

Boyang Shen

List of Publications by Year in descending order

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134
papers

2,142
citations

218677

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41
g-index

138
all docs

138
docs citations

138
times ranked

885
citing authors

#	ARTICLE	IF	CITATIONS
1	Review of the AC loss computation for HTS using H formulation. Superconductor Science and Technology, 2020, 33, 033002.	3.5	177
2	Overview of H -Formulation: A Versatile Tool for Modeling Electromagnetics in High-Temperature Superconductor Applications. IEEE Access, 2020, 8, 100403-100414.	4.2	151
3	A review of multi-energy hybrid power system for ships. Renewable and Sustainable Energy Reviews, 2020, 132, 110081.	16.4	92
4	Power dissipation in HTS coated conductor coils under the simultaneous action of AC and DC currents and fields. Superconductor Science and Technology, 2018, 31, 075005.	3.5	87
5	Origin of dc voltage in type II superconducting flux pumps: field, field rate of change, and current density dependence of resistivity. Journal Physics D: Applied Physics, 2016, 49, 11LT01.	2.8	72
6	Investigation and comparison of AC losses on stabilizer-free and copper stabilizer HTS tapes. Physica C: Superconductivity and Its Applications, 2017, 541, 40-44.	1.2	58
7	Investigation of AC losses in horizontally parallel HTS tapes. Superconductor Science and Technology, 2017, 30, 075006.	3.5	52
8	A kilo-ampere level HTS flux pump. Superconductor Science and Technology, 2019, 32, 074004.	3.5	48
9	Superconducting fault current limiter (SFCL): Experiment and the simulation from finite-element method (FEM) to power/energy system software. Energy, 2021, 234, 121251.	8.8	48
10	Operational research on a high- T_c rectifier-type superconducting flux pump. Superconductor Science and Technology, 2016, 29, 035015.	3.5	47
11	A Fuzzy Logic Energy Management Strategy for a Photovoltaic/Diesel/Battery Hybrid Ship Based on Experimental Database. Energies, 2018, 11, 2211.	3.1	47
12	HTS Persistent Current Switch Controlled by AC Magnetic Field. IEEE Transactions on Applied Superconductivity, 2016, 26, 1-4.	1.7	40
13	Nexus among Energy Consumption, Economic Growth, Urbanization and Carbon Emissions: Heterogeneous Panel Evidence Considering China's Regional Differences. Sustainability, 2018, 10, 2383.	3.2	40
14	Voltage-ampere characteristics of YBCO coated conductor under inhomogeneous oscillating magnetic field. Applied Physics Letters, 2016, 108, .	3.3	39
15	A Novel Energy Management Strategy for a Ship's Hybrid Solar Energy Generation System Using a Particle Swarm Optimization Algorithm. Energies, 2020, 13, 1380.	3.1	39
16	Hospital-oriented quad-generation (HOQG) – A combined cooling, heating, power and gas (CCHPG) system. Applied Energy, 2021, 300, 117382.	10.1	35
17	Design and simulation of superconducting Lorentz Force Electrical Impedance Tomography (LFEIT). Physica C: Superconductivity and Its Applications, 2016, 524, 5-12.	1.2	34
18	Study of Critical Current and n -Values of 2G HTS Tapes: Their Magnetic Field-Angular Dependence. Journal of Superconductivity and Novel Magnetism, 2018, 31, 3847-3854.	1.8	34

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19	Investigation of AC Loss in HTS Cross-Conductor Cables for Electrical Power Transmission. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-5.	1.7	34
20	Capacity planning and optimization for integrated energy system in industrial park considering environmental externalities. Renewable Energy, 2021, 167, 56-65.	8.9	34
21	Design of a Superconducting Magnet for Lorentz Force Electrical Impedance Tomography. IEEE Transactions on Applied Superconductivity, 2016, 26, 1-6.	1.7	32
22	Intelligent design of large-size HTS magnets for SMES and high-field applications: using a self-programmed GUI tool. Superconductor Science and Technology, 2021, 34, 095008.	3.5	30
23	Energy-saving superconducting power delivery from renewable energy source to a 100-MW-class data center. Applied Energy, 2022, 310, 118602.	10.1	30
24	Optimization study on the magnetic field of superconducting Halbach Array magnet. Physica C: Superconductivity and Its Applications, 2017, 538, 46-51.	1.2	29
25	Design for a Persistent Current Switch Controlled by Alternating Current Magnetic Field. IEEE Transactions on Applied Superconductivity, 2018, 28, 1-5.	1.7	27
26	Investigation on Power Dissipation in the Saturated Iron-Core Superconducting Fault Current Limiter. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-5.	1.7	27
27	Rotating Permanent Magnets Based Flux Pump for HTS No-Insulation Coil. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-6.	1.7	26
28	Study on Electrodynamic Suspension System with High-Temperature Superconducting Magnets for a High-Speed Maglev Train. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-5.	1.7	24
29	A half-bridge HTS transformerâ€“rectifier flux pump with two AC field-controlled switches. Superconductor Science and Technology, 2018, 31, 085002.	3.5	23
30	A 10ÂMW class data center with ultra-dense high-efficiency energy distribution: Design and economic evaluation of superconducting DC busbar networks. Energy, 2022, 250, 123820.	8.8	23
31	Superconducting fault current limiter (SFCL) for a power electronic circuit: experiment and numerical modelling. Superconductor Science and Technology, 2022, 35, 045010.	3.5	21
32	AC losses in horizontally parallel HTS tapes for possible wireless power transfer applications. Physica C: Superconductivity and Its Applications, 2017, 543, 35-40.	1.2	20
33	Development of an HTS Magnet for Ultra-Compact MRI System: Optimization Using Genetic Algorithm (GA) Method. IEEE Transactions on Applied Superconductivity, 2020, 30, 1-5.	1.7	19
34	Investigation on the Transformer-Rectifier Flux Pump for High Field Magnets. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-5.	1.7	18
35	Research Progress of Contactless Magnetization Technology: HTS Flux Pumps. IEEE Transactions on Applied Superconductivity, 2020, 30, 1-5.	1.7	18
36	Power Dissipation in the HTS Coated Conductor Tapes and Coils Under the Action of Different Oscillating Currents and Fields. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-5.	1.7	17

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37	Current Status in Building a Compact and Mobile HTS MRI Instrument. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-5.	1.7	17
38	HTS Transformerâ€œRectifier Flux Pump Optimization. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-5.	1.7	16
39	Build Charging Database of Linear-Motor Type Flux Pump and Analyze the Influence of DC-Bias Field Using Fixed Step Size Search Algorithm. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-5.	1.7	16
40	Conceptual Design and Optimisation of HTS Roebel Tapes. IEEE Transactions on Applied Superconductivity, 2022, 32, 1-5.	1.7	16
41	Magnetization of Coated Conductor Stacks Using Flux Pumping. IEEE Transactions on Applied Superconductivity, 2017, 27, 1-5.	1.7	15
42	A HTS Flux Pump Simulation Methodology Based on the Electrical Circuit. IEEE Transactions on Applied Superconductivity, 2020, 30, 1-5.	1.7	15
43	Nexus among energy consumption structure, energy intensity, population density, urbanization, and carbon intensity: a heterogeneous panel evidence considering differences in electrification rates. Environmental Science and Pollution Research, 2022, 29, 19224-19243.	5.3	15
44	Power flow analysis and optimal locations of resistive type superconducting fault current limiters. SpringerPlus, 2016, 5, 1972.	1.2	14
45	Second harmonic in the voltage of dc-carrying YBCO tape under a perpendicular alternating magnetic field. Physica C: Superconductivity and Its Applications, 2019, 564, 11-16.	1.2	14
46	Persistent Current Switch for HTS Superconducting Magnets: Design, Control Strategy, and Test Results. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-4.	1.7	14
47	Impact of Stabilizer Layers on the Thermal-Electromagnetic Characteristics of Direct Current Carrying HTS Coated Conductors under Perpendicular AC Magnetic Fields. IEEE Transactions on Applied Superconductivity, 2020, , 1-1.	1.7	14
48	Numerical Study on Dynamic Resistance of an HTS Switch Made of Series-Connected YBCO Stacks. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-6.	1.7	13
49	Superconducting fault current limiter (SFCL) for fail-safe DC-DC conversion: From power electronic device to micro grid protection. , 2022, 1, 100003.		13
50	The instantaneous dynamic resistance voltage of DC-carrying REBCO tapes to AC magnetic field. Physica C: Superconductivity and Its Applications, 2021, 583, 1353853.	1.2	12
51	Analysis of AC Transport Loss in Conductor on Round Core Cables. Journal of Superconductivity and Novel Magnetism, 2022, 35, 57-63.	1.8	12
52	An HTS power switch using YBCO thin film controlled by AC magnetic field. Superconductor Science and Technology, 2019, 32, 095007.	3.5	11
53	A New Concept of a Hybrid Trapped Field Magnet. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-5.	1.7	11
54	Study of the Pulsed Field Magnetization Strategy for the Superconducting Rotor. IEEE Transactions on Applied Superconductivity, 2016, 26, 1-5.	1.7	10

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55	Feedback Control of a Rectifier Type HTS Flux Pump: Stabilizing Load Current With Minimized Losses. IEEE Transactions on Applied Superconductivity, 2017, 27, 1-4.	1.7	10
56	Evaluating the Investment Efficiency of China's Provincial Power Grid Enterprises under New Electricity Market Reform: Empirical Evidence Based on Three-Stage DEA Model. Energies, 2019, 12, 3524.	3.1	10
57	Performance Evaluation of Conductor on Round Core Cables Used in High Capacity Superconducting Transformers. IEEE Transactions on Applied Superconductivity, 2020, 30, 1-5.	1.7	10
58	Effect of TiO ₂ coating on the surface condition and corona characteristics of positive DC conductors with particle matters. High Voltage, 2022, 7, 147-157.	4.7	10
59	Analysis of the Electrical and Thermal Properties for Magnetic Fe ₃ O ₄ -Coated SiC-Filled Epoxy Composites. Polymers, 2021, 13, 3028.	4.5	10
60	Research On the Application of Superconducting Magnetic Energy Storage in the Wind Power Generation System For Smoothing Wind Power Fluctuations. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-5.	1.7	9
61	Numerical Study on AC Loss Characteristics of Conductor on Round Core Cables Under Transport Current and Magnetic Field. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-4.	1.7	9
62	Modelling analysis of periodically arranged high-temperature superconducting tapes. Physica C: Superconductivity and Its Applications, 2020, 578, 1353747.	1.2	8
63	Applied Superconductivity and Electromagnetic Devices - Principles and Current Exploration Highlights. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-29.	1.7	8
64	Charging Optimization of a YBCO Racetrack Coil With a Linear-Motor Type Flux Pump for an HTS Synchronous Motor. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-5.	1.7	8
65	Numerical Modelling of the Dynamic Voltage in HTS Materials under the Action of DC Transport Currents and Different Oscillating Magnetic Fields. Materials, 2022, 15, 795.	2.9	8
66	Fundamental Design and Modelling of the Superconducting Magnet for the High-Speed Maglev: Mechanics, Electromagnetics, and Loss Analysis during Instability. Machines, 2022, 10, 113.	2.2	8
67	Optimisation of Energy Efficiency: Dynamic Voltages in Superconducting Tapes to Energise Superconducting Power/Energy Applications. Electronics (Switzerland), 2022, 11, 1098.	3.1	8
68	Influences of the Resistive SFCL on the Incremental Power Frequency Relay of Transmission Lines. IEEE Transactions on Applied Superconductivity, 2019, 29, 1-7.	1.7	7
69	The Role of Space Charge on Corona Inception Threshold Conditions in Rod-Plane Air Gaps at DC/AC Combined Voltages. IEEE Access, 2021, 9, 125496-125507.	4.2	7
70	Analysis on the Effect of Superconductor Layer Thickness on the AC Loss of Conductor on Round Core (CORC) Cables. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-4.	1.7	7
71	Superconducting Conductor on Round Core (CORC) Cables: 2D or 3D Modeling?. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-5.	1.7	7
72	A Simplified Model of the Field Dependence for HTS Conductor on Round Core (CORC) Cables. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-5.	1.7	7

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73	Transient Modeling and Loss Analysis of SiC MOSFETs at Cryogenic and Room Temperatures. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-4.	1.7	7
74	Impact of Magnetic Substrate on Dynamic Loss and Magnetization Loss of HTS Coated Conductors. IEEE Transactions on Applied Superconductivity, 2022, 32, 1-5.	1.7	7
75	HTS Flux Pump Charging an HTS Coil: Experiment and Modeling. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-5.	1.7	6
76	MATLAB Implementation of an HTS Transformer-Rectifier Flux Pump Using HTS Dynamic Voltage Switches. IEEE Transactions on Applied Superconductivity, 2022, 32, 1-4.	1.7	6
77	The Numerical Study on ac Loss and Thermal Behavior in Bulk High-Temperature Superconductors. Journal of Superconductivity and Novel Magnetism, 2017, 30, 2445-2449.	1.8	5
78	Dynamics and concentration variations of fine particles of different sizes in the vicinity of DC conductors. Applied Physics Letters, 2020, 117, .	3.3	5
79	Numerical Study on Effect of Current Injection Methods on Terminal Resistance of Superconducting Compact Cables. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-5.	1.7	5
80	Magnetization Loss Characteristics in Superconducting Conductor on Round Core Cables With a Copper Former. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-4.	1.7	5
81	Charging an HTS Coil: Flux Pump With an HTS Square Bridge. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-5.	1.7	5
82	Numerical Investigation of AC Loss in HTS Bulks Subjected to Rotating Magnetic Fields. , 2021, , .		5
83	A Novel Switch Design for Compact HTS Flux Pump. IEEE Transactions on Applied Superconductivity, 2022, 32, 1-5.	1.7	5
84	Field Canceling Effect in Double-Layer Roebel Tapes. IEEE Transactions on Applied Superconductivity, 2022, 32, 1-5.	1.7	5
85	Uniform Magnetic Field Mapping With HTS Coils: Conceptual Design and Optimization. IEEE Transactions on Applied Superconductivity, 2016, 26, 1-5.	1.7	4
86	Numerical Study on AC Loss of an HTS Coil Placed on Laminated Silicon Steel Sheets With Distorted AC Transport Currents. IEEE Transactions on Applied Superconductivity, 2020, 30, 1-5.	1.7	4
87	A new vision of short-time and long-time AC loss measurement and modelling: A superconducting power electronic circuit. Cryogenics, 2021, 118, 103348.	1.7	4
88	Losses in the Saturated Iron-Core Superconducting Fault Current Limiter For VSC-HVDC System. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-5.	1.7	4
89	Optimization of Inductive Superconducting Fault Current Limiter for Distribution Networks. IEEE Transactions on Applied Superconductivity, 2021, 31, 1-5.	1.7	4
90	Thermal Behavior Modelling of a Fast AC Field Controlled HTS Switch. IEEE Transactions on Applied Superconductivity, 2022, 32, 1-5.	1.7	4

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91	Three-Dimensional Numerical Characterization of High-Temperature Superconductor Bulks Subjected to Rotating Magnetic Fields. <i>Energies</i> , 2022, 15, 3186.	3.1	4
92	Experimental Study on Corona Onset Characteristics of Small Curvature Electrode Under Combined AC&DC Voltages. <i>IEEE Transactions on Dielectrics and Electrical Insulation</i> , 2022, 29, 1785-1794.	2.9	4
93	AC Loss Analysis on HTS CrossConductor (CroCo) Cables for Power Transmission. , 2018, , .		3
94	AC Loss Analysis of High-Temperature Superconducting Current Leads With Nonsinusoidal Current Waveform. <i>IEEE Transactions on Applied Superconductivity</i> , 2019, 29, 1-4.	1.7	3
95	Transient Characteristics of YBCO Tapes Under Pulsed Current and Pressures. <i>IEEE Transactions on Applied Superconductivity</i> , 2020, 30, 1-6.	1.7	3
96	Concept Design of a Portable Superconducting Transformer Based on Conductors in Tube Cables. <i>IEEE Transactions on Applied Superconductivity</i> , 2021, 31, 1-5.	1.7	3
97	A Novel All-Superconducting Propulsion and Protection System for the HTS Maglev: Concept, Experimental Verification and Planning. <i>IEEE Transactions on Applied Superconductivity</i> , 2021, 31, 1-5.	1.7	3
98	Steady-state over-current safe operation area (SOA) of the SiC MOSFET at cryogenic and room temperatures. <i>Cryogenics</i> , 2022, 122, 103424.	1.7	3
99	Modeling of an Axial Field Machine (AFM) With Superconducting Windings. <i>IEEE Transactions on Applied Superconductivity</i> , 2022, 32, 1-5.	1.7	3
100	Research on Improving the Partial Discharge Initial Voltage of SiC/EP Composites by Utilizing Filler Surface Modification and Nanointerface Interaction. <i>Polymers</i> , 2022, 14, 2297.	4.5	3
101	Active Quenching Technique for YBCO Tapes: Quench Acceleration and Protection. <i>Journal of Superconductivity and Novel Magnetism</i> , 2018, 31, 3465-3474.	1.8	2
102	AC Loss Evaluation of Poloidal Field for Experimental and Advanced Superconducting Tokamak. <i>IEEE Transactions on Applied Superconductivity</i> , 2019, 29, 1-5.	1.7	2
103	Numerical Study of the Influence of the Encapsulation Layer on the DC Over-Current Performance of HTS Coated Conductors. <i>IEEE Transactions on Applied Superconductivity</i> , 2020, 30, 1-5.	1.7	2
104	AC Loss of Bi-2212 Round Wire at Wide Frequency Ranges up to 500 kHz. <i>IEEE Transactions on Applied Superconductivity</i> , 2021, 31, 1-10.	1.7	2
105	Quench Protection Modeling of an HTS Magnet for MRI System. <i>IEEE Transactions on Applied Superconductivity</i> , 2021, 31, 1-5.	1.7	2
106	Research on the Compound Optimization Method of the Electrical and Thermal Properties of SiC/EP Composite Insulating Material. <i>Polymers</i> , 2021, 13, 3369.	4.5	2
107	HTS Joint Resistance for High-Field Magnets: Experiment and Temperature-Dependent Modeling. <i>Journal of Superconductivity and Novel Magnetism</i> , 2022, 35, 1089-1098.	1.8	2
108	An ultra&low&loss superconducting inductor for power electronic circuits. <i>IET Power Electronics</i> , 2022, 15, 877-885.	2.1	2

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109	AC loss modeling of stacked HTS strips with economic analysis. <i>Physica C: Superconductivity and Its Applications</i> , 2022, 596, 1354048.	1.2	2
110	Investigation of Critical Current on Magnetic and Non-magnetic HTS Tape. , 2018, , .		1
111	Investigation and Comparison of Critical Current on Magnetic and Nonmagnetic HTS Tape Under Controllable Current Ramp Rate. <i>IEEE Transactions on Applied Superconductivity</i> , 2019, 29, 1-4.	1.7	1
112	Study on Reducing the Maximum Perpendicular Magnetic Field of HTS Coils Used on Synchronous Generator Armatures. <i>IEEE Transactions on Applied Superconductivity</i> , 2019, 29, 1-5.	1.7	1
113	Normal Zone Propagation Velocity and Minimum Quench Energy of Stainless Steel Double-Layered Superconducting Wires Under External Magnetic Fields. <i>Journal of Superconductivity and Novel Magnetism</i> , 2020, 33, 591-597.	1.8	1
114	Influence of the Normal Zone Propagation Velocity on the Thermal Performance of HTS Coated Conductors Under DC Over-Current Impact. <i>IEEE Transactions on Applied Superconductivity</i> , 2020, 30, 1-4.	1.7	1
115	Design, Fabrication and Performance Evaluation of Conductors in Tube Cables. <i>IEEE Transactions on Applied Superconductivity</i> , 2021, 31, 1-5.	1.7	1
116	Saturated Iron-core Superconducting Fault Current Limiter for VSC Network: System Modeling With Loss Analysis. <i>IEEE Transactions on Applied Superconductivity</i> , 2021, 31, 1-4.	1.7	1
117	Numerical Study on Ring-shape Superconducting Trapped Field Magnet Based on Circuit Model. <i>IEEE Transactions on Applied Superconductivity</i> , 2021, 31, 1-5.	1.7	1
118	Ramping Loss Analysis of No-Insulation HTS Coil Under External Field Using an Improved Equivalent Circuit Model. <i>IEEE Transactions on Applied Superconductivity</i> , 2021, 31, 1-5.	1.7	1
119	An ameliorative whale optimization algorithm (AWOA) for HES energy management strategy optimization. <i>Regional Studies in Marine Science</i> , 2021, 48, 102033.	0.7	1
120	Soldering Technique for the Ultra Low Resistance for a kA Level HTS Flux Pump. , 2020, , .		1
121	AC Loss Simulation of High Temperature Superconducting Current Leads with Non-sinusoidal Current Waveform. , 2018, , .		0
122	Influences of SFCLs on the Incremental Power Frequency Relay of Transmission Line. , 2018, , .		0
123	Low Resistance Soldering and Installation for a kA Level HTS Flux Pump. <i>IEEE Transactions on Applied Superconductivity</i> , 2021, 31, 1-5.	1.7	0
124	Modeling of Transport Loss in Bi-2212 Round Wires: Effects of Local Defects and Non-Uniformity. <i>IEEE Transactions on Applied Superconductivity</i> , 2021, 31, 1-3.	1.7	0
125	Investigation of AC Losses on Stabilizer-Free and Copper Stabilizer HTS Tapes. <i>Springer Theses</i> , 2020, , 93-107.	0.1	0
126	Study on Power Dissipation in HTS Coils. <i>Springer Theses</i> , 2020, , 109-134.	0.1	0

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127	Numerical Study on the Influence of Superconductor Layer Thickness on AC losses in Conductor on Round Core Cable. , 2020, , .		0
128	Continuous Over-Current Safe Operation Area of SiC MOSFET at Cryogenic and Room Temperatures. , 2020, , .		0
129	Loss Analysis on the Saturated Iron-core Superconducting Fault Current Limiter for VSC-HVDC System. , 2020, , .		0
130	Simulation of SI-SFCL for HVDC System: Loss Analysis in System Level. , 2020, , .		0
131	A New Model of Anisotropic Field Dependence for HTS Conductor on Round Core (CORC) Cables. , 2020, , .		0
132	Modeling of Superconducting Conductor on Round Core (CORC) Cables: 2D and 3D. , 2020, , .		0
133	Principle and Application Feasibility of Current Transducers under Cryogenic Condition. , 2020, , .		0
134	A novel hybrid energy management strategy of a diesel-electric hybrid ship based on dynamic programming and model predictive control. Proceedings of the Institution of Mechanical Engineers Part M: Journal of Engineering for the Maritime Environment, 2022, 236, 644-657.	0.5	0