

Akiko Kumada

List of Publications by Year in descending order

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146
papers

1,354
citations

361296

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h-index

434063

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147
all docs

147
docs citations

147
times ranked

733
citing authors

#	ARTICLE	IF	CITATIONS
1	Influence of tiny metal particles on charge accumulation phenomena of GIS model spacer in high-pressure SF ₆ gas. IEEE Transactions on Dielectrics and Electrical Insulation, 2013, 20, 1895-1901.	1.8	88
2	Residual charge distribution of positive surface streamer. Journal Physics D: Applied Physics, 2009, 42, 095209.	1.3	78
3	Directly High-Voltage Measuring System Based on Pockels Effect. IEEE Transactions on Power Delivery, 2013, 28, 1306-1313.	2.9	76
4	Two-dimensional potential and charge distributions of positive surface streamer. Journal Physics D: Applied Physics, 2009, 42, 075204.	1.3	50
5	The influence of residual charge on surface discharge propagation. Journal Physics D: Applied Physics, 2010, 43, 495203.	1.3	40
6	Surface discharges in silicone gel on AlN substrate. IEEE Transactions on Dielectrics and Electrical Insulation, 2016, 23, 494-500.	1.8	36
7	Dynamic potential distributions of surface discharge in silicone gel. IEEE Transactions on Dielectrics and Electrical Insulation, 2015, 22, 1733-1738.	1.8	34
8	Pockels surface potential probe and surface charge density measurement. Journal of Electrostatics, 2003, 58, 45-58.	1.0	33
9	Measurement Methods of Accumulated Electric Charges on Spacer in Gas Insulated Switchgear. IEEE Transactions on Power Delivery, 2007, 22, 1547-1556.	2.9	33
10	Quantum chemical calculation of hole transport properties in crystalline polyethylene. IEEE Transactions on Dielectrics and Electrical Insulation, 2016, 23, 3045-3052.	1.8	33
11	Shackã€Hartmann type laser wavefront sensor for measuring two-dimensional electron density distribution over extinguishing arc discharge. Journal Physics D: Applied Physics, 2012, 45, 435202.	1.3	31
12	Electrical treeing in silicone gel under repetitive voltage impulses. IEEE Transactions on Dielectrics and Electrical Insulation, 2019, 26, 1919-1925.	1.8	30
13	Residual charge density distribution measurement of surface leader with feedback electrostatic probe. Applied Physics Letters, 2012, 100, .	1.5	29
14	Influence of surface-conductivity nonuniformity on charge accumulation of GIS downsized model spacer under DC field application. Electrical Engineering in Japan (English Translation of Denki Gakkai) Tj ETQq0 0 OngBT /Over 10 Tf		
15	Computational Study of Excess Electron Mobility in High-Pressure Liquid Benzene. Journal of Physical Chemistry C, 2016, 120, 8490-8501.	1.5	27
16	Kerr effect in gas and its application to noncontact measurement of electric field. Journal of Applied Physics, 2002, 92, 2875-2879.	1.1	25
17	Can classical marcus theory describe hole transfer in polyethylene?. IEEE Transactions on Dielectrics and Electrical Insulation, 2016, 23, 2978-2984.	1.8	25
18	Multiscale modeling of charge transfer in polymers with flexible backbones. Physical Chemistry Chemical Physics, 2019, 21, 1812-1819.	1.3	23

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19	Residual Charge Distribution of Surface Leader Discharge Under Positive Impulse Voltage. IEEE Transactions on Plasma Science, 2013, 41, 999-1004.	0.6	21
20	First-principles studies of carrier injection in polyethylene (PE) and ethylene-vinyl acetate copolymer (EVA) oligomers. IEEE Transactions on Dielectrics and Electrical Insulation, 2017, 24, 574-582.	1.8	21
21	Direct plasma stimuli including electrostimulation and OH radical induce transient increase in intracellular Ca ²⁺ and uptake of a middle-size membrane-impermeable molecule. Plasma Processes and Polymers, 2018, 15, 1700077.	1.6	20
22	Motion and production of microparticles in vacuum interrupter. IEEE Transactions on Dielectrics and Electrical Insulation, 2017, 24, 3374-3380.	1.8	19
23	Two-dimensional potential distribution measurement of surface discharge with subnanosecond resolution. Review of Scientific Instruments, 2002, 73, 1939-1944.	0.6	18
24	Analytical approximations for the rotating machine end-turn field distribution. IEEE Transactions on Dielectrics and Electrical Insulation, 2015, 22, 3146-3152.	1.8	18
25	Highly sensitive Shack-Hartmann sensor for two-dimensional electron density imaging over extinguishing arc discharges. Measurement Science and Technology, 2014, 25, 055201.	1.4	16
26	Potential distribution on the stress grading system of high-voltage rotating machines – I measuring system. IEEE Transactions on Dielectrics and Electrical Insulation, 2015, 22, 3163-3169.	1.8	16
27	First-principles determination of electronic charge transport properties in polymer dielectrics using a crystalline-based model system. IEEE Transactions on Dielectrics and Electrical Insulation, 2019, 26, 1204-1210.	1.8	16
28	Multi-time electron density imaging over arc discharges around the current zero point. Journal Physics D: Applied Physics, 2014, 47, 175201.	1.3	15
29	Two-dimensional electron density measurement of pulsed positive primary streamer discharge in atmospheric-pressure air. Journal Physics D: Applied Physics, 2017, 50, 174005.	1.3	15
30	Viscoelastic analysis of cavity propagation in gel with electrical discharge. Journal Physics D: Applied Physics, 2014, 47, 155201.	1.3	14
31	Intense-Mode Vacuum Arc Characterization by Using 2-D Electron and Vapor Density Image. IEEE Transactions on Plasma Science, 2017, 45, 129-139.	0.6	14
32	Particle Detection in Vacuum Interrupter: Preliminary. IEEE Transactions on Plasma Science, 2014, 42, 3077-3082.	0.6	12
33	Partial discharge characteristics in composite insulation systems with PPLP for HTS cable. IEEE Transactions on Dielectrics and Electrical Insulation, 2015, 22, 1025-1030.	1.8	12
34	The Direct Potential Distribution Measurement of Propagating Surface Discharge by Using Pockels Effect. IEEE Transactions on Fundamentals and Materials, 1998, 118, 723-728.	0.2	11
35	Characterization of partial discharge in composite insulation system with PPLPR for HTS cable. IEEE Transactions on Dielectrics and Electrical Insulation, 2010, 17, 1747-1753.	1.8	11
36	By-product Generation through Electrical Discharge in CF ₃ I Gas and its Effect to Insulation Characteristics. IEEE Transactions on Power and Energy, 2011, 131, 859-864.	0.1	11

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37	Excitation Temperature Imaging of Vacuum Arc Based on Two-Line Radiance Method. IEEE Transactions on Plasma Science, 2021, 49, 1955-1961.	0.6	11
38	One-Dimensional Modeling of Charge Transport in Epoxy for DC-GIS Insulating Spacer. IEEE Transactions on Dielectrics and Electrical Insulation, 2021, 28, 1457-1464.	1.8	11
39	Motion observation of particles between electrodes and subsequent breakdown phenomena in vacuum. , 2014, , .		10
40	Degradation process of silicone-gel by internal surface discharges. , 2014, , .		10
41	Electric-field-induced second-harmonic generation using high-intensity femtosecond laser pulses over the observable optical breakdown threshold. Optics Letters, 2021, 46, 238.	1.7	10
42	Sparkover Characteristics in CF3I Gas and CF3I/N2 Gas Mixture under Non-uniform Field Gaps. IEEE Transactions on Power and Energy, 2010, 130, 813-818.	0.1	10
43	Electric-field-profile measurement along a probing laser path based on electric-field-induced second-harmonic generation. Physical Review A, 2021, 104, .	1.0	10
44	Determination of hole mobility in polyethylene: First principle calculation based on Marcus theory. , 2015, , .		9
45	Two-dimensional electron density measurement of pulsed positive secondary streamer discharge in atmospheric-pressure air. Journal Physics D: Applied Physics, 2019, 52, 185204.	1.3	9
46	Initiation Process of Vacuum Breakdown Between Cu and CuCr Electrodes. IEEE Transactions on Plasma Science, 2019, 47, 5191-5197.	0.6	9
47	Examination of Excitation Temperature of Vacuum Arc Based on Collisional-Radiative Model. IEEE Transactions on Plasma Science, 2021, 49, 1948-1954.	0.6	9
48	Spatial-filter-installed Shack-Hartmann sensor for two-dimensional electron density visualization of SF ₆ arc discharge under strong turbulent flow. Journal Physics D: Applied Physics, 2018, 51, 345203.	1.3	8
49	FUNDAMENTAL CHARACTERISTICS OF SURFACE STREAMER DEVELOPMENT IN AIR. IEEJ Transactions on Fundamentals and Materials, 1996, 116, 998-1003.	0.2	7
50	A Shack-Hartmann laser wavefront sensor for measuring electron density in low-current arc. Electrical Engineering in Japan (English Translation of Denki Gakkai Ronbunshi), 2012, 181, 1-8.	0.2	7
51	Comparative study on extinction process of gas-blasted air and CO ₂ arc discharge using two-dimensional electron density imaging sensor. Journal Physics D: Applied Physics, 2017, 50, 175202.	1.3	7
52	Electrical Breakdown Triggered by Micro Particle in Vacuum Gap. IEEJ Transactions on Fundamentals and Materials, 2017, 137, 95-100.	0.2	7
53	Two-dimensional temperature distribution of air arc commutating to arc runner. Plasma Sources Science and Technology, 2019, 28, 095013.	1.3	7
54	Potential distribution on the stress grading system of high voltage rotating machines " Part II transient measurements and simulation profiles. IEEE Transactions on Dielectrics and Electrical Insulation, 2019, 26, 1495-1502.	1.8	7

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55	A Systematic Comparison of Intense-Mode Vacuum Arc Between CuCr and Ag ^o WC Electrode by Using Various Optical Diagnostics. IEEE Transactions on Plasma Science, 2020, 48, 2224-2236.	0.6	7
56	Influence of CuCr electrode composition on 2D electron and metal vapor density distribution over vacuum arc. Journal Physics D: Applied Physics, 2020, 53, 305201.	1.3	7
57	Molecular Dynamics Study of Ionic Conduction in Epoxy Resin. IEEE Transactions on Dielectrics and Electrical Insulation, 2022, 29, 170-177.	1.8	7
58	Two-dimensional residual charge density distribution measurement of surface leader. Journal of Electrostatics, 2013, 71, 739-745.	1.0	6
59	Insulation properties of highly pressurized dry air-effects of anodic oxide coating and surface roughness of electrodes on breakdown voltage. IEEE Transactions on Dielectrics and Electrical Insulation, 2014, 21, 2081-2087.	1.8	6
60	Surface Streamer-to-Leader Transition Under Positive Impulse Voltage. IEEE Transactions on Plasma Science, 2014, 42, 2394-2395.	0.6	6
61	High voltage measuring apparatus based on kerr effect in gas. IEEE Transactions on Dielectrics and Electrical Insulation, 2015, 22, 760-765.	1.8	6
62	First principles study of hole transport properties in amorphous polyethylene: Effect of bromine doping. Journal of Applied Physics, 2018, 124, .	1.1	6
63	Temperature Dependence of Surface Charge Accumulation on DC-GIS Insulating Spacer. IEEE Transactions on Power Delivery, 2022, 37, 4539-4547.	2.9	6
64	Systematic 1D electric field induced second harmonic measurement on primary-to-secondary transition phase of positive streamer discharge in atmospheric-pressure air. Journal Physics D: Applied Physics, 2022, 55, 385201.	1.3	6
65	Simultaneous imaging of two-dimensional electron density and air-flow distribution over air-blast decaying arc. Journal Physics D: Applied Physics, 2014, 47, 325204.	1.3	5
66	Observation of conducting particles in VCB with temporal and spatial resolution. , 2014, , .		5
67	Measurement of stress grading conductivity to 1.6 MV/m and 155 oC Computation of grading power density and temperature rise for PWM waveforms. , 2014, , .		5
68	Observation of pre-discharge phenomena with point-to-plane electrodes in vacuum under AC. IEEE Transactions on Dielectrics and Electrical Insulation, 2015, 22, 3633-3640.	1.8	5
69	Motion and Breakdown Related to Microparticles in Vacuum Gap. IEEE Transactions on Plasma Science, 2019, 47, 3384-3391.	0.6	5
70	The Direct Potential Distribution Measurement of Propagating Positive Surface Discharge by Using Pockels Effect. IEEE Transactions on Fundamentals and Materials, 2000, 120, 204-210.	0.2	4
71	Influence of Current Interruption on $\langle V \rangle_t$ Characteristics of Vacuum Interrupters. IEEE Transactions on Plasma Science, 2013, 41, 1896-1903.	0.6	4
72	Microprojection heating caused by the approach of a microparticle. IEEE Transactions on Electrical and Electronic Engineering, 2017, 12, S129-S130.	0.8	4

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73	Breakdown Phenomena Triggered by Microparticle in Vacuum Gap. , 2018, , .		4
74	Surface potential measurement of model stator bar with stress grading system by field sensor. IEEE Transactions on Dielectrics and Electrical Insulation, 2019, 26, 1146-1153.	1.8	4
75	Propagation of Cavities caused by Surface Discharges in Gel-filling for Semiconductors. IEEJ Transactions on Fundamentals and Materials, 2014, 134, 358-359.	0.2	4
76	Recovery of Withstanding Voltage After Direct Current Interruption Using Vacuum Circuit Breakers. IEEE Transactions on Plasma Science, 2021, 49, 3919-3926.	0.6	4
77	Potential Distribution Measurement of Surface Discharge Developing on Insulating Material. IEEJ Transactions on Power and Energy, 2000, 120, 75-80.	0.1	3
78	Propagation characteristics of a positive surface streamer. IEEJ Transactions on Electrical and Electronic Engineering, 2006, 1, 95-103.	0.8	3
79	Surface temperature of Pd/C catalyst under microwave irradiation in dechlorination process of PCBs. IEEJ Transactions on Electrical and Electronic Engineering, 2009, 4, 133-135.	0.8	3
80	Dielectrics loss of PCBs leading to microwave heating. IEEJ Transactions on Electrical and Electronic Engineering, 2009, 4, 297-299.	0.8	3
81	Measurement of V-t characteristics of suspension insulators to evaluate for lightning characteristics of traction power supply system. , 2014, , .		3
82	Research the late discharge in VCB using point-to-plane electrodes. , 2014, , .		3
83	Rotating machine end turn grading during PWM transitions. , 2016, , .		3
84	Two-dimensional electron density characterisation of arc interruption phenomenon in current-zero phase. Journal Physics D: Applied Physics, 2018, 51, 015205.	1.3	3
85	Late Dielectric Breakdown Phenomenon Caused by Microparticles Released after Current Interruption. , 2018, , .		3
86	Late Breakdowns Caused by Microparticles After Vacuum Arc Interruption. IEEE Transactions on Plasma Science, 2019, 47, 3392-3399.	0.6	3
87	Transient Recovery Voltage in Direct Current Circuit Breaker With Active Current Injection. IEEE Transactions on Power Delivery, 2021, 36, 3278-3281.	2.9	3
88	Breakdown Characteristics across Micrometer-scale Surface Gap with Aluminum Electrodes. IEEJ Transactions on Fundamentals and Materials, 2014, 134, 485-486.	0.2	3
89	Excitation temperature features of monovalent Cu ion under diffuse mode in vacuum arc. , 2022, , .		3
90	Oscillatory waveform caused by piezoelectric vibration of pockels crystal and its effective suppression. IEEJ Transactions on Electrical and Electronic Engineering, 2011, 6, 1-6.	0.8	2

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91	Particle detection in vacuum interrupter after current interruption. , 2013, , .		2
92	Plastic deformation of electrode at collision with particles in vacuum gap. , 2015, , .		2
93	Observation of electrical treeing in epoxy resin by X-ray phase contrast imaging. , 2016, , .		2
94	Power dissipation in stress grading as a function of CAT-SG interface topology. , 2017, , .		2
95	Breakdown phenomena across micrometer scale surface gap under negative voltage application. IEEE Transactions on Dielectrics and Electrical Insulation, 2019, 26, 1377-1384.	1.8	2
96	Particle-In-Cell simulation for breakdown phenomena in vacuum. Electrical Engineering in Japan (English Translation of Denki Gakkai Ronbunshi), 2021, 214, e23300.	0.2	2
97	Particle-In-Cell Simulation for Breakdown Phenomena in Vacuum. IEEJ Transactions on Fundamentals and Materials, 2020, 140, 318-324.	0.2	2
98	Charge Accumulation/Decumulation on DC-GIS Spacer under 10,000-hour DC Field Application. , 2020, , .		2
99	Charge Transport Simulation in Epoxy used as DC-GIS Insulating Spacer Material. IEEJ Transactions on Power and Energy, 2020, 140, 762-768.	0.1	2
100	Prediction of Impulse Breakdown Voltage in Dry Air at High Pressure Using Volume-Time Theory. IEEE Transactions on Dielectrics and Electrical Insulation, 2022, , 1-1.	1.8	2
101	Advanced measurement of surface charge distribution with high potential. IEEJ Transactions on Electrical and Electronic Engineering, 2012, 7, S179.	0.8	1
102	End-turn grading for PWM-driven machines. , 2015, , .		1
103	Computational study on electron mobility in liquid benzene. , 2016, , .		1
104	Atomistic modeling of charge transport in polyethylene. , 2017, , .		1
105	Surface potential measurement of stress grading system of high voltage rotating machine coils using pockels field sensor. , 2017, , .		1
106	Systematic Comparison of Vacuum Arc between CuCr and AgWC Electrode by Using Various Optical Technique. , 2018, , .		1
107	High-Speed Spectroscopy of Vacuum Breakdown Process between CuCr Electrode. , 2018, , .		1
108	Characterization of Optimized SGT Characteristics. , 2018, , .		1

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109	Monte Carlo simulation of microparticle motion in vacuum gap. Electrical Engineering in Japan (English Translation of Denki Gakkai Ronbunshi), 2019, 206, 32-41.	0.2	1
110	First-principles study of electron and hole transfer properties in various polymers. , 2018, , .		1
111	Particle-In-Cell Monte Carlo Collision Simulation of the Breakdown Initiating Process in Vacuum. , 2019, , .		1
112	Shack-Hartmann Type Laser Wavefront Sensor for Measuring Electron Density in Low Current Arc. IEEJ Transactions on Fundamentals and Materials, 2011, 131, 872-877.	0.2	1
113	Observation of Lightning Strikes to TOKYOSKYTREE by using Consumer Digital Camera. IEEJ Transactions on Power and Energy, 2014, 134, 470-471.	0.1	1
114	Electrode Polarity Dependence of Surface Discharges in Silicone-gel. IEEJ Transactions on Fundamentals and Materials, 2016, 136, 611-612.	0.2	1
115	Advanced Empirical Prediction of Electric Breakdown Field and Boiling Point of Gases using Machine Learning Techniques and Quantum Chemical Calculations. IEEJ Transactions on Fundamentals and Materials, 2017, 137, 422-427.	0.2	1
116	Quantum Chemical Studies of Hole Transfer in Liquid Hexane. IEEJ Transactions on Fundamentals and Materials, 2017, 137, 435-441.	0.2	1
117	Recent Topics on Technical Committee of Electrical Discharges. IEEJ Transactions on Fundamentals and Materials, 2019, 139, 11-12.	0.2	1
118	Simulating Current Transients in Polymers from First-principles. IEEJ Transactions on Fundamentals and Materials, 2019, 139, 351-357.	0.2	1
119	Experimental Study on Re-ignition Process in CO ₂ / C ₂ F ₆ Gas Mixture Flow after Application of Quasi-transient Recovery Voltage. IEEJ Transactions on Electrical and Electronic Engineering, 2021, 16, 1672.	0.8	1
120	Polarity Effect on Electrical Treeing in Silicone Gel under Repetitive Voltage Impulses. , 2020, , .		1
121	Analysis of Surface Charge Accumulation on DC-GIS Insulating Spacer Based on Surface Trapping Model. , 2021, , .		1
122	Surface Charge Measurement with High Spatial Resolution Using Electrostatic Probe. IEEJ Transactions on Fundamentals and Materials, 2005, 125, 281-286.	0.2	0
123	Suppression of piezoelectric vibration on Pockels crystal. , 2009, , .		0
124	The comparison of the residual charge distribution of surface leader discharge under positive and negative impulse voltage application. , 2012, , .		0
125	University research approach to switchgear technology////Arc quenching phenomena. , 2013, , .		0
126	Comparative study on arc extinction process under air, CO ₂ and SF ₆ gas blasting using two-dimensional electron density imaging sensor. CIREN - Open Access Proceedings Journal, 2017, 2017, 65-68.	0.1	0

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127	Cavity Propagation under Repetitive Voltage Impulses in Silicone Gel for Encapsulation of Power Modules. , 2018, , .		0
128	First-principles study of electron and hole transfer properties in various polymers. , 2018, , .		0
129	Laser Diagnostics for Elucidation of Vacuum Arc Behavior. , 2018, , .		0
130	First-principles based simulation of electron and hole transfer in PET oligmer. Electronics and Communications in Japan, 2021, 104, 10-17.	0.3	0
131	Electron and Neutral Density Distributions of Vacuum Arcs Under Anode-Spot Mode. IEEJ Transactions on Fundamentals and Materials, 2021, 141, 407-408.	0.2	0
132	Recent Topics on Electrical Discharges, Plasma, and Pulsed Power Technologies. IEEJ Transactions on Fundamentals and Materials, 2021, 141, 10-11.	0.2	0
133	Discharge Characteristics and Suitability as Pragmatic Insulation Medium of CF ₃ and its Mixture. IEEJ Transactions on Fundamentals and Materials, 2014, 134, 635-641.	0.2	0
134	Numerical Simulation of Surface Streamer Propagation in Atmospheric Air. IEEJ Transactions on Fundamentals and Materials, 2014, 134, 118-125.	0.2	0
135	Lightning-impulse Field Measurement by using Kerr Effect in Gas. IEEJ Transactions on Fundamentals and Materials, 2014, 134, 162-163.	0.2	0
136	DC Interruption Characteristics of VCB by Injection of High Frequency Current. IEEJ Transactions on Power and Energy, 2018, 138, 535-536.	0.1	0
137	Monte Carlo Simulation of Microparticle Motion in Vacuum Gap. IEEJ Transactions on Power and Energy, 2018, 138, 628-635.	0.1	0
138	Electrical Treeing Growth and Partial Discharge Characteristics in Epoxy Resin Filled with Micro Particles. IEEJ Transactions on Fundamentals and Materials, 2019, 139, 337-338.	0.2	0
139	Particle-In-Cell Simulation for Breakdown Initiating Process in Vacuum. Lecture Notes in Electrical Engineering, 2020, , 347-358.	0.3	0
140	Evaluation of DC Current Interruption Performance of Vacuum Circuit Breaker with EMTP. IEEJ Transactions on Power and Energy, 2019, 139, 776-782.	0.1	0
141	First-principles Based Simulation of Electron and Hole Transfer in PET Oligmer. IEEJ Transactions on Fundamentals and Materials, 2020, 140, 425-431.	0.2	0
142	Measurement of Light Emission with Partial Discharge at the Stator Coil End of a Rotating Machine under Operating Temperature. IEEJ Transactions on Fundamentals and Materials, 2020, 140, 70-71.	0.2	0
143	Recent Topics on Electrical Discharges, Plasma, and Pulsed Power Technologies. IEEJ Transactions on Fundamentals and Materials, 2022, 142, 10-11.	0.2	0
144	Numerical Simulation of Surface Charge Accumulation on DC-GIS Insulating Spacer with Charge Transport Model. , 2020, , .		0

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145	Numerical Simulation on Decaying Arcs in Molecular Gas Flow including C, F and O. , 2022, , .		0
146	Ideal Method for Investigating High Electric Field. Journal of the Institute of Electrical Engineers of Japan, 2022, 142, 395-398.	0.0	0