

Ai-Jun Yang

List of Publications by Year in descending order

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116
papers

3,040
citations

201674

27
h-index

182427

51
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117
all docs

117
docs citations

117
times ranked

2386
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|---|------|-----------|
| 1 | Aqueous reactive species induced by a surface air discharge: Heterogeneous mass transfer and liquid chemistry pathways. <i>Scientific Reports</i> , 2016, 6, 23737. | 3.3 | 200 |
| 2 | Physicochemical processes in the indirect interaction between surface air plasma and deionized water. <i>Journal Physics D: Applied Physics</i> , 2015, 48, 495201. | 2.8 | 160 |
| 3 | A Model of Plasma-Biofilm and Plasma-Tissue Interactions at Ambient Pressure. <i>Plasma Chemistry and Plasma Processing</i> , 2014, 34, 403-441. | 2.4 | 158 |
| 4 | Recent advances in phosphorene as a sensing material. <i>Nano Today</i> , 2018, 20, 13-32. | 11.9 | 134 |
| 5 | Phosphorene: A Promising Candidate for Highly Sensitive and Selective SF ₆ Decomposition Gas Sensors. <i>IEEE Electron Device Letters</i> , 2017, 38, 963-966. | 3.9 | 132 |
| 6 | Identification of gas mixtures via sensor array combining with neural networks. <i>Sensors and Actuators B: Chemical</i> , 2021, 329, 129090. | 7.8 | 106 |
| 7 | Tellurene based chemical sensor. <i>Journal of Materials Chemistry A</i> , 2019, 7, 26326-26333. | 10.3 | 95 |
| 8 | Highly selective detection of sulfur hexafluoride decomposition components H ₂ S and SOF ₂ employing sensors based on tin oxide modified reduced graphene oxide. <i>Carbon</i> , 2018, 135, 95-103. | 10.3 | 88 |
| 9 | Effects of adatom and gas molecule adsorption on the physical properties of tellurene: a first principles investigation. <i>Physical Chemistry Chemical Physics</i> , 2018, 20, 4058-4066. | 2.8 | 87 |
| 10 | Calculated rate constants of the chemical reactions involving the main byproducts SO ₂ F, SOF ₂ , SO ₂ F ₂ of SF ₆ decomposition in power equipment. <i>Journal Physics D: Applied Physics</i> , 2016, 49, 155502. | 2.8 | 82 |
| 11 | MoTe ₂ : A Promising Candidate for SF ₆ Decomposition Gas Sensors With High Sensitivity and Selectivity. <i>IEEE Electron Device Letters</i> , 2018, 39, 292-295. | 3.9 | 74 |
| 12 | Theoretical study of the neutral decomposition of SF ₆ in the presence of H ₂ O and O ₂ in discharges in power equipment. <i>Journal Physics D: Applied Physics</i> , 2016, 49, 385203. | 2.8 | 65 |
| 13 | 1-D fluid model of atmospheric-pressure rf He+O ₂ cold plasmas: Parametric study and critical evaluation. <i>Physics of Plasmas</i> , 2011, 18, . | 1.9 | 64 |
| 14 | Partial Discharge Recognition with a Multi-Resolution Convolutional Neural Network. <i>Sensors</i> , 2018, 18, 3512. | 3.8 | 63 |
| 15 | Compositions, thermodynamic properties, and transport coefficients of high-temperature C ₅ F ₁₀ mixed with CO ₂ and O ₂ as substitutes for SF ₆ to reduce global warming potential. <i>AIP Advances</i> , 2017, 7, . | 1.3 | 61 |
| 16 | Single ultrathin WO ₃ nanowire as a superior gas sensor for SO ₂ and H ₂ S: Selective adsorption and distinct I-V response. <i>Materials Chemistry and Physics</i> , 2020, 240, 122165. | 4.0 | 55 |
| 17 | A High-Impedance Fault Detection Method for Distribution Systems Based on Empirical Wavelet Transform and Differential Faulty Energy. <i>IEEE Transactions on Smart Grid</i> , 2022, 13, 900-912. | 9.0 | 53 |
| 18 | Dielectric breakdown properties of hot SF ₆ -CO ₂ mixtures at temperatures of 300–3500 K and pressures of 0.01–1.0 MPa. <i>Physics of Plasmas</i> , 2014, 21, . | 1.9 | 51 |

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|----|---|-----|-----------|
| 19 | Theoretical study of the decomposition pathways and products of C ₅ -perfluorinated ketone (C ₅ PFK). AIP Advances, 2016, 6, . | 1.3 | 50 |
| 20 | Hydrophobic Ionic Liquid Gel-Based Triboelectric Nanogenerator: Next Generation of Ultrastable, Flexible, and Transparent Power Sources for Sustainable Electronics. ACS Applied Materials & Interfaces, 2020, 12, 15012-15022. | 8.0 | 45 |
| 21 | Humidity sensing using vertically oriented arrays of ReS ₂ nanosheets deposited on an interdigitated gold electrode. 2D Materials, 2016, 3, 045012. | 4.4 | 42 |
| 22 | Chemisorption of NO ₂ to MoS ₂ Nanostructures and its Effects for MoS ₂ Sensors. ChemNanoMat, 2019, 5, 1123-1130. | 2.8 | 41 |
| 23 | Hierarchical assembly of urchin-like alpha-iron oxide hollow microspheres and molybdenum disulphide nanosheets for ethanol gas sensing. Journal of Colloid and Interface Science, 2018, 523, 217-225. | 9.4 | 39 |
| 24 | Partial Discharge Source Localization in GIS Based on Image Edge Detection and Support Vector Machine. IEEE Transactions on Power Delivery, 2019, 34, 1795-1802. | 4.3 | 38 |
| 25 | Janus MoSSe monolayer: A highly strain-sensitive gas sensing material to detect SF ₆ decompositions. Sensors and Actuators A: Physical, 2020, 311, 112049. | 4.1 | 35 |
| 26 | Dominant particles and reactions in a two-temperature chemical kinetic model of a decaying SF ₆ arc. Journal Physics D: Applied Physics, 2016, 49, 105502. | 2.8 | 30 |
| 27 | Short period sinusoidal thermal modulation for quantitative identification of gas species. Nanoscale, 2020, 12, 220-229. | 5.6 | 30 |
| 28 | Tunable SO ₂ -sensing performance of arsenene induced by Stone-Wales defects and external electric field. Applied Surface Science, 2020, 523, 146403. | 6.1 | 29 |
| 29 | Time-frequency analysis of PD-induced UHF signal in GIS and feature extraction using invariant moments. IET Science, Measurement and Technology, 2018, 12, 169-175. | 1.6 | 28 |
| 30 | Wall fluxes of reactive oxygen species of an rf atmospheric-pressure plasma and their dependence on sheath dynamics. Journal Physics D: Applied Physics, 2012, 45, 305205. | 2.8 | 27 |
| 31 | A first principles theoretical study of the adsorption of SF ₆ decomposition gases on a cassiterite (110) surface. Materials Chemistry and Physics, 2018, 212, 453-460. | 4.0 | 27 |
| 32 | Theoretical study of the decomposition mechanism of C ₄ F ₇ N. Journal Physics D: Applied Physics, 2019, 52, 245203. | 2.8 | 27 |
| 33 | Rate constants of C ₅ F ₁₀ O decomposition reactions at temperatures of 300-3500 K. Journal Physics D: Applied Physics, 2019, 52, 035202. | 2.8 | 27 |
| 34 | A dominant role of oxygen additive on cold atmospheric-pressure He + O ₂ plasmas. Physics of Plasmas, 2014, 21, . | 1.9 | 26 |
| 35 | Global model of an atmospheric-pressure capacitive discharge in helium with air impurities from 100 to 10 000 ppm. Plasma Sources Science and Technology, 2019, 28, 035006. | 3.1 | 26 |
| 36 | Comparison between electropositive and electronegative cold atmospheric-pressure plasmas: a modelling study. High Voltage, 2016, 1, 81-85. | 4.7 | 25 |

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|----|---|-----|-----------|
| 37 | Electromagnetic Vibrational Energy Harvester With Microfabricated Springs and Flexible Coils. IEEE Transactions on Industrial Electronics, 2021, 68, 2684-2693. | 7.9 | 23 |
| 38 | PTTG regulates the metabolic switch of ovarian cancer cells via the c-myc pathway. Oncotarget, 2015, 6, 40959-40969. | 1.8 | 23 |
| 39 | Fault Diagnosis of SF ₆ -Insulated Equipment by Micro Gas Sensor Array. IEEE Transactions on Power Delivery, 2023, 38, 222-230. | 4.3 | 23 |
| 40 | Dielectric breakdown properties of hot SF ₆ gas contaminated by copper at temperatures of 300–3500 K. Journal Physics D: Applied Physics, 2015, 48, 155205. | 2.8 | 22 |
| 41 | Aqueous Reactive Oxygen Species Induced by He+O ₂ Plasmas: Chemistry Pathways and Dosage Control Approaches. Plasma Chemistry and Plasma Processing, 2018, 38, 89-105. | 2.4 | 22 |
| 42 | Numerical simulation of negative point-plane corona discharge mechanism in SF ₆ gas. Plasma Sources Science and Technology, 2018, 27, 115001. | 3.1 | 22 |
| 43 | A Deep Learning Method to Detect Foreign Objects for Inspecting Power Transmission Lines. IEEE Access, 2020, 8, 94065-94075. | 4.2 | 21 |
| 44 | Antimonene: A Promising Candidate for SF ₆ Decomposition Gas Sensors With High Sensitivity and High Stability. IEEE Electron Device Letters, 2020, 41, 1408-1411. | 3.9 | 20 |
| 45 | Thermodynamic properties and transport coefficients of high-temperature CO ₂ thermal plasmas mixed with C ₂ F ₄ . Journal Physics D: Applied Physics, 2015, 48, 495202. | 2.8 | 19 |
| 46 | Properties of a weakly ionized NO gas sensor based on multi-walled carbon nanotubes. Applied Physics Letters, 2015, 107, . | 3.3 | 18 |
| 47 | Investigation of dielectric properties of cold C3F8 mixtures and hot C3F8 gas as Substitutes for SF ₆ . European Physical Journal D, 2015, 69, 1. | 1.3 | 17 |
| 48 | Propagation characteristics of PD-induced UHF signal in 126 kV GIS with three-phase construction based on time-frequency analysis. IET Science, Measurement and Technology, 2016, 10, 805-812. | 1.6 | 17 |
| 49 | Comparative study of titrated oral misoprostol solution and vaginal dinoprostone for labor induction at term pregnancy. Archives of Gynecology and Obstetrics, 2016, 294, 495-503. | 1.7 | 17 |
| 50 | SF ₆ Decomposition Gas Sensor Based on GeP Monolayer: A First-Principle Study. IEEE Sensors Journal, 2020, 20, 8997-9003. | 4.7 | 17 |
| 51 | Fabrication of polypyrrole/graphene oxide hybrid nanocomposite for ultrasensitive humidity sensing with unprecedented sensitivity. Journal of Materials Science: Materials in Electronics, 2019, 30, 4967-4976. | 2.2 | 16 |
| 52 | Enhanced sensing of sulfur hexafluoride decomposition components based on noble-metal-functionalized cerium oxide. Materials and Design, 2020, 187, 108391. | 7.0 | 16 |
| 53 | Variable radio-frequency cold atmospheric He + O ₂ discharges: from electron-heating mechanism to reactive species delivery. Journal Physics D: Applied Physics, 2013, 46, 415201. | 2.8 | 15 |
| 54 | Post-discharge evolution of reactive species in the water activated by a surface air plasma: a modeling study. Journal Physics D: Applied Physics, 2018, 51, 175202. | 2.8 | 15 |

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|----|---|------|-----------|
| 55 | Tunable adsorption behavior of small molecule on GeP monolayer by applied strain and electric field. Applied Surface Science, 2020, 520, 146257. | 6.1 | 15 |
| 56 | A high-integration sensor array sensitive to oxynitride mixture. Sensors and Actuators B: Chemical, 2017, 245, 183-188. | 7.8 | 14 |
| 57 | Influence of H ₂ O and O ₂ on the main discharge mechanism in 50 Hz ac point-plane corona discharge. Physics of Plasmas, 2019, 26, . | 1.9 | 14 |
| 58 | Theoretical study on decomposition pathways and reaction rate constants of C ₄ F ₇ N with O atom. Journal Physics D: Applied Physics, 2020, 53, 105202. | 2.8 | 13 |
| 59 | Tellurene Nanoflake-Based Gas Sensors for the Detection of Decomposition Products of SF ₆ . ACS Applied Nano Materials, 2020, 3, 7587-7594. | 5.0 | 13 |
| 60 | Thermodynamic Properties and Transport Coefficients of CO ₂ -Cu Thermal Plasmas. Plasma Chemistry and Plasma Processing, 2016, 36, 1141-1160. | 2.4 | 12 |
| 61 | Chemical kinetic modeling and experimental study of SF ₆ decomposition byproducts in 50 Hz ac point-plane corona discharges. Journal Physics D: Applied Physics, 2018, 51, 295202. | 2.8 | 12 |
| 62 | The varying characteristics of C ₅ F ₁₀ O decomposition components at 300 K - 3500 K with a chemical kinetic model. AIP Advances, 2019, 9, . | 1.3 | 12 |
| 63 | Hybrid piezo/triboelectric nanogenerator for stray magnetic energy harvesting and self-powered sensing applications. High Voltage, 2021, 6, 978-985. | 4.7 | 12 |
| 64 | A pilot study on the vacuum degree online detection of vacuum interrupter using laser-induced breakdown spectroscopy. Journal Physics D: Applied Physics, 2016, 49, 44LT01. | 2.8 | 11 |
| 65 | Reactive species in cold atmospheric-pressure He-Air plasmas: The influence of humidity. Physics of Plasmas, 2019, 26, . | 1.9 | 11 |
| 66 | Alloying of Alkali Metals with Tellurene. Advanced Energy Materials, 2021, 11, 2003248. | 19.5 | 11 |
| 67 | Low-Frequency Wireless Power Transfer Via Rotating Permanent Magnets. IEEE Transactions on Industrial Electronics, 2022, 69, 10656-10665. | 7.9 | 11 |
| 68 | Numerical Study on Atmospheric Pressure DBD in Helium: Single-breakdown and Multi-breakdown Discharges. Plasma Science and Technology, 2011, 13, 724-729. | 1.5 | 10 |
| 69 | Electron heating and particle fluxes in dual frequency atmospheric-pressure helium capacitive discharge. Journal Physics D: Applied Physics, 2016, 49, 49LT01. | 2.8 | 10 |
| 70 | The effect of pH on the aqueous reactive species in sodium phosphate buffers induced by surface air discharge. Journal Physics D: Applied Physics, 2019, 52, 415201. | 2.8 | 10 |
| 71 | 1D fluid model of RF-excited cold atmospheric plasmas in helium with air gas impurities. Physics of Plasmas, 2020, 27, . | 1.9 | 10 |
| 72 | Virtual Alternating Current Measurements Advance Semiconductor Gas Sensors™ Performance in the Internet of Things. IEEE Internet of Things Journal, 2022, 9, 5502-5510. | 8.7 | 10 |

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|----|--|-----|-----------|
| 73 | Temporal modulation of plasma species in atmospheric dielectric barrier discharges. <i>Physics of Plasmas</i> , 2014, 21, 073507. | 1.9 | 9 |
| 74 | DFT+U study of sulfur hexafluoride decomposition components adsorbed on ceria (110) surface. <i>Sensors and Actuators A: Physical</i> , 2019, 298, 111590. | 4.1 | 9 |
| 75 | The Decomposition Pathways of SF ₆ in the Presence of Organic Insulator Vapors. <i>Plasma Chemistry and Plasma Processing</i> , 2020, 40, 449-467. | 2.4 | 9 |
| 76 | Copper particle contamination detection of oil-immersed transformer using laser-induced breakdown spectroscopy. <i>Spectrochimica Acta, Part B: Atomic Spectroscopy</i> , 2020, 167, 105820. | 2.9 | 9 |
| 77 | Determination of the Dominant Species and Reactions in Non-equilibrium CO ₂ Thermal Plasmas with a Two-Temperature Chemical Kinetic Model. <i>Plasma Chemistry and Plasma Processing</i> , 2016, 36, 1301-1323. | 2.4 | 8 |
| 78 | Theoretical study of the decomposition mechanism of SF ₆ /Cu gas mixtures. <i>Journal Physics D: Applied Physics</i> , 2018, 51, 425202. | 2.8 | 8 |
| 79 | Numerical simulation of the Trichel pulse characteristics in SF ₆ /N ₂ gas mixtures. <i>Physics of Plasmas</i> , 2020, 27, 113508. | 1.9 | 8 |
| 80 | Multivariate Evaluation Method for Screening Optimum Gas-Sensitive Materials for Detecting SF ₆ Decomposition Products. <i>ACS Sensors</i> , 2020, 5, 2025-2035. | 7.8 | 8 |
| 81 | Detection and analysis of spark discharge products of C ₅ F ₁₀ O by electron attachment mass spectrometry. <i>Journal Physics D: Applied Physics</i> , 2021, 54, 045201. | 2.8 | 7 |
| 82 | Numerical study on helium-oxygen dielectric barrier discharges: From single-breakdown to multi-breakdowns per half-cycle. <i>Physics of Plasmas</i> , 2018, 25, 073508. | 1.9 | 6 |
| 83 | Multicomponent SF ₆ decomposition product sensing with a gas-sensing microchip. <i>Microsystems and Nanoengineering</i> , 2021, 7, 18. | 7.0 | 6 |
| 84 | Lightweight Neural Network for Gas Identification Based on Semiconductor Sensor. <i>IEEE Transactions on Instrumentation and Measurement</i> , 2022, 71, 1-8. | 4.7 | 6 |
| 85 | Antimonene: A promising candidate for acetone sensors with high selectivity and sensitivity. , 2017, , . | | 5 |
| 86 | The decomposition mechanism of C ₄ F ₇ N-Cu gas mixtures. <i>AIP Advances</i> , 2019, 9, . | 1.3 | 5 |
| 87 | A Novel Method for Magnetic Energy Harvesting Based on Capacitive Energy Storage and Core Saturation Modulation. <i>IEEE Transactions on Industrial Electronics</i> , 2023, 70, 2586-2595. | 7.9 | 5 |
| 88 | Propagation characteristics of atmospheric-pressure He+O ₂ plasmas inside a simulated endoscope channel. <i>Journal of Applied Physics</i> , 2015, 118, . | 2.5 | 4 |
| 89 | Insulation performance and liquefaction characteristic of C₅/F₁₀/O/CO₂ gas mixture. , 2017, , . | | 4 |
| 90 | Failure Prognosis of High Voltage Circuit Breakers with Temporal Latent Dirichlet Allocation. <i>Energies</i> , 2017, 10, 1913. | 3.1 | 4 |

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|-----|--|-----|-----------|
| 91 | Effects of oxygen concentration on helium-oxygen dielectric barrier discharges: From multi-breakdowns to single-breakdown per half-cycle. <i>Physics of Plasmas</i> , 2018, 25, 103511. | 1.9 | 4 |
| 92 | Global model of cold atmospheric He + air plasmas: A comparison of Maxwellian and non-Maxwellian EEDFs. <i>Physics of Plasmas</i> , 2019, 26, . | 1.9 | 4 |
| 93 | Detection of decomposition products of SF ₆ /air gas mixture by electron attachment mass spectrometry. <i>High Voltage</i> , 2022, 7, 536-544. | 4.7 | 4 |
| 94 | Study on the Insulation Performance and Decomposition Characteristics of C ₅ F ₁₀ O/CO ₂ Gas Mixture. <i>Plasma Chemistry and Plasma Processing</i> , 2022, 42, 957-971. | 2.4 | 4 |
| 95 | Effects of DC bias voltages on the RF-excited plasma-tissue interaction. <i>Journal Physics D: Applied Physics</i> , 2016, 49, 415201. | 2.8 | 3 |
| 96 | Influence of Al, Fe or Cu vapour on thermophysical properties of CO ₂ plasmas. <i>European Physical Journal D</i> , 2018, 72, 1. | 1.3 | 3 |
| 97 | A Microtester for Measuring the Reliability of Microdevices in Controlled Environmental Conditions. <i>Micromachines</i> , 2021, 12, 585. | 2.9 | 3 |
| 98 | Overheat diagnosis of power cable based on gas sensors: Device/material exploration. <i>Sensors and Actuators B: Chemical</i> , 2022, 350, 130837. | 7.8 | 3 |
| 99 | A miniaturized electromagnetic energy harvester with off-axis magnet and stacked flexible coils. , 2019, , . | | 2 |
| 100 | Effects of H ₂ O and O ₂ Impurities on the Trichel Pulses Characteristics of the Negative Point-Plane Corona Discharge in SF ₆ . <i>Plasma Chemistry and Plasma Processing</i> , 2021, 41, 1101. | 2.4 | 2 |
| 101 | Simplification of plasma chemistry by means of vital nodes identification. <i>Journal of Applied Physics</i> , 2021, 130, . | 2.5 | 2 |
| 102 | Decomposition Products and Mechanism of C ₅ F ₁₀ O/N ₂ Gas Mixture by Electron Attachment Mass Spectrometry. <i>IEEE Transactions on Dielectrics and Electrical Insulation</i> , 2022, 29, 1127-1134. | 2.9 | 2 |
| 103 | Investigation on the formation reactions of SOF ₄ and SO ₂ F ₂ under electric discharges. , 2016, , . | | 1 |
| 104 | Experiment of dielectric strength of C ₅ F ₁₀ O gas mixture and calculation of stratification. , 2017, , . | | 1 |
| 105 | Calculation on the composition varying characteristics of decaying SF ₆ arc in the presence of trace oxygen and moisture. , 2017, , . | | 1 |
| 106 | Effects of N ₂ contents on the non-equilibrium composition in SF ₆ decaying process. , 2017, , . | | 1 |
| 107 | Experimental Studies on Insulation and Arc Extinguishing Performance of C ₅ F ₁₀ O/CO ₂ Gas Mixture. , 2021, , . | | 1 |
| 108 | The study of higher-order resonant and non-resonant boundary value problems. <i>Electronic Journal of Qualitative Theory of Differential Equations</i> , 2016, , 1-10. | 0.5 | 1 |

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|-----|--|-----|-----------|
| 109 | Capacitive Readout System for Micro Sensors and Actuators With Automatic Parasitic Cancellation. IEEE Transactions on Instrumentation and Measurement, 2022, 71, 1-10. | 4.7 | 1 |
| 110 | Study on spark discharge enhanced laser-induced breakdown spectroscopy of Fe particles in transformer oil. Journal of Analytical Atomic Spectrometry, 2022, 37, 381-389. | 3.0 | 1 |
| 111 | Analysis of partial discharge in leading-out terminal on distribution switchgear. , 2016, , . | | 0 |
| 112 | Study on the laser-induced plasma properties of vacuum interrupter shield under different pressure. , 2017, , . | | 0 |
| 113 | Influence of H ₂ O on the decomposition products and discharge mechanism of ac point-plane corona discharge. , 2018, , . | | 0 |
| 114 | Compositions of SF ₆ - H ₂ O Decaying Arc at a Temperature Range of 1000~12000 K. , 2018, , . | | 0 |
| 115 | Combined Diffusion Coefficients in CO ₂ Thermal Plasmas Contaminated with Cu, Fe or Al. Plasma Chemistry and Plasma Processing, 2018, 38, 1133-1149. | 2.4 | 0 |
| 116 | 1D fluid model of the interaction between helium APPJ and deionized water. Journal Physics D: Applied Physics, 2022, 55, 255204. | 2.8 | 0 |