Angel Peterchev

List of Publications by Year
in descending order

147 papers	12,540 citations	61857 43 h-index	30848 102 g-index
180 all docs	180 docs citations	180 times ranked	8955 citing authors

#	Article	IF	Citations
1	Using diffusion tensor imaging to effectively target TMS to deep brain structures. NeuroImage, 2022, 249, 118863.	2.1	19
2	Modular multilevel TMS device with wide output range and ultrabrief pulse capability for sound reduction. Journal of Neural Engineering, 2022, 19, 026008.	1.8	23
3	A wireless millimetric magnetoelectric implant for the endovascular stimulation of peripheral nerves. Nature Biomedical Engineering, 2022, 6, 706-716.	11.6	80
4	Multichannel power electronics and magnetic nanoparticles for selective thermal magnetogenetics. Journal of Neural Engineering, 2022, 19, 026015.	1.8	12
5	TAP: targeting and analysis pipeline for optimization and verification of coil placement in transcranial magnetic stimulation. Journal of Neural Engineering, 2022, 19, 026050.	1.8	14
6	Characterizing the short-latency evoked response to intracortical microstimulation across a multi-electrode array. Journal of Neural Engineering, 2022, 19, 026044.	1.8	17
7	Isolating two sources of variability of subcortical stimulation to quantify fluctuations of corticospinal tract excitability. Clinical Neurophysiology, 2022, 138, 134-142.	0.7	14
8	Transcranial magnetic stimulation of the brain: What is stimulated? â€“ A consensus and critical position paper. Clinical Neurophysiology, 2022, 140, 59-97.	0.7	124
9	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.	3.7	12
10	A Reduced Series/Parallel Module for Cascade Multilevel Static Compensators Supporting Sensorless Balancing. IEEE Transactions on Industrial Electronics, 2021, 68, 15-24.	5.2	25
11	Rapid, Dose-Dependent Enhancement of Cerebral Blood Flow by transcranial AC Stimulation in Mouse. Brain Stimulation, 2021, 14, 80-87.	0.7	16
12	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.	0.7	553
13	Fast computational optimization of TMS coil placement for individualized electric field targeting. NeuroImage, 2021, 228, 117696.	2.1	61
14	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.	4.0	25
15	Transcranial alternating current stimulation entrains alpha oscillations by preferential phase synchronization of fast-spiking cortical neurons to stimulation waveform. Nature Communications, 2021, 12, 3151.	5.8	74
16	Double-Containment Coil With Enhanced Winding Mounting for Transcranial Magnetic Stimulation With Reduced Acoustic Noise. IEEE Transactions on Biomedical Engineering, 2021, 68, 2233-2240.	2.5	12
17	Networkâ€based rTMS to modulate working memory: The difficult choice of effective parameters for online interventions. Brain and Behavior, 2021, 11, e2361.	1.0	9
18	A High-Frequency Pulsating DC-Link for Electric Vehicle Drives with Reduced Losses. , 2021, , .		8

#	Article	IF	Citations
19	Comparing temporal interference stimulation and other kilohertz stimulation modalities using computational models. Brain Stimulation, 2021, 14, 1679.	0.7	2
20	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.	1.4	4
21	Conditions for numerically accurate TMS electric field simulation. Brain Stimulation, 2020, 13, 157-166.	0.7	68
22	Simulation of transcranial magnetic stimulation in head model with morphologically-realistic cortical neurons. Brain Stimulation, 2020, 13, 175-189.	0.7	193
23	Structural Controllability Predicts Functional Patterns and Brain Stimulation Benefits Associated with Working Memory. Journal of Neuroscience, 2020, 40, 6770-6778.	1.7	19
24	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.	5.4	12
25	Intensity- and timing-dependent modulation of motion perception with transcranial magnetic stimulation of visual cortex. Neuropsychologia, 2020, 147, 107581.	0.7	3
26	Site-Specific Effects of Online rTMS during a Working Memory Task in Healthy Older Adults. Brain Sciences, 2020, 10, 255.	1.1	28
27	Sound comparison of seven TMS coils at matched stimulation strength. Brain Stimulation, 2020, 13, 873-880.	0.7	31
28	Transcranial Magnetic Stimulation: Principles and Applications. , 2020, , 245-270.		11
29	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.	1.0	5
30	Older adults benefit from more widespread brain network integration during working memory. NeuroImage, 2020, 218, 116959.	2.1	20
31	Modular Multilevel Series/Parallel Converter With Switched-Inductor Energy Transfer Between Modules. IEEE Transactions on Power Electronics, 2019, 34, 4844-4852.	5.4	10
32	Transcranial electrical stimulation nomenclature. Brain Stimulation, 2019, 12, 1349-1366.	0.7	84
33	Statistical Model of Motor-Evoked Potentials. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2019, 27, 1539-1545.	2.7	26
34	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.	2.7	18
35	Accuracy of robotic coil positioning during transcranial magnetic stimulation. Journal of Neural Engineering, 2019, 16, 054003.	1.8	26
36	Online repetitive transcranial magnetic stimulation during working memory in younger and older adults: A randomized within-subject comparison. PLoS ONE, 2019, 14, e0213707.	1.1	45

#	Article	IF	Citations
37	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.	1.6	85
38	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.	3.3	46
39	Different parallel connections generated by the Modular Multilevel Series/Parallel Converter: an overview. , 2019, , .		8
40	Closed-Loop Predictively Optimizing Control for Modular Multilevel Converter with Parallel Connectivity. , 2019, , .		2
41	Online Switch Open-Circuit Fault Diagnosis Using Reconfigurable Scheduler for Modular Multilevel Converter with Parallel Connectivity. , 2019, , .		4
42	Current Injection Methods for Ripple-Current Suppression in Delta-Configured Split-Battery Energy Storage. IEEE Transactions on Power Electronics, 2019, 34, 7411-7421.	5.4	21
43	A Modular Multilevel Series/Parallel Converter for a Wide Frequency Range Operation. IEEE Transactions on Power Electronics, 2019, 34, 9854-9865.	5.4	34
44	Module Implementation and Modulation Strategy for Sensorless Balancing in Modular Multilevel Converters. IEEE Transactions on Power Electronics, 2019, 34, 8405-8416.	5.4	44
45	Modified cable equation incorporating transverse polarization of neuronal membranes for accurate coupling of electric fields. Journal of Neural Engineering, 2018, 15, 026003.	1.8	28
46	Redesigning existing transcranial magnetic stimulation coils to reduce energy: application to low field magnetic stimulation. Journal of Neural Engineering, 2018, 15, 036022.	1.8	33
47	International randomized-controlled trial of transcranial Direct Current Stimulation in depression. Brain Stimulation, 2018, 11, 125-133.	0.7	151
48	Field Distribution of Transcranial Static Magnetic Stimulation in Realistic Human Head Model. Neuromodulation, 2018, 21, 340-347.	0.4	19
49	Complementary topology of maintenance and manipulation brain networks in working memory. Scientific Reports, 2018, 8, 17827.	1.6	14
50	Noninvasive Detection of Motor-Evoked Potentials in Response to Brain Stimulation Below the Noise Floorâ€"How Weak Can a Stimulus Be and Still Stimulate. , 2018, 2018, 2687-2690.		13
51	Electric field measurement of two commercial active/sham coils for transcranial magnetic stimulation. Journal of Neural Engineering, 2018, 15, 054001.	1.8	47
52	Coupling Magnetically Induced Electric Fields to Neurons: Longitudinal and Transverse Activation. Biophysical Journal, 2018, 115, 95-107.	0.2	47
53	Integrated Flexible Conversion Circuit between a Flexible Photovoltaic and Supercapacitors for Powering Wearable Sensors. Journal of the Electrochemical Society, 2018, 165, B3122-B3129.	1.3	23
54	Biophysically realistic neuron models for simulation of cortical stimulation. Journal of Neural Engineering, 2018, 15, 066023.	1.8	106

#	Article	IF	Citations
55	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.	1.1	15
56	Design of transcranial magnetic stimulation coils with optimal trade-off between depth, focality, and energy. Journal of Neural Engineering, 2018, 15, 046033.	1.8	76
57	Control of Modular Multilevel Converter With Parallel Connectivityâ€"Application to Battery Systems. IEEE Transactions on Power Electronics, 2017, 32, 8381-8392.	5.4	92
58	Minimum Electric Field Exposure for Seizure Induction with Electroconvulsive Therapy and Magnetic Seizure Therapy. Neuropsychopharmacology, 2017, 42, 1192-1200.	2.8	23
59	Photovoltaic multilevel inverter with distributed maximum power point tracking and dynamic circuit reconfiguration. , 2017, , .		20
60	Pulse Width Affects Scalp Sensation of Transcranial Magnetic Stimulation. Brain Stimulation, 2017, 10, 99-105.	0.7	14
61	Submodule short-circuit fault diagnosis based on wavelet transform and support vector machines for modular multilevel converter with series and parallel connectivity. , 2017, , .		15
62	Ripple current suppression methods for star-configured modular multilevel converters. , 2017, , .		16
63	Distributed balancing control for modular multilevel series/parallel converter with capability of sensorless operation. , 2017, , .		36
64	Predictive control of modular multilevel series/parallel converter for battery systems. , 2017, , .		15
65	Transcranial electric stimulation seen from within the brain. ELife, 2017, 6, .	2.8	8
66	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.	0.1	65
67	Sensorless scheduling of the modular multilevel series-parallel converter: enabling a flexible, efficient, modular battery. , 2016, , .		23
68	Effect of coil orientation on strengthâ€"duration time constant and I-wave activation with controllable pulse parameter transcranial magnetic stimulation. Clinical Neurophysiology, 2016, 127, 675-683.	0.7	99
69	Enhancement of Neuromodulation with Novel Pulse Shapes Generated by Controllable Pulse Parameter Transcranial Magnetic Stimulation. Brain Stimulation, 2016, 9, 39-47.	0.7	61
70	Subject-Specific Multiscale Modeling to Investigate Effects of Transcranial Magnetic Stimulation. Neuromodulation, 2015, 18, 694-704.	0.4	37
71	Electric Field Model of Transcranial Electric Stimulation in Nonhuman Primates: Correspondence to Individual Motor Threshold. IEEE Transactions on Biomedical Engineering, 2015, 62, 2095-2105.	2.5	42
72	Individualized Low-Amplitude Seizure Therapy: Minimizing Current for Electroconvulsive Therapy and Magnetic Seizure Therapy. Neuropsychopharmacology, 2015, 40, 2076-2084.	2.8	33

#	Article	IF	Citations
73	Quiet transcranial magnetic stimulation: Status and future directions. , 2015, 2015, 226-9.		16
74	Impulse Noise of Transcranial Magnetic Stimulation: Measurement, Safety, and Auditory Neuromodulation. Brain Stimulation, 2015, 8, 161-163.	0.7	24
75	On the characterization of coils for deep transcranial magnetic stimulation. Clinical Neurophysiology, 2015, 126, 1456-1457.	0.7	5
76	On the stimulation depth of transcranial magnetic stimulation coils. Clinical Neurophysiology, 2015, 126, 843-844.	0.7	4
77	Transcranial direct current stimulation (tDCS) of frontal cortex decreases performance on the WAIS-IV intelligence test. Behavioural Brain Research, 2015, 290, 32-44.	1.2	53
78	Effects of transcranial magnetic stimulation coil orientation and pulse width on short-latency afferent inhibition. Brain Stimulation, 2015, 8, 379-380.	0.7	0
79	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.	2.7	44
80	Modular Multilevel Converter With Series and Parallel Module Connectivity: Topology and Control. IEEE Transactions on Power Electronics, 2015, 30, 203-215.	5.4	114
81	Stimulation strength and focality of electroconvulsive therapy and magnetic seizure therapy in a realistic head model. , 2014, 2014, 410-3.		13
82	Approximating transcranial magnetic stimulation with electric stimulation in mouse: A simulation study. , 2014, 2014, 6129-32.		11
83	Magnetic Field Strength and Reproducibility of Neodymium Magnets Useful for Transcranial Static Magnetic Field Stimulation of the Human Cortex. Neuromodulation, 2014, 17, 438-442.	0.4	37
84	Reduction of TMS Strength Near MRI Scanner Could be Explained by Electromagnetic Coupling to MRI Magnet. Brain Stimulation, 2014, 7, 916-917.	0.7	1
85	Modeling transcranial electric stimulation in mouse: A high resolution finite element study. , 2014, 2014, 406-9.		8
86	Transcranial Magnetic Stimulation Device With Reduced Acoustic Noise. IEEE Magnetics Letters, 2014, 5, 1-4.	0.6	16
87	Controllable pulse parameter transcranial magnetic stimulator with enhanced circuit topology and pulse shaping. Journal of Neural Engineering, 2014, 11, 056023.	1.8	69
88	A Novel Model Incorporating Two Variability Sources for Describing Motor Evoked Potentials. Brain Stimulation, 2014, 7, 541-552.	0.7	67
89	P282: Effect of coil orientation on strength-duration time constant with controllable pulse parameter transcranial magnetic stimulation. Clinical Neurophysiology, 2014, 125, S123.	0.7	4
90	Simultaneous transcranial magnetic stimulation and single-neuron recording in alert non-human primates. Nature Neuroscience, 2014, 17, 1130-1136.	7.1	123

#	Article	IF	Citations
91	Coil design considerations for deep transcranial magnetic stimulation. Clinical Neurophysiology, 2014, 125, 1202-1212.	0.7	222
92	Transcranial electric and magnetic stimulation. Handbook of Clinical Neurology / Edited By P J Vinken and G W Bruyn, 2013, 116, 329-342.	1.0	72
93	Anatomical variability predicts individual differences in transcranial electric stimulation motor threshold. , 2013, 2013, 815-8.		4
94	Pulse width dependence of motor threshold and inputâ€“output curve characterized with controllable pulse parameter transcranial magnetic stimulation. Clinical Neurophysiology, 2013, 124, 1364-1372.	0.7	115
95	Electric field depthâ€“focality tradeoff in transcranial magnetic stimulation: Simulation comparison of 50 coil designs. Brain Stimulation, 2013, 6, 1-13.	0.7	771
96	A 2.5D Integrated Voltage Regulator Using Coupled-Magnetic-Core Inductors on Silicon Interposer. IEEE Journal of Solid-State Circuits, 2013, 48, 244-254.	3.5	127
97	Controlling Stimulation Strength and Focality in Electroconvulsive Therapy via Current Amplitude and Electrode Size and Spacing. Journal of ECT, 2013, 29, 325-335.	0.3	14
98	Controllable pulse parameter transcranial magnetic stimulator with enhanced pulse shaping. , 2013, , .		1
99	Electric field characteristics of electroconvulsive therapy with individualized current amplitude: A preclinical study. , 2013, 2013, 3082-5.		5
100	Static magnetic field modulates excitatory activity in layer II/III pyramidal neurons of the rat motor cortex. , 2013, , .		2
101	Topography of seizures induced by electroconvulsive therapy and magnetic seizure therapy. , 2013, , .		2
102	Extended Remediation of Sleep Deprived-Induced Working Memory Deficits Using fMRI-guided Transcranial Magnetic Stimulation. Sleep, 2013, 36, 857-871.	0.6	57
103	Controlling Stimulation Strength and Focality in Electroconvulsive Therapy via Current Amplitude and Electrode Size and Spacing. Journal of ECT, 2013, 29, 321-331.	0.3	31
104	Analysis and Optimization of Pulse Dynamics for Magnetic Stimulation. PLoS ONE, 2013, 8, e55771.	1.1	35
105	Transcranial magnetic stimulation induces current pulses in transcranial direct current stimulation electrodes. , 2012, 2012, 811-4.		0
106	Stimulation strength and focality of electroconvulsive therapy with individualized current amplitude: A preclinical study. , 2012, 2012, 6430-3.		6
107	A model of variability in brain stimulation evoked responses. , 2012, 2012, 6434-7.		23
108	Optimization of magnetic neurostimulation waveforms for minimum power loss. , 2012, 2012, 4652-5.		13

#	Article	IF	Citations
109	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.	3.5	49
110	Fundamentals of transcranial electric and magnetic stimulation dose: Definition, selection, and reporting practices. Brain Stimulation, 2012, 5, 435-453.	0.7	339
111	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.	2.1	98
112	A 2.5D integrated voltage regulator using coupled-magnetic-core inductors on silicon interposer delivering 10.8A/mm². , 2012, , .		19
113	An integrated four-phase buck converter delivering 1A/mm² with 700ps controller delay and network-on-chip load in 45-nm SOI. , 2011, , .		7
114	Circuit topology comparison and design analysis for controllable pulse parameter transcranial magnetic stimulators. , 2011, , .		9
115	Repetitive transcranial magnetic stimulator with controllable pulse parameters. Journal of Neural Engineering, 2011, 8, 036016.	1.8	78
116	S17.4 Devices for controllable pulse parameter transcranial magnetic stimulation (cTMS): overview of capabilities. Clinical Neurophysiology, 2011, 122, S41.	0.7	0
117	Seizure Induction With Low-Amplitudeâ€“Current (0.5 A) Electroconvulsive Therapy. Journal of ECT, 2011, 27, 342.	0.3	16
118	Transcranial magnetic stimulation coil with electronically switchable active and sham modes. , 2011, 2011, 1993-6.		8
119	Influence of white matter conductivity anisotropy on electric field strength induced by electroconvulsive therapy. , 2011, 2011, 5473-6.		7
120	Electric field strength and focality in electroconvulsive therapy and magnetic seizure therapy: a finite element simulation study. Journal of Neural Engineering, 2011, 8, 016007.	1.8	152
121	Electroconvulsive Therapy Stimulus Parameters. Journal of ECT, 2010, 26, 159-174.	0.3	163
122	Regional electric field induced by electroconvulsive therapy: A finite element simulation study. , 2010, 2010, 2045-8.		14
123	Electroconvulsive therapy in the presence of deep brain stimulation implants: Electric field effects. , 2010, 2010, 2049-52.		5
124	Transcranial magnetic stimulation in the presence of deep brain stimulation implants: Induced electrode currents. , 2010, 2010, 6821-4.		13
125	Repetitive transcranial magnetic stimulator with controllable pulse parameters (cTMS). , 2010, 2010, 2922-6.		11
126	Effect of anatomical variability on neural stimulation strength and focality in electroconvulsive therapy (ECT) and magnetic seizure therapy (MST). , 2009, 2009, 682-8.		27

#	Article	IF	Citations
127	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.	2.8	64
128	Consensus: New methodologies for brain stimulation. Brain Stimulation, 2009, 2, 2-13.	0.7	100
129	Safety, ethical considerations, and application guidelines for the use of transcranial magnetic stimulation in clinical practice and research. Clinical Neurophysiology, 2009, 120, 2008-2039.	0.7	4,364
130	A Transcranial Magnetic Stimulator Inducing Near-Rectangular Pulses With Controllable Pulse Width (cTMS). IEEE Transactions on Biomedical Engineering, 2008, 55, 257-266.	2.5	142
131	Coil design considerations for deep-brain transcranial magnetic stimulation (dTMS). , 2008, 2008, 5675-9.		41
132	Magnetic Seizure Therapy for the Treatment of Depression. , 2007, , 155-171.		5
133	In vitro modulation of endogenous rhythms by AC electric fields: Syncing with clinical brain stimulation. Journal of Physiology, 2007, 584, 369-370.	1.3	14
134	Digital Multimode Buck Converter Control With Loss-Minimizing Synchronous Rectifier Adaptation. IEEE Transactions on Power Electronics, 2006, 21, 1588-1599.	5.4	94
135	Load-Line Regulation With Estimated Load-Current Feedforward: Application to Microprocessor Voltage Regulators. IEEE Transactions on Power Electronics, 2006, 21, 1704-1717.	5.4	75
136	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.	3.5	210
137	Architecture and IC implementation of a digital VRM controller. IEEE Transactions on Power Electronics, 2003, 18, 356-364.	5.4	331
138	Quantization resolution and limit cycling in digitally controlled PWM converters. IEEE Transactions on Power Electronics, 2003, 18, 301-308.	5.4	554
139	Quantization resolution and limit cycling in digitally controlled PWM converters. , 0, , .		55
140	Architecture and IC implementation of a digital VRM controller. , 0, , .		42
141	Low conversion ratio VRM design. , 0, , .		19
142	Digital loss-minimizing multimode synchronous buck converter control. , 0, , .		15
143	Design of ceramic-capacitor VRM's with estimated load current feedforward. , 0, , .		21
144	A 4pA-quiescent-current dual-mode buck converter IC for cellular phone applications. , 0, , .		17

#	Article	IF	Citations
145	An ultra-low-power digitally-controlled buck converter IC for cellular phone applications. , 0, , .		40
146	Physics and biophysics fundamentals of transcranial stimulation. , 0, , .		4
147	Application of Transcranial Magnetic Stimulation (TMS) in Psychophysiology. , 0, , 120-138.		4