Zongqian Shi

List of Publications by Year
in descending order

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82 papers	1,057 citations	430874 18 h-index	477307 29 g-index
82 all docs	82 docs citations	82 times ranked	346 citing authors

#	Article	IF	Citations
1	Numerical simulation of vacuum arc under different axial magnetic fields. Journal Physics D: Applied Physics, 2005, 38, 1034-1041.	2.8	103
2	High-current vacuum arc under axial magnetic field: Numerical simulation and comparisons with experiments. Journal of Applied Physics, 2006, 100, 113304.	2.5	65
3	Modelling and simulation of anode activity in high-current vacuum arc. Journal Physics D: Applied Physics, 2009, 42, 145203.	2.8	58
4	Modeling and simulation of anode melting pool flow under the action of high-current vacuum arc. Journal of Applied Physics, 2010, 107, .	2.5	53
5	Experimental Investigation of Anode Activities in High-Current Vacuum Arcs. IEEE Transactions on Plasma Science, 2010, 38, 206-213.	1.3	47
6	3D Numerical simulation of high current vacuum arc in realistic magnetic fields considering anode evaporation. Journal of Applied Physics, 2015, 117, .	2.5	45
7	Three-dimensional model and simulation of vacuum arcs under axial magnetic fields. Physics of Plasmas, 2012, 19, .	1.9	41
8	Three-Dimensional Time-Dependent Model and Simulation of High-Current Vacuum Arc in Commercial Axial Magnetic Fields Vacuum Interrupters. IEEE Transactions on Plasma Science, 2013, 41, 2015-2021.	1.3	33
9	Numerical simulation of high-current vacuum arc characteristics under combined action of axial magnetic field and external magnetic field from bus bar. Physics of Plasmas, 2009, 16, .	1.9	31
10	Modeling of the anode surface deformation in high-current vacuum arcs with AMF contacts. Journal Physics D: Applied Physics, 2016, 49, 075202.	2.8	30
11	Transforming dielectric coated tungsten and platinum wires to gaseous state using negative nanosecond-pulsed-current in vacuum. Physics of Plasmas, 2014, 21, .	1.9	24
12	The equation of state and ionization equilibrium of dense aluminum plasma with conductivity verification. Physics of Plasmas, 2015, 22, .	1.9	21
13	Stepwise Simulation on the Motion of a Single Cathode Spot of Vacuum Arc in External Transverse Magnetic Field. IEEE Transactions on Plasma Science, 2015, 43, 472-479.	1.3	21
14	Investigations on the Motion of High-Current Vacuum-Arc Cathode Spots Under a Magnetic Field. IEEE Transactions on Plasma Science, 2011, 39, 1344-1348.	1.3	20
15	Experimental Study of Anode Activities in High Current Vacuum Arc Subjected to Axial Magnetic Fields Under Different Conditions. IEEE Transactions on Plasma Science, 2010, 38, 1682-1691.	1.3	19
16	Experimental Investigation on the Initial Expansion Process in a Drawn Vacuum Arc and the Influence of Axial Magnetic Field. IEEE Transactions on Plasma Science, 2012, 40, 528-534.	1.3	19
17	One-dimensional particle-in-cell simulation on the influence of electron and ion temperature on the sheath expansion process in the post-arc stage of vacuum circuit breaker. Physics of Plasmas, 2015, 22, .	1.9	19
18	Experimental investigation on the characteristics of the plasma jet of a low-current vacuum arc in axial magnetic fields. Journal Physics D: Applied Physics, 2016, 49, 135203.	2.8	19

#	Article	IF	Citations
19	Experimental Investigation on the Characteristics of Drawn Vacuum Arc in Initial Expanding Stage and in Forced Current-Zero Stage. IEEE Transactions on Plasma Science, 2011, 39, 1330-1335.	1.3	18
20	Experimental and numerical analysis of the magnetophoresis of magnetic nanoparticles under the influence of cylindrical permanent magnet. Journal of Magnetism and Magnetic Materials, 2019, 475, 703-714.	2.3	17
21	The Influence of Axial-Magnetic-Field Distribution on the Initial Expansion Process in Triggered Vacuum Arc. IEEE Transactions on Plasma Science, 2009, 37, 1452-1457.	1.3	16
22	Vacuum arc behavior and its voltage characteristics in drawing process controlled by composite magnetic fields along axial and transverse directions. Physics of Plasmas, 2015, 22, .	1.9	16
23	Influence of residual plasma drift velocity on the post-arc sheath expansion of vacuum circuit breakers. Physics of Plasmas, 2016, 23, .	1.9	15
24	Experimental investigation on the energy deposition and expansion rate under the electrical explosion of aluminum wire in vacuum. Journal of Applied Physics, 2015, 118, .	2.5	14
25	Modeling and Simulation of Deflected Anode Erosion in Vacuum Arcs. Plasma Science and Technology, 2014, 16, 226-231.	1.5	13
26	3-D Simulation of Plasma's Rotation Behavior in High Current Vacuum Arcs Under Realistic Spatial Magnetic Field Profile. IEEE Transactions on Plasma Science, 2014, 42, 2708-2709.	1.3	13
27	3-D Simulation of High-Current Vacuum Arcs Under Combined Effect of Actual Magnetic Field and External Transverse Magnetic Field. IEEE Transactions on Plasma Science, 2015, 43, 2275-2282.	1.3	13
28	Investigation on the Inclination of Cathode Plasma Jets in High-Current Vacuum Arcs in Magnetic Field. IEEE Transactions on Plasma Science, 2010, 38, 2914-2921.	1.3	12
29	Characteristics of the electrical explosion of fine metallic wires in vacuum. AIP Advances, 2017, 7, 095002.	1.3	12
30	The Combined Influence of Contact Gap and Axial Magnetic Field on the Expansion Speed of Cathode Spots in High-Current Triggered Vacuum Arc. IEEE Transactions on Plasma Science, 2014, 42, 185-190.	1.3	11
31	Factors affecting the exploding characteristics of tungsten wires with negative-polarity current. Physics of Plasmas, 2017, 24, .	1.9	11
32	MHD simulation of high-current subsonic vacuum arc under different distributed axial magnetic fields. Vacuum, 2007, 82, 100-104.	3.5	10
33	The calculation of electron chemical potential and ion charge state and their influence on plasma conductivity in electrical explosion of metal wire. Physics of Plasmas, 2014, 21, 032702.	1.9	10
34	Numerical Investigation on Residual Axial Magnetic Field in Vacuum Interrupter in DC Interruption Based on Artificial Current Zero. IEEE Transactions on Power Delivery, 2017, 32, 1915-1923.	4.3	10
35	The Influence of Protection Gas Pressure on the Descaling Process of Vacuum Arc in Removing Oxide Layer on Metal Surface. IEEE Transactions on Plasma Science, 2011, 39, 1585-1590.	1.3	9
36	Effects of load voltage on voltage breakdown modes of electrical exploding aluminum wires in air. Physics of Plasmas, 2015, 22, .	1.9	9

#	Article	IF	Citations
37	Experimental Investigation on Vacuum Arc Behaviors Subjected to Larger Diameter Cup-Shaped and Coil-Shaped Axial Magnetic Field Electrode. IEEE Transactions on Plasma Science, 2015, 43, 884-891.	1.3	9
38	Post-arc current simulation based on measurement in vacuum circuit breaker with a one-dimensional particle-in-cell model. Physics of Plasmas, 2017, 24, .	1.9	9
39	Stratification and filamentation instabilities in the dense core of exploding wires. Physics of Plasmas, 2020, 27, .	1.9	9
40	Numerical and experimental investigation of a magnetic micromixer under microwires and uniform magnetic field. Journal of Magnetism and Magnetic Materials, 2022, 551, 169141.	2.3	8
41	Numerical simulation on the formation and merging of ablation plasma in two exploding aluminum wires. Journal Physics D: Applied Physics, 2020, 53, 335201.	2.8	7
42	Experimental investigation on the energy deposition and morphology of the electrical explosion of copper wire in vacuum. Physics of Plasmas, 2016, 23, 032707.	1.9	6
43	Experimental Study on Deflection Behavior of Vacuum Arcs Under the Influence of External Transverse Magnetic Field. IEEE Transactions on Plasma Science, 2017, 45, 868-874.	1.3	6
44	The formation and evolution of the core-corona structure in the electrical explosion of aluminum wire in vacuum: experimental and numerical investigations. Journal Physics D: Applied Physics, 2017, 50, 315201.	2.8	6
45	Analysis of enhanced heat transfer by magnetic nanofluids in a mini channel under hard/soft-magnetic elements. Journal Physics D: Applied Physics, 2018, 51, 485001.	2.8	6
46	Electrical explosion of aluminum wire for preparation of nanoparticles: an experimental study. Journal Physics D: Applied Physics, 2019, 52, 425201.	2.8	6
47	Theoretical investigation of the microfluidic and magnetic field-assisted self-assembly of colloidal magnetic-plasmonic nanoparticles. Journal Physics D: Applied Physics, 2021, 54, 325004.	2.8	6
48	Removing Oxide Layers From Carbon-Steel Tubular Surfaces Using Vacuum Arcs Driven by Transverse Magnetic Field. IEEE Transactions on Plasma Science, 2013, 41, 2068-2073.	1.3	5
49	Three-dimensional numerical analysis of focusing and separation of diamagnetic particles in ferrofluid. Journal Physics D: Applied Physics, 2020, 53, 315002.	2.8	5
50	Experimental Investigation on the Current Carried by a Cathode Spot of Vacuum Arc in Axial Magnetic Fields. IEEE Transactions on Plasma Science, 2021, 49, 1648-1653.	1.3	5
51	Simulation of magnetophoresis of magnetic nanoparticles in liquids. Journal Physics D: Applied Physics, 2016, 49, 335005.	2.8	4
52	The Motion Characteristics of a Single Cathode Spot in Removing Oxide Layer on Metal Surface by Vacuum Arc. IEEE Transactions on Plasma Science, 2017, 45, 106-112.	1.3	4
53	Numerical Investigation on the Robson Drift of a Single Cathode Spot of Vacuum Arc. IEEE Transactions on Plasma Science, 2019, 47, 3442-3447.	1.3	4
54	Research on Fast Opening Process in Electromagnetic Repulsion Mechanism. IEEE Transactions on Magnetics, 2019, 55, 1-4.	2.1	4

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55	Investigation on the self-assembly of magnetic core-shell nanoparticles under soft-magnet element by using discrete element method. Journal of Magnetism and Magnetic Materials, 2019, 475, 152-159.	2.3	4
56	Continuous separation of magnetic beads using a Y-shaped microfluidic system integrated with hard-magnetic elements. Journal Physics D: Applied Physics, 2020, 53, 035004.	2.8	4
57	Experimental investigations on the post-arc current of the vacuum circuit breaker in an active mechanical DC circuit breaker. AIP Advances, 2021, 11, .	1.3	4
58	Study of post-arc residual plasma dissipation process of vacuum circuit breakers based on a 2D particle-in-cell model. Plasma Science and Technology, 2022, 24, 045401.	1.5	4
59	On-line condition monitoring system of medium-voltage switchgear. , 0, , .		3
60	Experimental and simulation of triggered vacuum arc under TMF-AMF contact. , 2016, , .		3
61	Experimental investigation of cathode spots and plasma jets behavior subjected to two kinds of axial magnetic field electrodes. Physics of Plasmas, 2016, 23, 043514.	1.9	3
62	Experimental Investigation on the Postarc Current in Vacuum Circuit Breakers and the Influence of Arcing Memory Effect. IEEE Transactions on Plasma Science, 2019, 47, 3508-3515.	1.3	3
63	Experimental Investigation on the Interruption Performance of Vacuum Interrupters With AMF and TMF Contacts in a Quench Protection Switch. IEEE Transactions on Plasma Science, 2019, 47, 3549-3553.	1.3	3
64	Evolution of stratification instability seeded by resistive inclusions in electrically exploding wires. Physics of Plasmas, 2021, 28, 063507.	1.9	3
65	Simulation study of influence of the outlet elastic baffle on pressure in arc chamber during the interrupting process of low-voltage circuit breaker. AIP Advances, 2021, 11, 065030.	1.3	3
66	Experimental Investigation on the Second Commutation Process of a Quench Protection Switch. IEEE Transactions on Plasma Science, 2018, 46, 1497-1502.	1.3	2
67	Numerical investigation on the dynamics of aluminum wire explosions. Physics of Plasmas, 2019, 26, 052703.	1.9	2
68	The Influence of Transient Interrupting Voltage on the Residual Plasma Dissipation in a 10kV Mechanical DC Vacuum Circuit Breaker. , 2021, , .		2
69	Post-arc current measurement and interruption performance of vacuum interrupter in DC interruption. Journal Physics D: Applied Physics, 2022, 55, 145204.	2.8	2
70	Numerical simulation of HCVA with considering the micro process of anode vapor. , 2016, , .		1
71	Experimental investigation on the influence of axial magnetic field on the lifetime of cathode spot of vacuum arc. , 2016, , .		1
72	Experimental investigation on the dynamic of cathode spot of vacuum arc in external transverse magnetic field. , 2016, , .		1

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73	Study of the influences of different factors on the charged particles absorbed by the post-arc anode during the post-arc sheath expansion process in vacuum circuit breakers. AIP Advances, 2021, 11, 015317.	1.3	1
74	High-throughput particle focusing and separation in split-recombination channel. Journal of Micromechanics and Microengineering, 2022, 32, 025007.	2.6	1
75	Current interruption tests of HVDC circuitâ€breakers: Requirements, methods and a testing case. IET Generation, Transmission and Distribution, 2022, 16, 2939-2946.	2.5	1
76	The characteristics of cathode spots in removing oxide layer on metal surface by vacuum arc. , 2016, , .		0
77	The effects of vacuum arc descaling on the properties of the cathode surface. , 2016, , .		0
78	The influences of different factors on the descaling effects in removing oxide layer on metal surface by vacuum arc. , 2016, , .		0
79	Study on the proportions of charged particles absorbed by post-arc anode in the post-arc phase of a vacuum circuit breaker. , 2016, , .		0
80	Influence of the dissociation unit on pressure and temperature distribution in arc chamber of ACB during the breaking process. AIP Advances, 2021, 11, 095115.	1.3	0
81	DC Interruption Performance of Vacuum Interrupters in a Quench Protection Switch Based on Forced Current Zero. , 2021, , .		0
82	Research on Interrupting Processes of A 10 kV Mechanical HVDC Circuit Breaker. , 2020, , .		0