Ryoma HAYAKAWA

List of Publications by Year
in descending order

83 papers	1,642 citations	279798 23 h-index	361022 35 g-index
83 all docs	83 docs citations	83 times ranked	2079 citing authors

#	Article	IF	Citations
1	Electrically Reconfigurable Organic Logic Gates: A Promising Perspective on a Dualâ€Gate Antiambipolar Transistor. Advanced Materials, 2022, 34, e2109491.	21.0	17
2	High-performance multivalued logic circuits based on optically tunable antiambipolar transistors. Journal of Materials Chemistry C, 2022, 10, 5559-5566.	5.5	13
3	ReS₂/hâ€BN/Graphene Heterostructure Based Multifunctional Devices: Tunneling Diodes, FETs, Logic Gates, and Memory. Advanced Electronic Materials, 2021, 7, .	5.1	15
4	Single-charge transport through hybrid coreâ€“shell Au-ZnS quantum dots: a comprehensive analysis from a modified energy structure. Nanoscale, 2021, 13, 4978-4984.	5.6	3
5	Theoretical Insight into Quantum Transport Via Molecular Dots in a Vertical Tunnel Transistor. ACS Applied Electronic Materials, 2021, 3, 973-978.	4.3	3
6	Organic heterojunction transistors for mechanically flexible multivalued logic circuits. Applied Physics Express, 2021, 14, 081004.	2.4	22
7	Enhanced Selectivity in Volatile Organic Compound Gas Sensors Based on ReS₂-FETs under Light-Assisted and Gate-Bias Tunable Operation. ACS Applied Materials & Interfaces, 2021, 13, 43030-43038.	8.0	18
8	Gate-bias tunable humidity sensors based on rhenium disulfide field-effect transistors. Japanese Journal of Applied Physics, 2021, 60, SBBH01.	1.5	5
9	Organic-semiconductor nanoarchitectonics for multi-valued logic circuits with ideal transfer characteristics. Journal of Materials Chemistry C, 2021, 9, 15415-15421.	5.5	13
10	Antiambipolar Transistor: A Newcomer for Future Flexible Electronics. Advanced Functional Materials, 2020, 30, 1903724.	14.9	50
11	Electrolyte-gated-organic field effect transistors functionalized by lipid monolayers with tunable pH sensitivity for sensor applications. Applied Physics Express, 2020, 13, 011005.	2.4	10
12	Photochromism for optically functionalized organic field-effect transistors: a comprehensive review. Journal of Materials Chemistry C, 2020, 8, 10956-10974.	5.5	48
13	Lightâ€Assisted and Gateâ€Tunable Oxygen Gas Sensor Based on Rhenium Disulfide Fieldâ€Effect Transistors. Physica Status Solidi - Rapid Research Letters, 2020, 14, 2000330.	2.4	7
14	Fundamentals of Organic Antiâ€Ambipolar Ternary Inverters. Advanced Electronic Materials, 2020, 6, 1901200.	5.1	31
15	Enhanced Quantum Efficiency in Vertical Mixed-Thickness <i>n</i>-ReS₂/<i>p</i>-Si Heterojunction Photodiodes. ACS Photonics, 2019, 6, 2277-2286.	6.6	26
16	On-terrace graphoepitaxy for remarkable one-dimensional growth of 2,7-dioctyl[1]benzothieno[3,2-b]benzothiophene (C8-BTBT) nanowires. Organic Electronics, 2019, 74, 33-36.	2.6	4
17	Photocontrollable ambipolar transistors with <i>Ï€</i>-conjugated diarylethene photochromic channels. Japanese Journal of Applied Physics, 2019, 58, SDDH03.	1.5	7
18	Stable operation of water-gated organic field-effect transistor depending on channel flatness, electrode metals and surface treatment. Japanese Journal of Applied Physics, 2019, 58, SDDH02.	1.5	9

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19	Structural characterization and transistor properties of thickness-controllable MoS2 thin films. Journal of Materials Science, 2019, 54, 7758-7767.	3.7	15
20	Ambipolar carrier transport in an optically controllable diarylethene thin film transistor. Organic Electronics, 2019, 64, 205-208.	2.6	14
21	Device Geometry Engineering for Controlling Organic Antiambipolar Transistor Properties. Journal of Physical Chemistry C, 2018, 122, 6943-6946.	3.1	35
22	Interface Engineering for Controlling Device Properties of Organic Antiambipolar Transistors. ACS Applied Materials & Interfaces, 2018, 10, 2762-2767.	8.0	32
23	Multi-Valued Logic Circuits Based on Organic Anti-ambipolar Transistors. Nano Letters, 2018, 18, 4355-4359.	9.1	102
24	Carrier transport properties of MoS2 field-effect transistors produced by multi-step chemical vapor deposition method. Journal of Applied Physics, 2017, 121, .	2.5	22
25	Photoelectron spectroscopic study on monolayer pentacene thin-film/polar ZnO single-crystal hybrid interface. Applied Physics Express, 2017, 10, 025702.	2.4	5
26	Crystallographic polarity effect of ZnO on thin film growth of pentacene. Japanese Journal of Applied Physics, 2017, 56, 04CJ03.	1.5	4
27	Negative Differential Resistance Transistor with Organic pâ€n Heterojunction. Advanced Electronic Materials, 2017, 3, 1700106.	5.1	57
28	Vertical resonant tunneling transistors with molecular quantum dots for large-scale integration. Nanoscale, 2017, 9, 11297-11302.	5.6	6
29	P-type polymer-based Ag₂S atomic switch for â€œtug of warâ€•operation. Japanese Journal of Applied Physics, 2017, 56, 06GF03.	1.5	8
30	Mn₅Ge₃C_{0.6}â€‰/Ge(1â€‰1â€‰1) Schottky contacts tuned by an n-type ultra-shallow doping layer. Journal Physics D: Applied Physics, 2016, 49, 355101.	2.8	6
31	Perspective: Highly ordered MoS2 thin films grown by multi-step chemical vapor deposition process. APL Materials, 2016, 4, .	5.1	28
32	Polymer chain alignment and transistor properties of nanochannel-templated poly(3-hexylthiophene) nanowires. Journal of Applied Physics, 2016, 120, 055501.	2.5	6
33	Soluble 2,6-Bis(4-pentylphenylethynyl)anthracene as a High Hole Mobility Semiconductor for Organic Field-effect Transistors. Chemistry Letters, 2016, 45, 1403-1405.	1.3	7
34	Large Magnetoresistance in Single-Radical Molecular Junctions. Nano Letters, 2016, 16, 4960-4967.	9.1	75
35	Laser Patterning of Optically Reconfigurable Transistor Channels in a Photochromic Diarylethene Layer. Nano Letters, 2016, 16, 7474-7480.	9.1	38
36	Shot Noise of 1,4-Benzenedithiol Single-Molecule Junctions. Nano Letters, 2016, 16, 1803-1807.	9.1	44

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37	Nanochannel effect in polymer nanowire transistor with highly aligned polymer chains. Applied Physics Letters, 2015, 106, .	3.3	8
38	Interface engineering for improving optical switching in a diarylethene-channel transistor. Organic Electronics, 2015, 21, 149-154.	2.6	22
39	Exciton dynamics at the heteromolecular interface between N,Nâ€²-dioctyl-3,4,9,10-perylenedicarboximide and quaterrylene, studied using time-resolved photoluminescence. AIP Advances, 2014, 4, 067112.	1.3	1
40	Recent progress in photoactive organic field-effect transistors. Science and Technology of Advanced Materials, 2014, 15, 024202.	6.1	80
41	Multilevel Operation of Resonant Tunneling with Binary Molecules in a Metalâ€“Insulatorâ€“Semiconductor Configuration. Journal of Physical Chemistry C, 2014, 118, 6467-6472.	3.1	8
42	Layer-by-layer growth of precisely controlled hetero-molecular multi-layers and superlattice structures. Thin Solid Films, 2014, 554, 74-77.	1.8	6
43	Optically Controllable Dual-Gate Organic Transistor Produced via Phase Separation between Polymer Semiconductor and Photochromic Spiropyran Molecules. ACS Applied Materials & Interfaces, 2014, 6, 10415-10420.	8.0	23
44	Improved thermal stability in photochromism-based optically controllable organic thin film transistor. Organic Electronics, 2014, 15, 1891-1895.	2.6	4
45	Integration of molecular functions into Si device for nanoscale molecular devices. Thin Solid Films, 2014, 554, 2-7.	1.8	7
46	Optically and Electrically Driven Organic Thin Film Transistors with Diarylethene Photochromic Channel Layers. ACS Applied Materials & Interfaces, 2013, 5, 3625-3630.	8.0	78
47	Photoisomerization-Induced Manipulation of Single-Electron Tunneling for Novel Si-Based Optical Memory. ACS Applied Materials & Interfaces, 2013, 5, 11371-11376.	8.0	13
48	Enhanced Electrical Conductivity in Poly(3-hexylthiophene)/Fluorinated Tetracyanoquinodimethane Nanowires Grown with a Porous Alumina Template. Langmuir, 2013, 29, 7266-7270.	3.5	17
49	Unique Device Operations by Combining Optical-Memory Effect and Electrical-Gate Modulation in a Photochromism-Based Dual-Gate Transistor. ACS Applied Materials & Interfaces, 2013, 5, 9726-9731.	8.0	35
50	Optical switching of carrier transport in polymeric transistors with photochromic spiropyran molecules. Journal of Materials Chemistry C, 2013, 1, 3012.	5.5	56
51	Potential of Directed- and Self-Assembled Molecular Nanowires for Optoelectronic Functional Devices. Japanese Journal of Applied Physics, 2012, 51, 06FA01.	1.5	1
52	Hard x-ray photoelectron spectroscopy study on band alignment at poly(3,4-ethylenedioxythiophene):poly(styrenesulfonate)/ZnO interface. Applied Physics Letters, 2012, 101, .	3.3	21
53	Development of AlN/diamond heterojunction field effect transistors. Diamond and Related Materials, 2012, 24, 206-209.	3.9	31
54	Energy-level alignments and photo-induced carrier processes at the heteromolecular interface of quaterrylene and N,Nâ€²-dioctyl-3,4,9,10-perylenedicarboximide. Physical Chemistry Chemical Physics, 2011, 13, 6280.	2.8	25

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55	Structural analysis and electrical properties of pure Ge3N4 dielectric layers formed by an atmospheric-pressure nitrogen plasma. Journal of Applied Physics, 2011, 110, 064103.	2.5	9
56	Molecular Alignment and Energy-Level Diagram at Heteromolecular Interface of Quaterrylene and Terrylene-3,4,11,12-Tetracarboximide. Journal of Nanoscience and Nanotechnology, 2011, 11, 4888-4892.	0.9	1
57	Study of the exciton relaxation and recombination processes of a heteromolecular interface fabricated by a molecular superlattice growth technique. Chemical Physics Letters, 2011, 512, 227-230.	2.6	2
58	Demonstration of diamond field effect transistors by AlN/diamond heterostructure. Physica Status Solidi - Rapid Research Letters, 2011, 5, 125-127.	2.4	39
59	Singleâ€Electron Tunneling through Molecular Quantum Dots in a Metalâ€Insulatorâ€Semiconductor Structure. Advanced Functional Materials, 2011, 21, 2933-2937.	14.9	21
60	Ambipolar carrier transport in hetero-layered organic transistors consisting of quaterrylene and N,Nâ€²-dioctyl-3,4,9,10-perylenedicarboximide. Organic Electronics, 2011, 12, 1336-1340.	2.6	11
61	Schottky barrier height behavior of Ptâ€“Ru alloy contacts on single-crystal n-ZnO. Journal of Applied Physics, 2010, 107, .	2.5	6
62	Continuous hydrothermal synthesis of nickel oxide nanoplates and their use as nanoinks for p-type channel material in a bottom-gate field-effect transistor. Nanotechnology, 2010, 21, 134009.	2.6	36
63	Strain-effect for controlled growth mode and well-ordered structure of quaterrylene thin films. Journal of Chemical Physics, 2010, 133, 034706.	3.0	14
64	Interface structure and the chemical states of Pt film on polar-ZnO single crystal. Applied Physics Letters, 2009, 94, 221904.	3.3	18
65	Variable temperature characterization of N,Nâ€²-Bis(n-pentyl)terrylene-3,4:11,12-tetracarboxylic diimide thin film transistor. Organic Electronics, 2009, 10, 1187-1190.	2.6	5
66	Structural analysis and transistor properties of hetero-molecular bilayers. Thin Solid Films, 2009, 518, 441-443.	1.8	9
67	Impact of surface modification by addition of self-assembled monolayer for carrier transport of quaterrylene thin films. Thin Solid Films, 2009, 518, 437-440.	1.8	5
68	Growth and structural characterization of molecular superlattice of quaterrylene and N,Nâ€²-dioctyl-3,4,9,10-perylenedicarboximide. Organic Electronics, 2009, 10, 1032-1036.	2.6	11
69	Stress Release Drives Growth Transition of Quaterrylene Thin Films on SiO₂ Surfaces. Journal of Physical Chemistry C, 2009, 113, 2197-2199.	3.1	11
70	Self-Assembled Molecular Nanowires of 6,13-Bis(methylthio)pentacene: Growth, Electrical Properties, and Applications. Nano Letters, 2008, 8, 3273-3277.	9.1	36
71	Interface engineering for molecular alignment and device performance of quaterrylene thin films. Applied Physics Letters, 2008, 93, .	3.3	17
72	Growth and electrical properties of N,Nâ€²-bis(n-pentyl)terrylene- 3,4:11,12-tetracarboximide thin films. Applied Physics Letters, 2008, 92, 163301.	3.3	17

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73	Analysis of carrier transport in quaterrylene thin film transistors formed by ultraslow vacuum deposition. Journal of Applied Physics, 2008, 104, 024506.	2.5	10
74	The comparison of the growth models of silicon nitride ultrathin films fabricated using atmospheric pressure plasma and radio frequency plasma. Journal of Applied Physics, 2007, 101, 023513.	2.5	6
75	Evolution of Quaterrylene Thin Films on a Silicon Dioxide Surface Using an Ultraslow Deposition Technique. Journal of Physical Chemistry C, 2007, 111, 18703-18707.	3.1	10
76	Early Stage of Growth of a Perylene Diimide Derivative Thin Film Growth on Various Si(001) Substrates. Journal of Physical Chemistry C, 2007, 111, 12747-12751.	3.1	29
77	Growth of quaterrylene thin films on a silicon dioxide surface using vacuum deposition. Organic Electronics, 2007, 8, 631-634.	2.6	16
78	Reaction of Si with excited nitrogen species in pure nitrogen plasma near atmospheric pressure. Thin Solid Films, 2006, 506-507, 423-426.	1.8	16
79	Effect of Additional Oxygen on Formation of Silicon Oxynitride Using Nitrogen Plasma Generated near Atmospheric Pressure. Japanese Journal of Applied Physics, 2006, 45, 9025-9028.	1.5	6
80	Detailed structural analysis and dielectric properties of silicon nitride film fabricated using pure nitrogen plasma generated near atmospheric pressure. Journal of Applied Physics, 2006, 100, 073710.	2.5	14
81	Formation of Silicon Oxynitride Films with Low Leakage Current Using N2/O2Plasma near Atmospheric Pressure. Japanese Journal of Applied Physics, 2004, 43, 7853-7856.	1.5	7
82	Fabrication of Silicon Nitride Film using Pure Nitrogen Plasma Generated near Atmospheric Pressure for III-V Semiconductor Fabrication. Materials Research Society Symposia Proceedings, 2004, 831, 144.	0.1	0
83	Analysis of nitrogen plasma generated by a pulsed plasma system near atmospheric pressure. Journal of Applied Physics, 2004, 96, 6094-6096.	2.5	19