Masateru Taniguchi

List of Publications by Year
in descending order

79 papers	3,163 citations	147801 31 h-index	155660 55 g-index
80 all docs	80 docs citations	80 times ranked	2445 citing authors

#	Article	IF	Citations
1	Identifying single nucleotides by tunnelling current. Nature Nanotechnology, 2010, 5, 286-290.	31.5	367
2	Controlling DNA Translocation through Gate Modulation of Nanopore Wall Surface Charges. ACS Nano, 2011, 5, 5509-5518.	14.6	208
3	Decoding DNA, RNA and peptides with quantum tunnelling. Nature Nanotechnology, 2016, 11, 117-126.	31.5	183
4	Formation and Self-Breaking Mechanism of Stable Atom-Sized Junctions. Nano Letters, 2008, 8, 345-349.	9.1	136
5	Single-Molecule Electrical Random Resequencing of DNA and RNA. Scientific Reports, 2012, 2, 501.	3.3	131
6	Single Molecule Electronics and Devices. Sensors, 2012, 12, 7259-7298.	3.8	122
7	Detection of post-translational modifications in single peptides using electron tunnelling currents. Nature Nanotechnology, 2014, 9, 835-840.	31.5	122
8	Gate Manipulation of DNA Capture into Nanopores. ACS Nano, 2011, 5, 8391-8397.	14.6	104
9	Local Heating in Metalâ^'Moleculeâ^'Metal Junctions. Nano Letters, 2008, 8, 3293-3297.	9.1	95
10	Single-Nanoparticle Detection Using a Low-Aspect-Ratio Pore. ACS Nano, 2012, 6, 3499-3505.	14.6	90
11	Dependence of Single-Molecule Conductance on Molecule Junction Symmetry. Journal of the American Chemical Society, 2011, 133, 11426-11429.	13.7	89
12	Identifying Single Viruses Using Biorecognition Solid-State Nanopores. Journal of the American Chemical Society, 2018, 140, 16834-16841.	13.7	81
13	Combining machine learning and nanopore construction creates an artificial intelligence nanopore for coronavirus detection. Nature Communications, 2021, 12, 3726.	12.8	80
14	Electrical Detection of Single Methylcytosines in a DNA Oligomer. Journal of the American Chemical Society, 2011, 133, 9124-9128.	13.7	76
15	Particle Trajectory-Dependent Ionic Current Blockade in Low-Aspect-Ratio Pores. ACS Nano, 2016, 10, 803-809.	14.6	69
16	Selective detections of single-viruses using solid-state nanopores. Scientific Reports, 2018, 8, 16305.	3.3	65
17	Discriminating single-bacterial shape using low-aspect-ratio pores. Scientific Reports, 2017, 7, 17371.	3.3	58
18	Single-molecule identification via electric current noise. Nature Communications, 2010, 1, 138.	12.8	55

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19	Quantitative Evaluation of Metalâˆ'Molecule Contact Stability at the Single-Molecule Level. Journal of the American Chemical Society, 2009, 131, 10552-10556.	13.7	52
20	Inelastic electron tunneling spectroscopy of single-molecule junctions using a mechanically controllable break junction. Nanotechnology, 2009, 20, 434008.	2.6	49
21	Atomistic Mechanics and Formation Mechanism of Metalâˆ'Moleculeâˆ'Metal Junctions. Nano Letters, 2009, 9, 2433-2439.	9.1	47
22	Mechanism of How Salt-Gradient-Induced Charges Affect the Translocation of DNA Molecules through a Nanopore. Biophysical Journal, 2013, 105, 776-782.	0.5	45
23	High thermopower of mechanically stretched single-molecule junctions. Scientific Reports, 2015, 5, 11519.	3.3	45
24	Thermoelectricity in atom-sized junctions at room temperatures. Scientific Reports, 2013, 3, 3326.	3.3	42
25	Electrode-embedded nanopores for label-free single-molecule sequencing by electric currents. RSC Advances, 2014, 4, 15886-15899.	3.6	40
26	Identifying molecular signatures in metal-molecule-metal junctions. Nanoscale, 2009, 1, 164.	5.6	37
27	Mechanically-controllable single molecule switch based on configuration specific electrical conductivity of metalâ€“moleculeâ€“metal junctions. Chemical Science, 2010, 1, 247.	7.4	36
28	Identification of Individual Bacterial Cells through the Intermolecular Interactions with Peptide-Functionalized Solid-State Pores. Analytical Chemistry, 2018, 90, 1511-1515.	6.5	34
29	Thermoelectric voltage measurements of atomic and molecular wires using microheater-embedded mechanically-controllable break junctions. Nanoscale, 2014, 6, 8235-8241.	5.6	33
30	High-Precision Single-Molecule Identification Based on Single-Molecule Information within a Noisy Matrix. Journal of Physical Chemistry C, 2019, 123, 15867-15873.	3.1	33
31	Fabrication of 0.5 nm electrode gaps using self-breaking technique. Applied Physics Letters, 2008, 93, 163115.	3.3	32
32	Electrokinetic Analysis of Energy Harvest from Natural Salt Gradients in Nanochannels. Scientific Reports, 2017, 7, 13156.	3.3	31
33	Quantitative analysis of DNA with single-molecule sequencing. Scientific Reports, 2018, 8, 8517.	3.3	31
34	Trapping and identifying single-nanoparticles using a low-aspect-ratio nanopore. Applied Physics Letters, 2013, 103, 013108.	3.3	28
35	Salt-Gradient Approach for Regulating Capture-to-Translocation Dynamics of DNA with Nanochannel Sensors. ACS Sensors, 2016, 1, 807-816.	7.8	26
36	Rapid structural analysis of nanomaterials in aqueous solutions. Nanotechnology, 2017, 28, 155501.	2.6	26

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37	Combination of Single-Molecule Electrical Measurements and Machine Learning for the Identification of Single Biomolecules. ACS Omega, 2020, 5, 959-964.	3.5	26
38	Moleculeâ˘Electrode Bonding Design for High Single-Molecule Conductance. Journal of the American Chemical Society, 2010, 132, 17364-17365.	13.7	25
39	Temporal Response of Ionic Current Blockade in Solid-State Nanopores. ACS Applied Materials & Interfaces, 2018, 10, 34751-34757.	8.0	22
40	Highly Conductive Nucleotide Analogue Facilitates Base-Calling in Quantum-Tunneling-Based DNA Sequencing. ACS Nano, 2019, 13, 5028-5035.	14.6	22
41	DNA capture in nanopores for genome sequencing: challenges and opportunities. Journal of Materials Chemistry, 2012, 22, 13423.	6.7	21
42	Direct Analysis of Incorporation of an Anticancer Drug into DNA at Single-Molecule Resolution. Scientific Reports, 2019, 9, 3886.	3.3	19
43	Time-resolved neurotransmitter detection in mouse brain tissue using an artificial intelligence-nanogap. Scientific Reports, 2020, 10, 11244.	3.3	18
44	Identifying Single Particles in Air Using a 3D-Integrated Solid-State Pore. ACS Sensors, 2019, 4, 748-755.	7.8	17
45	Rapid Discrimination of Extracellular Vesicles by Shape Distribution Analysis. Analytical Chemistry, 2021, 93, 7037-7044.	6.5	15
46	Discrimination of equi-sized nanoparticles by surface charge state using low-aspect-ratio pore sensors. Applied Physics Letters, 2014, 104, .	3.3	14
47	Electroosmosis-Driven Nanofluidic Diodes. Journal of Physical Chemistry B, 2020, 124, 7086-7092.	2.6	12
48	Quasi-Stable Salt Gradient and Resistive Switching in Solid-State Nanopores. ACS Applied Materials & Interfaces, 2020, 12, 52175-52181.	8.0	12
49	Paving the way to single-molecule chemistry through molecular electronics. Physical Chemistry Chemical Physics, 2019, 21, 9641-9650.	2.8	11
50	Particle Capture in Solid-State Multipores. ACS Sensors, 2018, 3, 2693-2701.	7.8	10
51	Sensing the Performance of Artificially Intelligent Nanopores Developed by Integrating Solid-State Nanopores with Machine Learning Methods. Journal of Physical Chemistry C, 2022, 126, 12197-12209.	3.1	10
52	Single-Molecule Counting of Nucleotide by Electrophoresis with Nanochannel-Integrated Nano-Gap Devices. Micromachines, 2020, 11, 982.	2.9	9
53	Detecting Single-Nucleotides by Tunneling Current Measurements at Sub-MHz Temporal Resolution. Sensors, 2017, 17, 885.	3.8	8
54	Detection of an alcohol-associated cancer marker by single-molecule quantum sequencing. Chemical Communications, 2020, 56, 14299-14302.	4.1	8

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55	Back-Side Polymer-Coated Solid-State Nanopore Sensors. ACS Omega, 2019, 4, 12561-12566.	3.5	7
56	Dissecting Time-Evolved Conductance Behavior of Single Molecule Junctions by Nonparametric Machine Learning. Journal of Physical Chemistry Letters, 2020, 11, 6567-6572.	4.6	7
57	Length Discrimination of Homo-oligomeric Nucleic Acids with Single-molecule Measurement. Analytical Sciences, 2021, 37, 513-517.	1.6	7
58	Review of the use of nanodevices to detect single molecules. Analytical Biochemistry, 2022, 654, 114645.	2.4	7
59	Tailoring Dielectric Surface Charge via Atomic Layer Thickness. ACS Applied Materials & Interfaces, 2020, 12, 5025-5030.	8.0	5
60	Development of Single-Molecule Electrical Identification Method for Cyclic Adenosine Monophosphate Signaling Pathway. Nanomaterials, 2021, 11, 784.	4.1	5
61	Electronic and spin structures of CaMn4Ox clusters in the S0 state of the oxygen evolving complex of photosystem II. Domain-based local pair natural orbital (DLPNO) coupled-cluster (CC) calculations using optimized geometries and natural orbitals (UNO) by hybrid density functional theory (HDFT) calculations. Physical Chemistry Chemical Physics, 2020, 22, 27191-27205.	2.8	5
62	Salt Gradient Control of Translocation Dynamics in a Solid-State Nanopore. Analytical Chemistry, 2021, 93, 16700-16708.	6.5	5
63	Dependence of Molecular Diode Behaviors on Aromaticity. Journal of Physical Chemistry Letters, 2022, 13, 6359-6366.	4.6	5
64	Measuring Single-Molecule Conductance at An Ultra-Low Molecular Concentration in Vacuum. Micromachines, 2018, 9, 282.	2.9	4
65	Crucial Role of Out-of-Pore Resistance on Temporal Response of Ionic Current in Nanopore Sensors. ACS Sensors, 2020, 5, 1597-1603.	7.8	4
66	Dielectric Coatings for Resistive Pulse Sensing Using Solid-State Pores. ACS Applied Materials & Interfaces, 2021, 13, 10632-10638.	8.0	4
67	Singleâ€Molecule Classification of Aspartic Acid and Leucine by Molecular Recognition through Hydrogen Bonding and Timeâ€Series Analysis. Chemistry - an Asian Journal, 2022, 17, .	3.3	4
68	Chemicalâ€Labelingâ€Assisted Detection of Nucleobase Modifications by Quantumâ€Tunnelingâ€Based Singleâ€Molecule Sensing. ChemBioChem, 2020, 21, 335-339.	2.6	3
69	Direct Observation of Distinctive Electronic States of Ferrocene Moieties in Ferrocene-Bridged Trisporphyrin on Au(111) Using Scanning Tunneling Microscopy/Spectroscopy. Langmuir, 2021, 37, 6468-6474.	3.5	3
70	Challenges of the practical applications of solid-state nanopore platforms for sensing biomolecules. Applied Physics Express, 2022, 15, 070101.	2.4	3
71	Electrical Nucleotide Sensor Based on Synthetic Guanineâ€Receptorâ€Modified Electrodes. ChemistrySelect, 2018, 3, 3819-3824.	1.5	2
72	Analysis Method of the Ion Currentâ€"Time Waveform Obtained from Low Aspect Ratio Solid-state Nanopores. Analytical Sciences, 2020, 36, 161-175.	1.6	2

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73	Key aurophilic motif for robust quantum-tunneling-based characterization of a nucleoside analogue marker. Chemical Science, 2020, 11, 10135-10142.	7.4	2
74	Thermally activated charge transport in carbon atom chains. Nanoscale, 2020, 12, 11001-11007.	5.6	1
75	Application of Micropore Device for Accurate, Easy, and Rapid Discrimination of Saccharomyces pastorianus from Dekkera spp.. Biosensors, 2021, 11, 272.	4.7	1
76	Experimental Analyses of Linear-type Aerospike Nozzles with Sidewalls. , 0, , .		0
77	Inertial focusing and zeta potential measurements of single-nanoparticles using octet-nanochannels. Lab on A Chip, 2021, 21, 3076-3085.	6.0	0
78	Diagnosing Diseases with Nanopore Devices and Machine Learning. Journal of the Institute of Electrical Engineers of Japan, 2021, 141, 512-515.	0.0	0
79	Direct Observation of Distinctive Electronic States and Mechanical Function of Ferrocene Moieties in Ferrocene-bridged Trisporphyrin Using Scanning Tunneling Microscopy/Spectroscopy. Vacuum and Surface Science, 2021, 64, 521-526.	0.1	0