

Tohru Tsuruoka

List of Publications by Year in Descending Order

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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	Ionic Nanoarchitectonics: Creation of Polymer-Based Atomic Switch and Decision-Making Device. <i>NIMS Monographs</i> , 2022 , 113-126	0.3	0
87	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		
86	Atomic scale switches based on solid state ionics. <i>Advances in Physics: X</i> , 2022 , 7,	5.1	0
85	Ionic Nanoarchitectonics for Artificial Intelligence Devices 2022 , 191-218		
84	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
83	Measurement of changes in resistance of a Ag ₂ S nano-island on removal of dopant Ag atoms. <i>Japanese Journal of Applied Physics</i> , 2021 , 60, SE1001	1.4	0
82	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
81	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
80	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	
79	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
78	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
77	Artificial Synapses Realized by Atomic Switch Technology. <i>Advances in Atom and Single Molecule Machines</i> , 2020 , 175-199	0	1
76	Development of Three-Terminal Atomic Switches and Related Topics. <i>Advances in Atom and Single Molecule Machines</i> , 2020 , 127-137	0	
75	Solid-Polymer-Electrolyte-Based Atomic Switches. <i>Advances in Atom and Single Molecule Machines</i> , 2020 , 139-159	0	
74	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
73	Time-Dependent Operations in Molecular Gap Atomic Switches. <i>Physica Status Solidi (B): Basic Research</i> , 2019 , 256, 1900068	1.3	9
72	Resistivity control by the electrochemical removal of dopant atoms from a nanodot. <i>Faraday Discussions</i> , 2019 , 213, 29-40	3.6	6

71	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
70	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
69	Atomic Layer Deposition of a Magnesium Phosphate Solid Electrolyte. <i>Chemistry of Materials</i> , 2019 , 31, 5566-5575	9.6	19
68	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
67	Mesoporous fullerene C70 cubes with highly crystalline frameworks and unusually enhanced photoluminescence properties. <i>Materials Horizons</i> , 2018 , 5, 285-290	14.4	46
66	Nanoarchitectonics for Controlling the Number of Dopant Atoms in Solid Electrolyte Nanodots. <i>Advanced Materials</i> , 2018 , 30, 1703261	24	37
65	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
64	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
63	Development of a molecular gap-type atomic switch and its stochastic operation. <i>Journal of Applied Physics</i> , 2018 , 124, 152114	2.5	9
62	Ionic decision-maker created as novel, solid-state devices. <i>Science Advances</i> , 2018 , 4, eaau2057	14.3	19
61	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
60	Highly Reproducible and Regulated Conductance Quantization in a Polymer-Based Atomic Switch. <i>Advanced Functional Materials</i> , 2017 , 27, 1605104	15.6	48
59	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
58	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
57	Atomic Switches 2016 , 515-546		3
56	Laser Patterning of Optically Reconfigurable Transistor Channels in a Photochromic Diarylethene Layer. <i>Nano Letters</i> , 2016 , 16, 7474-7480	11.5	36
55	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
54	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

53	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
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	Surfactant-Triggered Nanoarchitectonics of Fullerene C Crystals at a Liquid-Liquid Interface. <i>Langmuir</i> , 2016 , 32, 12511-12519	4	43
50	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
49	Decision maker based on atomic switches. <i>AIMS Materials Science</i> , 2016 , 3, 245-259	1.9	15
48	Kinetic factors determining conducting filament formation in solid polymer electrolyte based planar devices. <i>Nanoscale</i> , 2016 , 8, 13976-84	7.7	37
47	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
46	Position detection and observation of a conducting filament hidden under a top electrode in a Ta ₂ O ₅ -based atomic switch. <i>Nanotechnology</i> , 2015 , 26, 145702	3.4	15
45	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
44	Redox Reactions at Cu,Ag/Ta ₂ O ₅ Interfaces and the Effects of Ta ₂ O ₅ Film Density on the Forming Process in Atomic Switch Structures. <i>Advanced Functional Materials</i> , 2015 , 25, 6374-6381	15.6	133
43	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
42	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
41	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
40	Synaptic plasticity and memristive behavior operated by atomic switches 2014 ,		3
39	Generic relevance of counter charges for cation-based nanoscale resistive switching memories. <i>ACS Nano</i> , 2013 , 7, 6396-402	16.7	183
38	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
37	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
36	Influence of Atmosphere on Photo-Assisted Atomic Switch Operations. <i>Key Engineering Materials</i> , 2013 , 596, 116-120	0.4	1

35	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
34	Synaptic plasticity and memory functions achieved in a WO ₃ -x-based nanoionics device by using the principle of atomic switch operation. <i>Nanotechnology</i> , 2013 , 24, 384003	3-4	92
33	Volatile and nonvolatile selective switching of a photo-assisted initialized atomic switch. <i>Nanotechnology</i> , 2013 , 24, 384006	3-4	20
32	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
31	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
30	Atomic switch: atom/ion movement controlled devices for beyond von-neumann computers. <i>Advanced Materials</i> , 2012 , 24, 252-67	24	295
29	On-demand nanodevice with electrical and neuromorphic multifunction realized by local ion migration. <i>ACS Nano</i> , 2012 , 6, 9515-21	16.7	153
28	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
27	Conductance quantization and synaptic behavior in a Ta ₂ O ₅ -based atomic switch. <i>Nanotechnology</i> , 2012 , 23, 435705	3-4	135
26	Atomically controlled electrochemical nucleation at superionic solid electrolyte surfaces. <i>Nature Materials</i> , 2012 , 11, 530-5	27	187
25	Controlling the Synaptic Plasticity of a Cu ₂ S Gap-Type Atomic Switch. <i>Advanced Functional Materials</i> , 2012 , 22, 3606-3613	15.6	132
24	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
23	Flexible resistive switching memory using inkjet printing of a solid polymer electrolyte. <i>AIP Advances</i> , 2012 , 2, 022144	1-5	26
22	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
21	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
20	Flexible Polymer Atomic Switches using Ink-Jet Printing Technique. <i>Materials Research Society Symposia Proceedings</i> , 2012 , 1430, 106		1
19	Short-term plasticity and long-term potentiation mimicked in single inorganic synapses. <i>Nature Materials</i> , 2011 , 10, 591-5	27	1159
18	Temperature effects on the switching kinetics of a Cu-Ta ₂ O ₅ -based atomic switch. <i>Nanotechnology</i> , 2011 , 22, 254013	3-4	66

17	Memristive operations demonstrated by gap-type atomic switches. <i>Applied Physics A: Materials Science and Processing</i> , 2011 , 102, 811-815	2.6	38
16	A Polymer-Electrolyte-Based Atomic Switch. <i>Advanced Functional Materials</i> , 2011 , 21, 93-99	15.6	117
15	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
14	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
13	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
12	Volatile/Nonvolatile Dual-Functional Atom Transistor. <i>Applied Physics Express</i> , 2011 , 4, 015204	2.4	39
11	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
10	Rate-Limiting Processes Determining the Switching Time in a Ag ₂ S Atomic Switch. <i>Journal of Physical Chemistry Letters</i> , 2010 , 1, 604-608	6.4	90
9	Forming and switching mechanisms of a cation-migration-based oxide resistive memory. <i>Nanotechnology</i> , 2010 , 21, 425205	3.4	242
8	Learning abilities achieved by a single solid-state atomic switch. <i>Advanced Materials</i> , 2010 , 22, 1831-4	24	244
7	AgI/Ag Heterojunction Nanowires: Facile Electrochemical Synthesis, Photoluminescence, and Enhanced Ionic Conductivity. <i>Advanced Functional Materials</i> , 2007 , 17, 1466-1472	15.6	43
6	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
5	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
4	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
3	A Variety of Functional Devices Realized by Ionic Nanoarchitectonics, Complementing Electronics Components. <i>Advanced Electronic Materials</i> , 2100645	6.4	3
2	Progress in the Atomic Switch	66-67	
1	Nanosession: Electrochemical Metallization Memories	207-217	