Makusu Tsutsui

List of Publications by Year
in descending order

137	4,326	101384	128067
papers	citations	36 h-index	60 g-index

139	139	139	3138
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Identifying single nucleotides by tunnelling current. Nature Nanotechnology, 2010, 5, 286-290.	15.6	367
2	Controlling DNA Translocation through Gate Modulation of Nanopore Wall Surface Charges. ACS Nano, 2011, 5, 5509-5518.	7.3	208
3	Formation and Self-Breaking Mechanism of Stable Atom-Sized Junctions. Nano Letters, 2008, 8, 345-349.	4.5	136
4	Single-Molecule Electrical Random Resequencing of DNA and RNA. Scientific Reports, 2012, 2, 501.	1.6	131
5	Single Molecule Electronics and Devices. Sensors, 2012, 12, 7259-7298.	2.1	122
6	Detection of post-translational modifications in single peptides using electron tunnelling currents. Nature Nanotechnology, 2014, 9, 835-840.	15.6	122
7	Effects of ZnSb and Zn inclusions on the thermoelectric properties of Î²-Zn4Sb3. Journal of Alloys and Compounds, 2003, 358, 252-256.	2.8	118
8	Gate Manipulation of DNA Capture into Nanopores. ACS Nano, 2011, 5, 8391-8397.	7.3	104
9	Local Heating in Metalâ^'Moleculeâ^'Metal Junctions. Nano Letters, 2008, 8, 3293-3297.	4.5	95
10	Single-Nanoparticle Detection Using a Low-Aspect-Ratio Pore. ACS Nano, 2012, 6, 3499-3505.	7.3	90
11	Dependence of Single-Molecule Conductance on Molecule Junction Symmetry. Journal of the American Chemical Society, 2011, 133, 11426-11429.	6.6	89
12	High-conductance states of single benzenedithiol molecules. Applied Physics Letters, 2006, 89, 163111.	1.5	87
13	Identifying Single Viruses Using Biorecognition Solid-State Nanopores. Journal of the American Chemical Society, 2018, 140, 16834-16841.	6.6	81
14	Single-molecule sensing electrode embedded in-plane nanopore. Scientific Reports, 2011, 1, 46.	1.6	80
15	Combining machine learning and nanopore construction creates an artificial intelligence nanopore for coronavirus detection. Nature Communications, 2021, 12, 3726.	5.8	80
16	Thermophoretic Manipulation of DNA Translocation through Nanopores. ACS Nano, 2013, 7, 538-546.	7.3	77
17	Electrical Detection of Single Methylcytosines in a DNA Oligomer. Journal of the American Chemical Society, 2011, 133, 9124-9128.	6.6	76
18	Particle Trajectory-Dependent Ionic Current Blockade in Low-Aspect-Ratio Pores. ACS Nano, 2016, 10, 803-809.	7.3	69

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19	Selective detections of single-viruses using solid-state nanopores. Scientific Reports, 2018, 8, 16305.	1.6	65
20	Effects of in-doping on the thermoelectric properties of Î²-Zn4Sb3. Intermetallics, 2004, 12, 809-813.	1.8	63
21	Transverse electric field dragging of DNA in a nanochannel. Scientific Reports, 2012, 2, 394.	1.6	60
22	Discriminating single-bacterial shape using low-aspect-ratio pores. Scientific Reports, 2017, 7, 17371.	1.6	58
23	Single-molecule identification via electric current noise. Nature Communications, 2010, 1, 138.	5.8	55
24	Quantitative Evaluation of Metalâ^'Molecule Contact Stability at the Single-Molecule Level. Journal of the American Chemical Society, 2009, 131, 10552-10556.	6.6	52
25	Solid-State Nanopore Platform Integrated with Machine Learning for Digital Diagnosis of Virus Infection. Analytical Chemistry, 2021, 93, 215-227.	3.2	52
26	Inelastic electron tunneling spectroscopy of single-molecule junctions using a mechanically controllable break junction. Nanotechnology, 2009, 20, 434008.	1.3	49
27	Fabrication of the gating nanopore device. Applied Physics Letters, 2009, 95, 123701.	1.5	47
28	Atomistic Mechanics and Formation Mechanism of Metalâ^'Moleculeâ^'Metal Junctions. Nano Letters, 2009, 9, 2433-2439.	4.5	47
29	Development of microfabricated TiO2 channel waveguides. AIP Advances, 2011, 1, .	0.6	47
30	Solid-state nanopore systems: from materials to applications. NPG Asia Materials, 2021, 13, .	3.8	47
31	Mechanism of How Salt-Gradient-Induced Charges Affect the Translocation of DNA Molecules through a Nanopore. Biophysical Journal, 2013, 105, 776-782.	0.2	45
32	High thermopower of mechanically stretched single-molecule junctions. Scientific Reports, 2015, 5, 11519.	1.6	45
33	Bias-induced local heating in Au atom-sized contacts. Nanotechnology, 2006, 17, 5334-5338.	1.3	43
34	Thermoelectricity in atom-sized junctions at room temperatures. Scientific Reports, 2013, 3, 3326.	1.6	42
35	Electrode-embedded nanopores for label-free single-molecule sequencing by electric currents. RSC Advances, 2014, 4, 15886-15899.	1.7	40
36	Thermoelectric properties of Zn4Sb3 thin films prepared by magnetron sputtering. Thin Solid Films, 2003, 443, 84-90.	0.8	37

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37	Identifying molecular signatures in metal-molecule-metal junctions. Nanoscale, 2009, 1, 164.	2.8	37
38	Mechanically-controllable single molecule switch based on configuration specific electrical conductivity of metalâ€“moleculeâ€“metal junctions. Chemical Science, 2010, 1, 247.	3.7	36
39	Short channel effects on electrokinetic energy conversion in solid-state nanopores. Scientific Reports, 2017, 7, 46661.	1.6	34
40	Identification of Individual Bacterial Cells through the Intermolecular Interactions with Peptide-Functionalized Solid-State Pores. Analytical Chemistry, 2018, 90, 1511-1515.	3.2	34
41	Thermodynamic stability of single molecule junctions. Applied Physics Letters, 2008, 92, .	1.5	33
42	Thermoelectric voltage measurements of atomic and molecular wires using microheater-embedded mechanically-controllable break junctions. Nanoscale, 2014, 6, 8235-8241.	2.8	33
43	High-Precision Single-Molecule Identification Based on Single-Molecule Information within a Noisy Matrix. Journal of Physical Chemistry C, 2019, 123, 15867-15873.	1.5	33
44	Fabrication of 0.5 nm electrode gaps using self-breaking technique. Applied Physics Letters, 2008, 93, 163115.	1.5	32
45	Electrokinetic Analysis of Energy Harvest from Natural Salt Gradients in Nanochannels. Scientific Reports, 2017, 7, 13156.	1.6	31
46	Quantitative analysis of DNA with single-molecule sequencing. Scientific Reports, 2018, 8, 8517.	1.6	31
47	Stretching-Induced Conductance Variations as Fingerprints of Contact Configurations in Single-Molecule Junctions. Journal of the American Chemical Society, 2017, 139, 8286-8294.	6.6	29
48	Break conductance of noble metal contacts. Physical Review B, 2005, 72, .	1.1	28
49	Bias-induced local heating in atom-sized metal contacts at 77K. Applied Physics Letters, 2007, 90, 133121.	1.5	28
50	Trapping and identifying single-nanoparticles using a low-aspect-ratio nanopore. Applied Physics Letters, 2013, 103, 013108.	1.5	28
51	Transverse Field Effects on DNA-Sized Particle Dynamics. Nano Letters, 2009, 9, 1659-1662.	4.5	27
52	Unsymmetrical hot electron heating in quasi-ballistic nanocontacts. Scientific Reports, 2012, 2, 217.	1.6	26
53	Salt-Gradient Approach for Regulating Capture-to-Translocation Dynamics of DNA with Nanochannel Sensors. ACS Sensors, 2016, 1, 807-816.	4.0	26
54	Rapid structural analysis of nanomaterials in aqueous solutions. Nanotechnology, 2017, 28, 155501.	1.3	26

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55	Single-Molecule Junctions with Strong Moleculeâ^'Electrode Coupling. Journal of the American Chemical Society, 2009, 131, 14146-14147.	6.6	25
56	Moleculeâ^'Electrode Bonding Design for High Single-Molecule Conductance. Journal of the American Chemical Society, 2010, 132, 17364-17365.	6.6	25
57	Tracking single-particle dynamics via combined optical and electrical sensing. Scientific Reports, 2013, 3, 1855.	1.6	24
58	Temporal Response of Ionic Current Blockade in Solid-State Nanopores. ACS Applied Materials & Interfaces, 2018, 10, 34751-34757.	4.0	22
59	Electrical breakdown of short multiwalled carbon nanotubes. Journal of Applied Physics, 2006, 100, 094302.	1.1	21
60	DNA capture in nanopores for genome sequencing: challenges and opportunities. Journal of Materials Chemistry, 2012, 22, 13423.	6.7	21
61	Digital Pathology Platform for Respiratory Tract Infection Diagnosis via Multiplex Single-Particle Detections. ACS Sensors, 2020, 5, 3398-3403.	4.0	21
62	Electrical detection of single pollen allergen particles using electrode-embedded microchannels. Journal of Physics Condensed Matter, 2012, 24, 164202.	0.7	20
63	Tailoring particle translocation via dielectrophoresis in pore channels. Scientific Reports, 2016, 6, 31670.	1.6	20
64	Roles of lattice cooling on local heating in metal-molecule-metal junctions. Applied Physics Letters, 2010, 96, .	1.5	18
65	Time-resolved neurotransmitter detection in mouse brain tissue using an artificial intelligence-nanogap. Scientific Reports, 2020, 10, 11244.	1.6	18
66	Effective Temperature of Au Nanocontacts under High Biases. Japanese Journal of Applied Physics, 2005, 44, 5188-5190.	0.8	17
67	Graphene/hexagonal boron nitride/graphene nanopore for electrical detection of single molecules. NPG Asia Materials, 2014, 6, e104-e104.	3.8	17
68	Nonequilibrium Ionic Response of Biased Mechanically Controllable Break Junction (MCBJ) Electrodes. Journal of Physical Chemistry C, 2014, 118, 3758-3765.	1.5	17
69	Solid-State Nanopore Time-of-Flight Mass Spectrometer. ACS Sensors, 2019, 4, 2974-2979.	4.0	17
70	Identifying Single Particles in Air Using a 3D-Integrated Solid-State Pore. ACS Sensors, 2019, 4, 748-755.	4.0	17
71	Distribution of 1G0Plateau Length of Au Contacts at Room Temperature. Japanese Journal of Applied Physics, 2007, 46, 3694-3699.	0.8	16
72	Atomically controlled fabrications of subnanometer scale electrode gaps. Journal of Applied Physics, 2010, 108, 064312.	1.1	16

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73	The impact of membrane surface charges on the ion transport in MoS2 nanopore power generators. Applied Physics Letters, 2017, 111, .	1.5	15
74	Rapid Discrimination of Extracellular Vesicles by Shape Distribution Analysis. Analytical Chemistry, 2021, 93, 7037-7044.	3.2	15
75	Fabrications of insulator-protected nanometer-sized electrode gaps. Journal of Applied Physics, 2014, 115, .	1.1	14
76	Discrimination of equi-sized nanoparticles by surface charge state using low-aspect-ratio pore sensors. Applied Physics Letters, 2014, 104, .	1.5	14
77	Field effect control of translocation dynamics in surround-gate nanopores. Communications Materials, 2021, 2, .	2.9	14
78	Conductance of Atom-Sized Zn Contacts. Japanese Journal of Applied Physics, 2006, 45, 7217-7223.	0.8	13
79	High-bias breakdown of Au/1,4-benzenedithiol/Au junctions. Applied Physics Letters, 2008, 93, 083121.	1.5	13
80	Fast and low-noise tunnelling current measurements for single-molecule detection in an electrolyte solution using insulator-protected nanoelectrodes. Nanoscale, 2017, 9, 4076-4081.	2.8	13
81	Electroosmosis-Driven Nanofluidic Diodes. Journal of Physical Chemistry B, 2020, 124, 7086-7092.	1.2	12
82	Quasi-Stable Salt Gradient and Resistive Switching in Solid-State Nanopores. ACS Applied Materials & Interfaces, 2020, 12, 52175-52181.	4.0	12
83	Deep Learningâ€Enhanced Nanopore Sensing of Singleâ€Nanoparticle Translocation Dynamics. Small Methods, 2021, 5, e2100191.	4.6	12
84	Ionic heat dissipation in solid-state pores. Science Advances, 2022, 8, eabl7002.	4.7	12
85	Conductance versus bias voltage characteristics of multi-walled carbon nanotubes. Nanotechnology, 2005, 16, 1863-1867.	1.3	10
86	Particle Capture in Solid-State Multipores. ACS Sensors, 2018, 3, 2693-2701.	4.0	10
87	High-throughput single nanoparticle detection using a feed-through channel-integrated nanopore. Nanoscale, 2019, 11, 20475-20484.	2.8	10
88	Vibrational spectroscopy of single-molecule junctions by direct current measurements. Journal of Applied Physics, 2013, 113, .	1.1	9
89	Dipole effects on the formation of molecular junctions. Nanoscale Horizons, 2016, 1, 399-406.	4.1	9
90	Roles of vacuum tunnelling and contact mechanics in single-molecule thermopower. Scientific Reports, 2017, 7, 44276.	1.6	9

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91	Machine learning-driven electronic identifications of single pathogenic bacteria. Scientific Reports, 2020, 10, 15525.	1.6	9
92	Local heating in noble metal nanocontacts under high biases at 77K. Applied Surface Science, 2006, 252, 8677-8682.	3.1	8
93	Detecting Single-Nucleotides by Tunneling Current Measurements at Sub-MHz Temporal Resolution. Sensors, 2017, 17, 885.	2.1	8
94	Break Conductance of Pt Nanocontacts. Japanese Journal of Applied Physics, 2005, 44, 6321-6326.	0.8	7
95	Fluid Dynamics and Electrical Detection of Î»DNA in Electrode-Embedded Nanochannels. Journal of Biomechanical Science and Engineering, 2013, 8, 244-256.	0.1	7
96	Back-Side Polymer-Coated Solid-State Nanopore Sensors. ACS Omega, 2019, 4, 12561-12566.	1.6	7
97	Dissecting Time-Evolved Conductance Behavior of Single Molecule Junctions by Nonparametric Machine Learning. Journal of Physical Chemistry Letters, 2020, 11, 6567-6572.	2.1	7
98	AC impedance of multi-walled carbon nanotubes. E-Journal of Surface Science and Nanotechnology, 2007, 5, 12-16.	0.1	7
99	Bias-Induced Local Heating Effects on Multi-Walled Carbon Nanotubeâ€“Au Contacts. Japanese Journal of Applied Physics, 2006, 45, 341-345.	0.8	6
100	Electrical trapping mechanism of single-microparticles in a pore sensor. AIP Advances, 2016, 6, 115004.	0.6	6
101	Electric field interference and bimodal particle translocation in nano-integrated multipores. Nanoscale, 2019, 11, 7547-7553.	2.8	6
102	Nanochannelâ€Based Interfacial Memristor: Electrokinetic Analysis of the Frequency Characteristics. Advanced Electronic Materials, 2021, 7, 2000848.	2.6	6
103	Impact of Water-Depletion Layer on Transport in Hydrophobic Nanochannels. Analytical Chemistry, 2015, 87, 12040-12050.	3.2	5
104	Silicon substrate effects on ionic current blockade in solid-state nanopores. Nanoscale, 2019, 11, 4190-4197.	2.8	5
105	Heat dissipation in quasi-ballistic single-atom contacts at room temperature. Scientific Reports, 2019, 9, 18677.	1.6	5
106	Tailoring Dielectric Surface Charge via Atomic Layer Thickness. ACS Applied Materials & Interfaces, 2020, 12, 5025-5030.	4.0	5
107	Classification from positive and unlabeled data based on likelihood invariance for measurement. Intelligent Data Analysis, 2021, 25, 57-79.	0.4	5
108	Salt Gradient Control of Translocation Dynamics in a Solid-State Nanopore. Analytical Chemistry, 2021, 93, 16700-16708.	3.2	5

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109	Dependence of Molecular Diode Behaviors on Aromaticity. Journal of Physical Chemistry Letters, 2022, 13, 6359-6366.	2.1	5
110	Embedded TiO2 waveguides for sensing nanofluorophores in a microfluidic channel. Applied Physics Letters, 2012, 101, 153115.	1.5	4
111	High speed DNA denaturation using microheating devices. Applied Physics Letters, 2013, 103, 023112.	1.5	4
112	Fluctuated atom-sized junctions in a liquid environment. Journal of Applied Physics, 2013, 113, 024303.	1.1	4
113	Measuring Single-Molecule Conductance at An Ultra-Low Molecular Concentration in Vacuum. Micromachines, 2018, 9, 282.	1.4	4
114	Volume discrimination of nanoparticles via electrical trapping using nanopores. Journal of Nanobiotechnology, 2019, 17, 40.	4.2	4
115	High-throughput single-particle detections using a dual-height-channel-integrated pore. Lab on A Chip, 2019, 19, 1352-1358.	3.1	4
116	Crucial Role of Out-of-Pore Resistance on Temporal Response of Ionic Current in Nanopore Sensors. ACS Sensors, 2020, 5, 1597-1603.	4.0	4
117	Dielectric Coatings for Resistive Pulse Sensing Using Solid-State Pores. ACS Applied Materials & Interfaces, 2021, 13, 10632-10638.	4.0	4
118	Detecting Single Molecule Deoxyribonucleic Acid in a Cell Using a Threeâ€Dimensionally Integrated Nanopore. Small Methods, 2021, 5, 2100542.	4.6	4
119	Remote heat dissipation in atom-sized contacts. Scientific Reports, 2018, 8, 7842.	1.6	3
120	Nano-corrugated Nanochannels for In Situ Tracking of Single-Nanoparticle Translocation Dynamics. ACS Sensors, 2020, 5, 2530-2536.	4.0	3
121	Finite-difference time-domain simulations of inverted cone-shaped plasmonic nanopore structures. Journal of Applied Physics, 2020, 127, .	1.1	3
122	Electrical Nucleotide Sensor Based on Synthetic Guanineâ€Receptorâ€Modified Electrodes. ChemistrySelect, 2018, 3, 3819-3824.	0.7	2
123	Effect of Electrolyte Concentration on Cell Sensing by Measuring Ionic Current Waveform through Micropores. Biosensors, 2021, 11, 78.	2.3	2
124	Nanofluidics for Biomolecular Detection. RSC Nanoscience and Nanotechnology, 2016, , 150-189.	0.2	2
125	Measurement Environment Dependency of Single Molecule Conductance. Chemistry Letters, 2008, 37, 990-991.	0.7	1
126	Tunnel-current based single-molecule identification of DNA/RNA oligmer by using nano-MCBJ. , 2012, , .		1

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127	Quadrupole-electrode-integrated micropores for selective single-particle detections. , 2018, , .		1
128	Thermally activated charge transport in carbon atom chains. Nanoscale, 2020, 12, 11001-11007.	2.8	1
129	Detecting Single Molecule Deoxyribonucleic Acid in a Cell Using a Threeâ€Dimensionally Integrated Nanopore (Small Methods 9/2021). Small Methods, 2021, 5, 2170043.	4.6	1
130	3D designing of resist membrane pores via direct electron beam lithography. Sensors and Actuators B: Chemical, 2022, 357, 131380.	4.0	1
131	Electrical Detection of Pollen Allergen Using Electrode-Embedded-Micro-Channel. , 2011, , .		0
132	Nano-scale reactive-ion dry-etching with electron-beam-baked resist. , 2012, , .		0
133	Development of single-molecule tunnel-current based nucleotide identification method. , 2014, , .		0
134	Development of a Single Molecular Tunnel-Current Identification method For Electrical Genome Sequencing. Materials Research Society Symposia Proceedings, 2015, 1724, 13.	0.1	0
135	Impact of ionization equilibrium on electrokinetic flow of weak electrolytes in nanochannels. Nanotechnology, 2018, 29, 295402.	1.3	0
136	Inertial focusing and zeta potential measurements of single-nanoparticles using octet-nanochannels. Lab on A Chip, 2021, 21, 3076-3085.	3.1	0
137	Diagnosing Diseases with Nanopore Devices and Machine Learning. Journal of the Institute of Electrical Engineers of Japan, 2021, 141, 512-515.	0.0	0