimination. Neuroscience Letters, 2020, 730, 135022.	2.1	5
131	Anatomical variability predicts individual differences in transcranial electric stimulation motor threshold., 2013, 2013, 815-8.		4
132	P282: Effect of coil orientation on strength-duration time constant with controllable pulse parameter transcranial magnetic stimulation. Clinical Neurophysiology, 2014, 125, S123.	1. 5	4
133	On the stimulation depth of transcranial magnetic stimulation coils. Clinical Neurophysiology, 2015, 126, 843-844.	1.5	4
134	Online Switch Open-Circuit Fault Diagnosis Using Reconfigurable Scheduler for Modular Multilevel Converter with Parallel Connectivity. , 2019, , .		4
135	Physics and biophysics fundamentals of transcranial stimulation. , 0, , .		4
136	Application of Transcranial Magnetic Stimulation (TMS) in Psychophysiology., 0,, 120-138.		4
137	Effect of Pulse Duration and Direction on Plasticity Induced by 5 Hz Repetitive Transcranial Magnetic Stimulation in Correlation With Neuronal Depolarization. Frontiers in Neuroscience, 2021, 15, 773792.	2.8	4
138	Intensity- and timing-dependent modulation of motion perception with transcranial magnetic stimulation of visual cortex. Neuropsychologia, 2020, 147, 107581.	1.6	3
139	Static magnetic field modulates excitatory activity in layer II/III pyramidal neurons of the rat motor cortex. , 2013 , , .		2
140	Topography of seizures induced by electroconvulsive therapy and magnetic seizure therapy. , 2013, , .		2
141	Closed-Loop Predictively Optimizing Control for Modular Multilevel Converter with Parallel Connectivity. , 2019, , .		2
142	Comparing temporal interference stimulation and other kilohertz stimulation modalities using computational models. Brain Stimulation, 2021, 14, 1679.	1.6	2
143	Controllable pulse parameter transcranial magnetic stimulator with enhanced pulse shaping. , 2013, , .		1
144	Reduction of TMS Strength Near MRI Scanner Could be Explained by Electromagnetic Coupling to MRI Magnet. Brain Stimulation, 2014, 7, 916-917.	1.6	1

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#	Article	IF	CITATIONS
145	S17.4 Devices for controllable pulse parameter transcranial magnetic stimulation (cTMS): overview of capabilities. Clinical Neurophysiology, 2011, 122, S41.	1.5	0
146	Transcranial magnetic stimulation induces current pulses in transcranial direct current stimulation electrodes., 2012, 2012, 811-4.		0
147	Effects of transcranial magnetic stimulation coil orientation and pulse width on short-latency afferent inhibition. Brain Stimulation, 2015, 8, 379-380.	1.6	0