

# Yang Cao

## List of Publications by Year in descending order

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159  
papers

2,748  
citations

279798

23  
h-index

214800

47  
g-index

160  
all docs

160  
docs citations

160  
times ranked

1878  
citing authors

#	ARTICLE	IF	CITATIONS
1	The future of nanodielectrics in the electrical power industry. IEEE Transactions on Dielectrics and Electrical Insulation, 2004, 11, 797-807.	2.9	479
2	Rational Co-Design of Polymer Dielectrics for Energy Storage. Advanced Materials, 2016, 28, 6277-6291.	21.0	149
3	Flexible Temperature-Invariant Polymer Dielectrics with Large Bandgap. Advanced Materials, 2020, 32, e2000499.	21.0	128
4	Advanced Dielectrics for Capacitors. IEEE Transactions on Fundamentals and Materials, 2006, 126, 1153-1159.	0.2	127
5	Fluoronitrile/CO <sub>2</sub> mixture as an eco-friendly alternative to SF <sub>6</sub> for medium voltage switchgears. IEEE Transactions on Dielectrics and Electrical Insulation, 2018, 25, 1340-1350.	2.9	86
6	Insulating materials for realising carbon neutrality: Opportunities, remaining issues and challenges. High Voltage, 2022, 7, 610-632.	4.7	85
7	Rational design and synthesis of polythioureas as capacitor dielectrics. Journal of Materials Chemistry A, 2015, 3, 14845-14852.	10.3	81
8	Frequency-dependent dielectric constant prediction of polymers using machine learning. Npj Computational Materials, 2020, 6, .	8.7	75
9	High energy density and high efficiency all-organic polymers with enhanced dipolar polarization. Journal of Materials Chemistry A, 2019, 7, 15026-15030.	10.3	72
10	High-temperature dielectric polymer nanocomposites with interposed montmorillonite nanosheets. Chemical Engineering Journal, 2020, 401, 126093.	12.7	65
11	Poly(dimethyltin glutarate) as a Prospective Material for High Dielectric Applications. Advanced Materials, 2015, 27, 346-351.	21.0	64
12	Flexible polyolefin dielectric by strategic design of organic modules for harsh condition electrification. Energy and Environmental Science, 2022, 15, 1307-1314.	30.8	56
13	Rational Design of Organotin Polyesters. Macromolecules, 2015, 48, 2422-2428.	4.8	54
14	Reviving the Schottky Barrier for Flexible Polymer Dielectrics with a Superior 2D Nanoassembly Coating. Advanced Materials, 2021, 33, e2101374.	21.0	53
15	All-organic flexible fabric antenna for wearable electronics. Journal of Materials Chemistry C, 2020, 8, 5662-5667.	5.5	43
16	Rock-salt-type nanoprecipitates lead to high thermoelectric performance in undoped polycrystalline SnSe. RSC Advances, 2017, 7, 8258-8263.	3.6	40
17	Optimization of Organotin Polymers for Dielectric Applications. ACS Applied Materials & Interfaces, 2016, 8, 21270-21277.	8.0	33
18	Study of porous dielectrics as electret materials. IEEE Transactions on Dielectrics and Electrical Insulation, 1998, 5, 58-62.	2.9	32

#	ARTICLE	IF	CITATIONS
19	Polyamideimide dielectric with montmorillonite nanosheets coating for high-temperature energy storage. <i>Chemical Engineering Journal</i> , 2022, 437, 135430.	12.7	32
20	Tuning Surface States of Metal/Polymer Contacts Toward Highly Insulating Polymer-Based Dielectrics. <i>ACS Applied Materials &amp; Interfaces</i> , 2021, 13, 46142-46150.	8.0	31
21	Effect of Incorporating Aromatic and Chiral Groups on the Dielectric Properties of Poly(dimethyltin) Tj ETQq1 1 0.784314 rgBT <sub>29</sub> /Overlo	3.9	29
22	A rational co-design approach to the creation of new dielectric polymers with high energy density. <i>IEEE Transactions on Dielectrics and Electrical Insulation</i> , 2017, 24, 732-743.	2.9	26
23	Electronic Structure of Polymer Dielectrics: The Role of Chemical and Morphological Complexity. <i>Chemistry of Materials</i> , 2018, 30, 7699-7706.	6.7	26
24	All-Organic Flexible Ferroelectret Nanogenerator with Fabric-Based Electrodes for Self-Powered Body Area Networks. <i>Small</i> , 2021, 17, e2103161.	10.0	24
25	Transient characterization of extreme field conduction in dielectrics. <i>AIP Advances</i> , 2016, 6, .	1.3	23
26	Gas-solid interface charge tailoring techniques: what we grasped and where to go. <i>Nanotechnology</i> , 2021, 32, 122001.	2.6	23
27	Flexible cyclic-olefin with enhanced dipolar relaxation for harsh condition electrification. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.1	22
28	Improving the Rotational Freedom of Polyetherimide: Enhancement of the Dielectric Properties of a Commodity High-Temperature Polymer Using a Structural Defect. <i>Chemistry of Materials</i> , 2022, 34, 6553-6558.	6.7	22
29	Computable Bulk and Interfacial Electronic Structure Features as Proxies for Dielectric Breakdown of Polymers. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 37182-37187.	8.0	21
30	High Temperature Insulation Materials for DC Cable Insulation – Part I: Space Charge and Conduction. <i>IEEE Transactions on Dielectrics and Electrical Insulation</i> , 2021, 28, 223-230.	2.9	21
31	Novel EPR-insulated DC cables for future multi-terminal MVDC integration. <i>IEEE Electrical Insulation Magazine</i> , 2019, 35, 20-27.	0.8	20
32	Dielectric Polymers Tolerant to Electric Field and Temperature Extremes: Integration of Phenomenology, Informatics, and Experimental Validation. <i>ACS Applied Materials &amp; Interfaces</i> , 2021, 13, 53416-53424.	8.0	20
33	Sn-Polyester/Polyimide Hybrid Flexible Free-Standing Film as a Tunable Dielectric Material. <i>Macromolecular Rapid Communications</i> , 2019, 40, e1800679.	3.9	19
34	Multisource inverse-geometry CT. Part II. X-ray source design and prototype. <i>Medical Physics</i> , 2016, 43, 4617-4627.	3.0	18
35	Dipole-relaxation dynamics in a modified polythiourea with high dielectric constant for energy storage applications. <i>Applied Physics Letters</i> , 2019, 115, .	3.3	18
36	Study of wall ablation on low-voltage arc interruption: The effect of Stefan flow. <i>Journal of Applied Physics</i> , 2019, 125, .	2.5	18

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37	Guarded needle for charge injection measurement. Review of Scientific Instruments, 2002, 73, 3012-3017.	1.3	17
38	Evaluation of poly(4-methyl-1-pentene) as a dielectric capacitor film for high-temperature energy storage applications. Journal of Polymer Science, Part B: Polymer Physics, 2017, 55, 1497-1515.	2.1	17
39	Molecular Engineering: Flexible Temperature-Invariant Polymer Dielectrics with Large Bandgap (Adv. Tj ETQq1 1 0,784314 pgBT /Ov	21.0	17
40	Electrochromic Fabric Displays from a Robust, Open-Air Fabrication Technique. Advanced Materials Technologies, 2022, 7, 2100548.	5.8	16
41	Development of an arc root model for studying the electrode vaporization and its influence on arc dynamics. AIP Advances, 2020, 10, .	1.3	15
42	A Review of Knowledge-Based Defect Identification via PRPD Patterns in High Voltage Apparatus. IEEE Access, 2021, 9, 77705-77728.	4.2	14
43	Investigation of 2D Nano-Structured Winding Insulation for High Torque Density Medium-Voltage Motor. IEEE Access, 2021, 9, 2274-2282.	4.2	14
44	The influence of magnitude and rise time of applied voltage and the type of oil on streamer growth in a wet-mate DC connector. IEEE Transactions on Dielectrics and Electrical Insulation, 2017, 24, 1646-1656.	2.9	13
45	Temperature-dependent partial discharge characteristics of high temperature materials at DC voltage for hybrid propulsion systems. High Voltage, 2021, 6, 590-598.	4.7	13
46	Altitude Readiness of High-Voltage IGBTs Subjected to the Partial Discharge at Harsh Environmental Conditions for Hybrid Electric Aircraft Propulsion. IEEE Transactions on Power Electronics, 2022, 37, 3733-3736.	7.9	13
47	Mechanism of high field electroluminescence and determination of the space charge limited field in polymeric dielectrics. IEEE Transactions on Dielectrics and Electrical Insulation, 2005, 12, 690-699.	2.9	12
48	High power distributed x-ray source. Proceedings of SPIE, 2010, , .	0.8	12
49	A thermo-electrodynamic electric field dependent molecular ionization model to realize positive streamer propagation in a wet-mate DC connector. IEEE Transactions on Dielectrics and Electrical Insulation, 2017, 24, 901-914.	2.9	12
50	Charge Transport Dynamics and Space Charge Accumulation in XLPE Composites with 2D Platelet Fillers for HVDC Cable Insulation. IEEE Transactions on Dielectrics and Electrical Insulation, 2021, 28, 3-10.	2.9	12
51	Novel high voltage polymer insulators using computational and data-driven techniques. Journal of Chemical Physics, 2021, 154, 174906.	3.0	12
52	3D computational study of arc splitting during power interruption: the influence of metal vapor enhanced radiation on arc dynamics. Journal Physics D: Applied Physics, 2021, 54, 085502.	2.8	12
53	Nano-enabled metal oxide varistors. IEEE Transactions on Dielectrics and Electrical Insulation, 2009, 16, 934-939.	2.9	11
54	High Temperature Insulation Materials for DC Cable Insulation Part III: Degradation and Surface Breakdown. IEEE Transactions on Dielectrics and Electrical Insulation, 2021, 28, 240-247.	2.9	11

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55	High field measurements with a guarded needle. IEEE Electrical Insulation Magazine, 2003, 19, 19-25.	0.8	10
56	Tailoring insulation surface conductivity for surface partial discharge mitigation. Applied Physics Letters, 2021, 119, .	3.3	10
57	Charge transport and space charge dynamics in EPDM/2D-nanoclay composite dielectrics. Composites Science and Technology, 2022, 219, 109241.	7.8	10
58	Materials Compatibility Study of C <sub>4</sub> F <sub>7</sub> N/CO <sub>2</sub> Gas Mixture for Medium-Voltage Switchgear. IEEE Transactions on Dielectrics and Electrical Insulation, 2022, 29, 270-278.	2.9	10
59	Insulator Surface Charge Behaviors: From Hazards to Functionality. IEEE Electrical Insulation Magazine, 2022, 38, 6-14.	0.8	10
60	Multi-source inverse-geometry CT: From system concept to research prototype. , 2009, , .		9
61	High-Voltage High-Frequency Testing for Medium-Voltage Motor Insulation Degradation. , 2018, , .		9
62	Influence of heat treatment on the electret properties of sol-gel prepared silicon-dioxide films. Journal of Electrostatics, 1996, 37, 29-37.	1.9	8
63	X-ray multisource for medical imaging. Proceedings of SPIE, 2009, , .	0.8	8
64	Torque enhancement and re-rating of medium-voltage induction machines using nano-structured stator winding insulation. , 2017, , .		8
65	Nanostructured insulation for high torque density electric propulsion motors. , 2017, , .		8
66	Electric field tailoring in HVDC cable joints utilizing electro-thermal simulation: effect of field grading materials. , 2020, , .		8
67	High Temperature Insulation Materials for DC Cable Insulation—Part II: Partial Discharge Behavior at Elevated Altitudes. IEEE Transactions on Dielectrics and Electrical Insulation, 2021, 28, 231-239.	2.9	8
68	Barrier heights of polymer-electrode interfaces measured via photo injection current method. Surfaces and Interfaces, 2021, 24, 101070.	3.0	8
69	AC and impulse performance of medium voltage ethylene propylene-rubber cables with over 25 years of in-service aging in a wet underground environment. IEEE Electrical Insulation Magazine, 2016, 32, 24-28.	0.8	7
70	Characterization of space charge and DC field distribution in XLPE and EPR during voltage polarity reversal with thermal gradient. , 2017, , .		7
71	A material genome approach towards exploration of Zn and Cd coordination complex polyester as dielectrics: Design, synthesis and characterization. Polymer, 2018, 159, 95-105.	3.8	7
72	A thermo-electrodynamic electric field dependent molecular ionization model to design electrical insulation system of HVDC wet-mate connectors under transient conditions. IEEE Transactions on Dielectrics and Electrical Insulation, 2018, 25, 476-485.	2.9	7

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73	Interfacial Potential Barrier Induced Constriction and Stepwise Transition of a Dynamic Arc Root. , 2019, , .		7
74	The Correlation and Balance of Material Properties for DC Cable Insulation at Design Field. IEEE Access, 2020, 8, 187840-187847.	4.2	7
75	High dielectric constant and high breakdown strength polyimide <i>via</i> tin complexation of the polyamide acid precursor. RSC Advances, 2022, 12, 9095-9100.	3.6	7
76	Scalable self-assembly interfacial engineering for high-temperature dielectric energy storage. IScience, 2022, 25, 104601.	4.1	7
77	DC Breakdown in Polyetherimide Composites and Implication for Structural Engineering. , 2007, , .		6
78	Pre-breakdown conduction in polymeric films. , 2015, , .		6
79	Electrical-insulation behavior of cellular polymer foams in comparison to their piezoelectret properties. , 2016, , .		6
80	Modeling a liquid-solid insulation system used in a DC wet-mate connector. , 2016, , .		6
81	Low- Voltage Arc Interruption Computation: the Effect of Stefan Flow. , 2018, , .		6
82	Flexible nanogenerator with 3D-printed ferroelectrets. , 2021, , .		6
83	Electret properties for porous polytetrafluoroethylene (PTFE) film. , 0, , .		5
84	Development of High Temperature Capacitors for High Density, High Temperature Applications. SAE International Journal of Aerospace, 2008, 1, 817-821.	4.0	5
85	Mechanical and Thermal Properties. , 2010, , 163-196.		5
86	Discharge Resistant Epoxy/Clay Nanocomposite for High Torque Density Electrical Propulsion. , 2018, , .		5
87	Study of space charge behavior of insulations for high temperature applications. , 2019, , .		5
88	Remarks on the Design of Flexible High-Temperature Polymer Dielectrics for Emerging Grand Electrification - Exemplified by Poly(oxa)norbornenes. IEEE Transactions on Dielectrics and Electrical Insulation, 2021, 28, 1468-1470.	2.9	5
89	Large improvement in DC electrical properties of EPDM with 2D platelet nanoclay. Journal Physics D: Applied Physics, 2021, 54, 475304.	2.8	5
90	Modeling of Solid-state Circuit Breaker During Current Interruption Phase. , 2021, , .		5

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91	Surface discharge studies of insulation materials in aviation power system under DC voltage. , 2020, , .		5
92	Deep Well Trapping of Hot Carriers in a Hexagonal Boron Nitride Coating of Polymer Dielectrics. ACS Applied Materials & Interfaces, 2021, 13, 60393-60400.	8.0	5
93	The electrical and optical properties of the nonlinear optical polymer DR1/PMMA films. , 0, , .		4
94	Novel modulated equivalent model of point-to-point LCC-based high voltage AC/DC/AC system for geomagnetic storm-induced unbalanced harmonic studies. International Journal of Electrical Power and Energy Systems, 2020, 122, 106173.	5.5	4
95	Influence of ZnO Nanoparticles on the Light Absorption Spectrum of PMMA for Ablation Dominated Arc Interruption. , 2020, , .		4
96	Motor Stator Insulation Stress Due to Multilevel Inverter Voltage Output Levels and Power Quality. Energies, 2022, 15, 4091.	3.1	4
97	Electroluminescence based determination of the space charge limited field. , 0, , .		3
98	Nanofiller dispersion in polymer dielectrics. , 2012, , .		3
99	Novel dielectric films with high energy density. , 2015, , .		3
100	Discharge Resistant Nano-Coatings. , 2018, , .		3
101	Tailoring Polymeric Insulation Materials for DC Cable Dielectrics. , 2019, , .		3
102	High Electric Field Conduction of Polymers at Ambient and Elevated Temperatures. , 2019, , .		3
103	Molecular Dynamics Simulation and Quantum Chemical Calculations of Surfactant Having Suppression Effect on Water Trees. IEEJ Transactions on Fundamentals and Materials, 2019, 139, 92-98.	0.2	3
104	Computational Study of the Arc Splitting in Power Interruption: The Effect of the Metallic Vapor on Arc Dynamics. , 2020, , .		3
105	A Modified Polyetherimide Film Exhibiting Greatly Suppressed Conduction for High-temperature Dielectric Energy Storage. , 2020, , .		3
106	An inventive multi-scale, multiphysics modeling approach and comparative analysis of distinctive features of planar ionization waves in air: I. Negative streamers. Journal Physics D: Applied Physics, 2022, 55, 245203.	2.8	3
107	Temperature-dependent breakdown and pre-breakdown conduction of polyethylene terephthalate. Journal Physics D: Applied Physics, 2022, 55, 365302.	2.8	3
108	Tunable Nanodielectric Composites. Advances in Materials Science and Engineering, 2014, 2014, 1-6.	1.8	2

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109	A study on performance of a wet-mate DC connector under overvoltages. , 2017, , .		2
110	A novel aromatic polyurea for high energy density capacitors. , 2017, , .		2
111	Characterizations of solid-liquid interface in a wet-mate subsea HVDC connector. Journal of Electrostatics, 2018, 94, 51-59.	1.9	2
112	Integrity of novel high-performance nanostructured insulation for high torque density propulsions. , 2019, , .		2
113	Partial discharge studies on high-temperature insulation materials for hybrid compulsion systems. , 2019, , .		2
114	Interfacial charge dynamics in multi-dielectrics under various electric fields and thermal gradient. , 2020, , .		2
115	Enhancing corona resistance in Kapton with self-assembled two-dimensional montmorillonite nanocoatings. Materials Advances, 2022, 3, 3853-3861.	5.4	2
116	An inventive multi-scale, multiphysics modelling approach and comparative analysis of distinctive features of planar ionization waves in air: II. Positive streamers. Journal Physics D: Applied Physics, 2022, 55, 245204.	2.8	2
117	Shallow trap mediated charge transport in polymer dielectrics for HVDC by incorporating 2D nanoclay. Applied Physics A: Materials Science and Processing, 2022, 128, 1.	2.3	2
118	The poling process and distribution of polarization in double layered P(VDF/TrFE) and Teflon FEP films system. , 0, , .		1
119	Thermally induced currents in coaxial signal cables. IEEE Transactions on Power Delivery, 2003, 18, 351-358.	4.3	1
120	Nano-Enabled Metal Oxide Varistors for Surge Protection. , 2008, , .		1
121	Nanostructured dielectric materials. , 2010, , .		1
122	Density of bulk trap states in polymeric films. , 2016, , .		1
123	Characterization of solid-liquid interface for wet-mate subsea HVDC connectors. , 2016, , .		1
124	Quantum chemical calculations of surfactant having suppression effect on water trees. , 2017, , .		1
125	A superior nanolaminate dielectric barrier coating for high breakdown strength. , 2017, , .		1
126	Correlation between current-voltage characteristics and DC field grading for dielectric liquid used in wet-mate DC connector. IEEE Transactions on Dielectrics and Electrical Insulation, 2018, 25, 1668-1678.	2.9	1

#	ARTICLE	IF	CITATIONS
127	Temperature dependent large area breakdown strength of polymeric films. , 2018, , .		1
128	Effects of WBC Devices in Medium-voltage Inverters on Induction Machine Stator Insulation. , 2021, , .		1
129	Reviving the "Schottky" Barrier for Flexible Polymer Dielectrics with a Superior 2D Nanoassembly Coating (Adv. Mater. 34/2021). Advanced Materials, 2021, 33, 2170264.	21.0	1
130	Endurance life of nanostructured insulation material for high torque density propulsion motors. , 2021, , .		1
131	Guest editorial: Partial discharge at DC voltage. High Voltage, 2021, 6, 563-564.	4.7	1
132	Investigating the Effect of Multilevel Inverters on Motor Stator Insulation Stress. , 2021, , .		1
133	All-organic flexible ferroelectret nanogenerator for wearable electronics. , 2020, , .		1
134	Surface discharge behaviors of high temperature insulation subjected to gas pressure variations in hybrid propulsion systems. , 2020, , .		1
135	Flashover characteristics of printed circuit boards at low pressures. , 2021, , .		1
136	Novel Machine Insulation Material for Transportation Electrification Applications. , 2022, , .		1
137	Electret properties of silicon dioxide aerogels. , 0, , .		0
138	Numerical study of space charge dispersive transport in non-polar electrets. , 0, , .		0
139	Thermally induced current in coaxial signal cables. , 0, , .		0
140	High Voltage Metal Oxide Varistors for Surge Protection. , 0, , .		0
141	Dynamics of nonlinear charge injection in polymeric films. , 2016, , .		0
142	Enhancing dielectric property of polymer films with nanoclay coatings. , 2016, , .		0
143	The Correlation and Balance of Critical Material Properties for DC Cable Dielectrics. , 2018, , .		0
144	Organometallic-Organic Hybrid System as Flexible Dielectric Material. , 2018, , .		0

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145	High field prebreakdown aging in polymer dielectric thin films. , 2019, , .		0
146	Discharge behavior of the nanostructured insulation material for high torque density electrical propulsion. , 2019, , .		0
147	Enhanced Electrical Breakdown Strength in Nano-coatings of Polymer Composites. , 2019, , .		0
148	All-Organic Flexible Ferroelectric Nanogenerator with Fabric-Based Electrodes for Self-Powered Body Area Networks (Small 33/2021). Small, 2021, 17, 2170170.	10.0	0
149	A Rational Co-Design Approach for Next Generation Dielectric Materials with the Transition Metal Containing Coordination Polymers. ECS Meeting Abstracts, 2017, , .	0.0	0
150	Tin-Polyester/Polyimide Hybrid System As Flexible Free- Standing Film with Tunable Dielectric Constant for Energy Storage Application. ECS Meeting Abstracts, 2018, , .	0.0	0
151	Charge Injection at Metal-Polymer Interfaces a First-Principles Study. ECS Meeting Abstracts, 2019, , .	0.0	0
152	Data-Driven Modeling of Dielectric Breakdown Phenomena in Polymers. ECS Meeting Abstracts, 2019, , .	0.0	0
153	Development of Nonlinear Field Grading Material for Controlling Electric Field in DC Connectors. , 2020, , .		0
154	Sandwiched Barium Titanate/Polyamideimide Nanocomposite for Dielectric Energy Storage. , 2020, , .		0
155	Novel nanocomposite thin film for arc ablation resistance. , 2021, , .		0
156	Self-assembly 2D Montmorillonite Coating to Impede Charge Injection to Polystyrene. , 2021, , .		0
157	Enhanced dielectric and electrical properties of high-temperature polymers with 2D nanocoatings. , 2021, , .		0
158	Evolution of Space Charge with Increasing Electric Field in High Temperature Materials Used in Hybrid Propulsion Systems. , 2021, , .		0
159	Mechanical and Thermal Properties. , 2010, , 163-196.		0