

Tohru Tsuruoka

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

88

papers

4,690

citations

33

h-index

68

g-index

91

ext. papers

5,198

ext. citations

7.6

avg, IF

5.59

L-index

#	Paper	IF	Citations
88	Short-term plasticity and long-term potentiation mimicked in single inorganic synapses. <i>Nature Materials</i> , 2011 , 10, 591-5	27	1159
87	Atomic switch: atom/ion movement controlled devices for beyond von-neumann computers. <i>Advanced Materials</i> , 2012 , 24, 252-67	24	295
86	Learning abilities achieved by a single solid-state atomic switch. <i>Advanced Materials</i> , 2010 , 22, 1831-4	24	244
85	Forming and switching mechanisms of a cation-migration-based oxide resistive memory. <i>Nanotechnology</i> , 2010 , 21, 425205	3.4	242
84	Effects of Moisture on the Switching Characteristics of Oxide-Based, Gapless-Type Atomic Switches. <i>Advanced Functional Materials</i> , 2012 , 22, 70-77	15.6	217
83	Atomically controlled electrochemical nucleation at superionic solid electrolyte surfaces. <i>Nature Materials</i> , 2012 , 11, 530-5	27	187
82	Generic relevance of counter charges for cation-based nanoscale resistive switching memories. <i>ACS Nano</i> , 2013 , 7, 6396-402	16.7	183
81	On-demand nanodevice with electrical and neuromorphic multifunction realized by local ion migration. <i>ACS Nano</i> , 2012 , 6, 9515-21	16.7	153
80	Conductance quantization and synaptic behavior in a Ta2O5-based atomic switch. <i>Nanotechnology</i> , 2012 , 23, 435705	3.4	135
79	Redox Reactions at Cu,Ag/Ta2O5 Interfaces and the Effects of Ta2O5 Film Density on the Forming Process in Atomic Switch Structures. <i>Advanced Functional Materials</i> , 2015 , 25, 6374-6381	15.6	133
78	Controlling the Synaptic Plasticity of a Cu2S Gap-Type Atomic Switch. <i>Advanced Functional Materials</i> , 2012 , 22, 3606-3613	15.6	132
77	A Polymer-Electrolyte-Based Atomic Switch. <i>Advanced Functional Materials</i> , 2011 , 21, 93-99	15.6	117
76	Mechanism for Conducting Filament Growth in Self-Assembled Polymer Thin Films for Redox-Based Atomic Switches. <i>Advanced Materials</i> , 2016 , 28, 640-8	24	95
75	Synaptic plasticity and memory functions achieved in a WO3-x-based nanoionics device by using the principle of atomic switch operation. <i>Nanotechnology</i> , 2013 , 24, 384003	3.4	92
74	Rate-Limiting Processes Determining the Switching Time in a Ag2S Atomic Switch. <i>Journal of Physical Chemistry Letters</i> , 2010 , 1, 604-608	6.4	90
73	Effects of moisture and redox reactions in VCM and ECM resistive switching memories. <i>Journal Physics D: Applied Physics</i> , 2018 , 51, 413001	3	72
72	Temperature effects on the switching kinetics of a Cu-Ta2O5-based atomic switch. <i>Nanotechnology</i> , 2011 , 22, 254013	3.4	66

71	Sensory and short-term memory formations observed in a Ag ₂ S gap-type atomic switch. <i>Applied Physics Letters</i> , 2011 , 99, 203108	3.4	60
70	Alcohol-induced decomposition of Olmstead's crystalline Ag(I)Fullerene heteronanostructure yields Bucky cubes <i>Journal of Materials Chemistry C</i> , 2013 , 1, 1174-1181	7.1	59
69	Highly Reproducible and Regulated Conductance Quantization in a Polymer-Based Atomic Switch. <i>Advanced Functional Materials</i> , 2017 , 27, 1605104	15.6	48
68	Mesoporous fullerene C70 cubes with highly crystalline frameworks and unusually enhanced photoluminescence properties. <i>Materials Horizons</i> , 2018 , 5, 285-290	14.4	46
67	Surfactant-Triggered Nanoarchitectonics of Fullerene C Crystals at a Liquid-Liquid Interface. <i>Langmuir</i> , 2016 , 32, 12511-12519	4	43
66	Oxygen migration process in the interfaces during bipolar resistance switching behavior of WO ₃ -based nanoionics devices. <i>Applied Physics Letters</i> , 2012 , 100, 231603	3.4	43
65	AgI/Ag Heterojunction Nanowires: Facile Electrochemical Synthesis, Photoluminescence, and Enhanced Ionic Conductivity. <i>Advanced Functional Materials</i> , 2007 , 17, 1466-1472	15.6	43
64	Humidity effects on the redox reactions and ionic transport in a Cu/Ta ₂ O ₅ /Pt atomic switch structure. <i>Japanese Journal of Applied Physics</i> , 2016 , 55, 06GJ09	1.4	41
63	Volatile/Nonvolatile Dual-Functional Atom Transistor. <i>Applied Physics Express</i> , 2011 , 4, 015204	2.4	39
62	Memristive operations demonstrated by gap-type atomic switches. <i>Applied Physics A: Materials Science and Processing</i> , 2011 , 102, 811-815	2.6	38
61	Nanoarchitectonics for Controlling the Number of Dopant Atoms in Solid Electrolyte Nanodots. <i>Advanced Materials</i> , 2018 , 30, 1703261	24	37
60	Rate-limiting processes in the fast SET operation of a gapless-type Cu-Ta ₂ O ₅ atomic switch. <i>AIP Advances</i> , 2013 , 3, 032114	1.5	37
59	Atomic switches: atomic-movement-controlled nanodevices for new types of computing. <i>Science and Technology of Advanced Materials</i> , 2011 , 12, 013003	7.1	37
58	Kinetic factors determining conducting filament formation in solid polymer electrolyte based planar devices. <i>Nanoscale</i> , 2016 , 8, 13976-84	7.7	37
57	Laser Patterning of Optically Reconfigurable Transistor Channels in a Photochromic Diarylethene Layer. <i>Nano Letters</i> , 2016 , 16, 7474-7480	11.5	36
56	Effects of temperature and ambient pressure on the resistive switching behaviour of polymer-based atomic switches. <i>Journal of Materials Chemistry C</i> , 2015 , 3, 5715-5720	7.1	33
55	In situ and nonvolatile photoluminescence tuning and nanodomain writing demonstrated by all-solid-state devices based on graphene oxide. <i>ACS Nano</i> , 2015 , 9, 2102-10	16.7	33
54	Flexible resistive switching memory using inkjet printing of a solid polymer electrolyte. <i>AIP Advances</i> , 2012 , 2, 022144	1.5	26

53	Operating mechanism and resistive switching characteristics of two- and three-terminal atomic switches using a thin metal oxide layer. <i>Journal of Electroceramics</i> , 2017 , 39, 143-156	1.5	21
52	Identification and roles of nonstoichiometric oxygen in amorphous Ta ₂ O ₅ thin films deposited by electron beam and sputtering processes. <i>Applied Surface Science</i> , 2016 , 385, 426-435	6.7	21
51	Volatile and nonvolatile selective switching of a photo-assisted initialized atomic switch. <i>Nanotechnology</i> , 2013 , 24, 384006	3.4	20
50	Atomic Layer Deposition of a Magnesium Phosphate Solid Electrolyte. <i>Chemistry of Materials</i> , 2019 , 31, 5566-5575	9.6	19
49	Approach for measuring complex refractive index of molten Sb ₂ Te ₃ by spectroscopic ellipsometry. <i>Applied Physics Letters</i> , 2012 , 100, 101910	3.4	19
48	Ionic decision-maker created as novel, solid-state devices. <i>Science Advances</i> , 2018 , 4, eaau2057	14.3	19
47	Thermally stable resistive switching of a polyvinyl alcohol-based atomic switch. <i>Journal of Materials Chemistry C</i> , 2018 , 6, 6460-6464	7.1	17
46	Position detection and observation of a conducting filament hidden under a top electrode in a TaO _x -based atomic switch. <i>Nanotechnology</i> , 2015 , 26, 145702	3.4	15
45	Decision maker based on atomic switches. <i>AIMS Materials Science</i> , 2016 , 3, 245-259	1.9	15
44	Composition of thin Ta ₂ O ₅ films deposited by different methods and the effect of humidity on their resistive switching behavior. <i>Japanese Journal of Applied Physics</i> , 2016 , 55, 06GG08	1.4	14
43	Theoretical investigation of kinetics of a Cu ₂ S-based gap-type atomic switch. <i>Applied Physics Letters</i> , 2011 , 98, 233501	3.4	14
42	Ultra-low voltage and ultra-low power consumption nonvolatile operation of a three-terminal atomic switch. <i>Advanced Materials</i> , 2015 , 27, 6029-33	24	12
41	Nonvolatile three-terminal operation based on oxygen vacancy drift in a Pt/Ta ₂ O ₅ /Pt, Pt structure. <i>Applied Physics Letters</i> , 2013 , 102, 233508	3.4	12
40	Quantized conductance operation near a single-atom point contact in a polymer-based atomic switch. <i>Japanese Journal of Applied Physics</i> , 2017 , 56, 06GF02	1.4	11
39	Significant roles of the polymer matrix in the resistive switching behavior of polymer-based atomic switches. <i>Journal Physics D: Applied Physics</i> , 2019 , 52, 445301	3	11
38	Electron transport in the barriers of AlGaAs/GaAs quantum well structures observed by scanning-tunneling-microscope light-emission spectroscopy. <i>Applied Physics Letters</i> , 2002 , 80, 3748-3750	3.4	10
37	Time-Dependent Operations in Molecular Gap Atomic Switches. <i>Physica Status Solidi (B): Basic Research</i> , 2019 , 256, 1900068	1.3	9
36	Direct observation of anodic dissolution and filament growth behavior in polyethylene-oxide-based atomic switch structures. <i>Japanese Journal of Applied Physics</i> , 2016 , 55, 06GK02	1.4	9

35	Development of a molecular gap-type atomic switch and its stochastic operation. <i>Journal of Applied Physics</i> , 2018 , 124, 152114	2.5	9
34	Resistivity control by the electrochemical removal of dopant atoms from a nanodot. <i>Faraday Discussions</i> , 2019 , 213, 29-40	3.6	6
33	Dynamic moderation of an electric field using a SiO ₂ switching layer in TaO _x -based ReRAM. <i>Physica Status Solidi - Rapid Research Letters</i> , 2015 , 9, 166-170	2.5	6
32	Investigation of Ag and Cu Filament Formation Inside the Metal Sulfide Layer of an Atomic Switch Based on Point-Contact Spectroscopy. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 27178-27182	9.5	5
31	Quantized Conductance and Neuromorphic Behavior of a Gapless-Type Ag-Ta ₂ O ₅ Atomic Switch. <i>Materials Research Society Symposia Proceedings</i> , 2013 , 1562, 1		5
30	Real-space observation of electron transport in AlGaAs/GaAs quantum wells using a scanning tunneling microscope. <i>Thin Solid Films</i> , 2004 , 464-465, 469-472	2.2	4
29	A Voltage-Controlled Oscillator Using Variable Capacitors with a Thin Dielectric Electrolyte Film. <i>ACS Applied Electronic Materials</i> , 2020 , 2, 2788-2797	4	4
28	Nanosecond Fast Switching Processes Observed in Gapless-Type, Ta ₂ O ₅ Based Atomic Switches. <i>Materials Research Society Symposia Proceedings</i> , 2015 , 1729, 35-40		3
27	The rate limiting process and its activation energy in the forming process of a Cu/Ta ₂ O ₅ /Pt gapless-type atomic switch. <i>Japanese Journal of Applied Physics</i> , 2018 , 57, 035202	1.4	3
26	Atomic Switches 2016 , 515-546		3
25	Synaptic plasticity and memristive behavior operated by atomic switches 2014 ,		3
24	Diffusion process of electrons injected from STM tip into AlGaAs/GaAs quantum wells. <i>Applied Surface Science</i> , 2002 , 190, 275-278	6.7	3
23	A Variety of Functional Devices Realized by Ionic Nanoarchitectonics, Complementing Electronics Components. <i>Advanced Electronic Materials</i> , 2100645	6.4	3
22	Neuromorphic System for Edge Information Encoding: Emulating Retinal Center-Surround Antagonism by Li-Ion-Mediated Highly Interactive Devices. <i>Nano Letters</i> , 2021 , 21, 7938-7945	11.5	3
21	A mesoporous SiO ₂ thin films-based ionic decision-maker for solving multi-armed bandit problems. <i>Japanese Journal of Applied Physics</i> , 2020 , 59, SIIG01	1.4	2
20	Atomic switches: atomic-movement-controlled nanodevices for new types of computing. <i>Science and Technology of Advanced Materials</i> , 2011 , 12, 013003	7.1	2
19	Oxygen vacancy drift controlled three-terminal ReRAM with a reduction in operating gate bias and gate leakage current. <i>Solid State Ionics</i> , 2018 , 328, 30-34	3.3	2
18	Impact of moisture absorption on the resistive switching characteristics of a polyethylene oxide-based atomic switch. <i>Journal of Materials Chemistry C</i> , 2021 , 9, 11198-11206	7.1	2

17	Biomimetics: Controlling the Synaptic Plasticity of a Cu ₂ S Gap-Type Atomic Switch (Adv. Funct. Mater. 17/2012). <i>Advanced Functional Materials</i> , 2012 , 22, 3605-3605	15.6	1
16	Influence of Atmosphere on Photo-Assisted Atomic Switch Operations. <i>Key Engineering Materials</i> , 2013 , 596, 116-120	0.4	1
15	Impacts of Temperature and Moisture on the Resistive Switching Characteristics of a Cu-Ta ₂ O ₅ -Based Atomic Switch. <i>Materials Research Society Symposia Proceedings</i> , 2012 , 1430, 25		1
14	Flexible Polymer Atomic Switches using Ink-Jet Printing Technique. <i>Materials Research Society Symposia Proceedings</i> , 2012 , 1430, 106		1
13	Artificial Synapses Realized by Atomic Switch Technology. <i>Advances in Atom and Single Molecule Machines</i> , 2020 , 175-199	0	1
12	Fabrication of a magnesium-ion-conducting magnesium phosphate electrolyte film using atomic layer deposition. <i>Japanese Journal of Applied Physics</i> , 2020 , 59, SIIG08	1.4	0
11	Changes in the temperature dependence of Ag/Ta ₂ O ₅ /Pt gapless-type atomic switches caused by desorption/adsorption of water molecules from/into the Ta ₂ O ₅ matrix. <i>Japanese Journal of Applied Physics</i> , 2021 , 60, SCCF05	1.4	0
10	Measurement of changes in resistance of a Ag ₂ +S nano-island on removal of dopant SAg atoms. <i>Japanese Journal of Applied Physics</i> , 2021 , 60, SE1001	1.4	0
9	Atomic scale switches based on solid state ionics. <i>Advances in Physics: X</i> , 2022 , 7,	5.1	0
8	Effects of water adsorption on conductive filaments of a Ta ₂ O ₅ atomic switch investigated by nondestructive electrical measurements. <i>Applied Physics Letters</i> , 2020 , 117, 233104	3.4	
7	Development of Three-Terminal Atomic Switches and Related Topics. <i>Advances in Atom and Single Molecule Machines</i> , 2020 , 127-137	0	
6	Ionic Nanoarchitectonics: Creation of Polymer-Based Atomic Switch and Decision-Making Device. <i>NIMS Monographs</i> , 2022 , 113-126	0.3	
5	Operating Mechanism and Resistive Switching Characteristics of Two- and Three-Terminal Atomic Switches Using a Thin Metal Oxide Layer. <i>Kluwer International Series in Electronic Materials: Science and Technology</i> , 2022 , 209-234		
4	Solid-Polymer-Electrolyte-Based Atomic Switches. <i>Advances in Atom and Single Molecule Machines</i> , 2020 , 139-159	0	
3	Progress in the Atomic Switch	66-67	
2	Nanosession: Electrochemical Metallization Memories	207-217	
1	Ionic Nanoarchitectonics for Artificial Intelligence Devices	2022, 191-218	