

Toshiya Sakata

List of Publications by Year in descending order

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Version: 2024-02-01

111
papers

1,881
citations

279798

23
h-index

289244

40
g-index

115
all docs

115
docs citations

115
times ranked

1380
citing authors

#	ARTICLE	IF	CITATIONS
1	Hydrogel-Coated Gate Field-Effect Transistor for Real-Time and Label-Free Monitoring of β^2 -Amyloid Aggregation and Its Inhibition. <i>Analytical Chemistry</i> , 2022, , .	6.5	2
2	Free-standing conductive hydrogel electrode for potentiometric glucose sensing. <i>RSC Advances</i> , 2022, 12, 5369-5373.	3.6	7
3	Self-oscillating chemoelectrical interface of solution-gated ion-sensitive field-effect transistor based on Belousovâ€Zhabotinsky reaction. <i>Scientific Reports</i> , 2022, 12, 2949.	3.3	2
4	Direct Electrochemical Signaling in Organic Electrochemical Transistors Comprising High-Conductivity Double-Network Hydrogels. <i>ACS Applied Materials & Interfaces</i> , 2022, 14, 24729-24740.	8.0	6
5	Technical Perspectives on Applications of Biologically Coupled Gate Field-Effect Transistors. <i>Sensors</i> , 2022, 22, 4991.	3.8	2
6	Surface Characteristics and Formation of Polyserotonin Thin Films for Bioelectrical and Biocompatible Interfaces. <i>Langmuir</i> , 2022, 38, 8633-8642.	3.5	3
7	Association between tear and blood glucose concentrations: Random intercept model adjusted with confounders in tear samples negative for occult blood. <i>Journal of Diabetes Investigation</i> , 2021, 12, 266-276.	2.4	34
8	Aptamer-based nanofilter interface for small-biomarker detection with potentiometric biosensor. <i>Electrochimica Acta</i> , 2021, 368, 137631.	5.2	9
9	Ion sensitivity from current hysteresis in InAs nanowire field-effect transistors functionalized with ionophore-doped fluorosilicone membranes. <i>Sensors and Actuators B: Chemical</i> , 2021, 336, 129704.	7.8	1
10	Cell Adhesion Characteristics on Tantalum Pentoxide Gate Insulator for Cultured-Cell-Gate Field-Effect Transistor. <i>Langmuir</i> , 2021, 37, 7548-7555.	3.5	6
11	Slow-phase-transition Behavior of Thermoresponsive Polymer Brushes Constrained at Substrate Observed by <i>In Situ</i> Electrical Monitoring Using Poly(<i>N</i> -isopropylacrylamide)-grafted Gate Field-effect Transistor. <i>Chemistry Letters</i> , 2021, 50, 1852-1855.	1.3	1
12	Solution-Gated Ultrathin Channel Indium Tin Oxide-Based Field-Effect Transistor Fabricated by a One-Step Procedure that Enables High-Performance Ion Sensing and Biosensing. <i>ACS Applied Materials & Interfaces</i> , 2021, 13, 38569-38578.	8.0	16
13	<i>In Situ</i> Electrical Monitoring of Methylated DNA Based on Its Conformational Change to G-Quadruplex Using a Solution-Gated Field-Effect Transistor. <i>Analytical Chemistry</i> , 2021, 93, 16709-16717.	6.5	4
14	Densification of Diazonium-Based Organic Thin Film as Bioelectrical Interface. <i>Langmuir</i> , 2021, 37, 14369-14379.	3.5	4
15	Design and Fabrication of Silicon Nanowire-Based Biosensors with Integration of Critical Factors: Toward Ultrasensitive Specific Detection of Biomolecules. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 51808-51819.	8.0	19
16	Molecularly imprinted polymer-based bioelectrical interfaces with intrinsic molecular charges. <i>RSC Advances</i> , 2020, 10, 16999-17013.	3.6	23
17	Functionalization of Polymeric Nanofilter Biointerface for Small Biomarker Sensing. <i>ECS Transactions</i> , 2020, 97, 9-14.	0.5	1
18	Biocompatible and flexible paper-based metal electrode for potentiometric wearable wireless biosensing. <i>Science and Technology of Advanced Materials</i> , 2020, 21, 379-387.	6.1	21

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19	Enhancement of Signal-to-Noise Ratio for Serotonin Detection with Well-Designed Nanofilter-Coated Potentiometric Electrochemical Biosensor. ACS Applied Materials & Interfaces, 2020, 12, 14761-14769.	8.0	33
20	Functionalization of Polymeric Nanofilter Biointerface for Small Biomarker Sensing. ECS Meeting Abstracts, 2020, MA2020-01, 1399-1399.	0.0	0
21	Molecular-Charge-Contact-Based Ion-Sensitive Field-Effect Transistor Sensor in Microfluidic System for Protein Sensing. Sensors, 2019, 19, 3393.	3.8	13
22	Biologically Coupled Gate Field-Effect Transistors Meet <i>in Vitro</i> Diagnostics. ACS Omega, 2019, 4, 11852-11862.	3.5	56
23	Biocompatible and Na ⁺ -sensitive thin-film transistor for biological fluid sensing. Science and Technology of Advanced Materials, 2019, 20, 917-926.	6.1	10
24	Interfacial pH Behavior at a Cell/Gate Insulator Nanogap Induced by Allergic Responses. ACS Omega, 2019, 4, 14255-14260.	3.5	2
25	Effect of Electrochemically Grafted Aryl-Based Monolayer on Nonspecific Electrical Signal of Field-Effect-Transistor-Based Biosensor. ECS Transactions, 2019, 89, 17-24.	0.5	1
26	Sperm-Cultured Gate Ion-Sensitive Field-Effect Transistor for Non-Optical and Live Monitoring of Sperm Capacitation. Sensors, 2019, 19, 1784.	3.8	11
27	Control of Potential Response to Small Biomolecules with Electrochemically Grafted Aryl-Based Monolayer in Field-Effect Transistor-Based Sensors. Langmuir, 2019, 35, 3701-3709.	3.5	18
28	Estimation of Extracellular Matrix Production Using a Cultured-Chondrocyte-Based Gate Ion-Sensitive Field-Effect Transistor. Analytical Chemistry, 2019, 91, 16017-16022.	6.5	11
29	Polymeric Nanofilter Biointerface for Potentiometric Small-Biomolecule Recognition. ACS Applied Materials & Interfaces, 2019, 11, 5561-5569.	8.0	24
30	Biological sensing technology based on intrinsic molecular charges. , 2019, , .		0
31	Potentiometric Langmuir Isotherm Analysis of Histamine-Selective Molecularly Imprinted Polymer-Based Field-Effect Transistor. ECS Journal of Solid State Science and Technology, 2018, 7, Q3079-Q3082.	1.8	8
32	Reviewâ€”Egg Cells on a Semiconductor: Potentials in Drug Screening and Clinical Diagnostics. ECS Journal of Solid State Science and Technology, 2018, 7, Q3094-Q3103.	1.8	4
33	Biocompatible Poly(catecholamine)-Film Electrode for Potentiometric Cell Sensing. ACS Sensors, 2018, 3, 476-483.	7.8	22
34	Calculation of surface potentials at the silicaâ€”water interface using molecular dynamics: Challenges and opportunities. Japanese Journal of Applied Physics, 2018, 57, 04FM02.	1.5	15
35	<i>in Vitro</i> Diagnostic Device with a Bio-Coupled Gate Field Effect Transistor. International Journal of Automation Technology, 2018, 12, 45-51.	1.0	1
36	Bioanalytical Method Based on Extended-Gate Field-Effect Transistor Modified by Self-Assembled Monolayer. International Journal of Automation Technology, 2018, 12, 52-63.	1.0	0

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37	Live Monitoring of Microenvironmental pH Based on Extracellular Acidosis around Cancer Cells with Cell-Coupled Gate Ion-Sensitive Field-Effect Transistor. <i>Analytical Chemistry</i> , 2018, 90, 12731-12736.	6.5	41
38	Charge-Coupling Extended-Gate Amorphous-InGaZnO-Based Thin-Film Transistor for Use as Ultrasensitive Biosensor. <i>Journal of the Electrochemical Society</i> , 2018, 165, B571-B575.	2.9	4
39	Molecularly Imprinted Artificial Biointerface for an Enzyme-Free Glucose Transistor. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 34983-34990.	8.0	39
40	Potentiometric Adsorption Isotherm Analysis of a Molecularly Imprinted Polymer Interface for Small-Biomolecule Recognition. <i>ACS Omega</i> , 2018, 3, 5382-5389.	3.5	29
41	Elucidation of interfacial pH behaviour at the cell/substrate nanogap for <i>in situ</i> monitoring of cellular respiration. <i>Nanoscale</i> , 2018, 10, 10130-10136.	5.6	23
42	In situ measurement of autophagy under nutrient starvation based on interfacial pH sensing. <i>Scientific Reports</i> , 2018, 8, 8282.	3.3	12
43	Understanding the Molecular Structure of the Sialic Acid-Phenylboronic Acid Complex by using a Combined NMR Spectroscopy and DFT Study: Toward Sialic Acid Detection at Cell Membranes. <i>ChemistryOpen</i> , 2018, 7, 513-519.	1.9	12
44	Well-designed dopamine-imprinted polymer interface for selective and quantitative dopamine detection among catecholamines using a potentiometric biosensor. <i>Biosensors and Bioelectronics</i> , 2018, 117, 810-817.	10.1	45
45	Preface—JSS Focus Issue on Semiconductor-Based Sensors for Application to Vapors, Chemicals, Biological Species, and Medical Diagnosis. <i>ECS Journal of Solid State Science and Technology</i> , 2018, 7, Y5-Y5.	1.8	0
46	Electropolymerized Poly(toluidine blue O) Film Electrode for Potentiometric Biosensing. <i>Sensors and Materials</i> , 2018, 30, 2333.	0.5	4
47	Fabrication of Holder-type Piezoresistive Cantilever for Embryo Mass Measurement. <i>Sensors and Materials</i> , 2018, 30, 2369.	0.5	0
48	<i>In situ</i> electrical monitoring of cancer cells invading vascular endothelial cells with semiconductor-based biosensor. <i>Genes To Cells</i> , 2017, 22, 203-209.	1.2	15
49	Glucose-responsive hydrogel electrode for biocompatible glucose transistor. <i>Science and Technology of Advanced Materials</i> , 2017, 18, 26-33.	6.1	48
50	Long-term and real-time monitoring of chondrocyte behavior synthesizing extracellular matrix with biologically coupled field effect transistor. <i>Japanese Journal of Applied Physics</i> , 2017, 56, 04CM03.	1.5	4
51	Fundamental Characteristics of a Glucose Transistor with a Chemically Functional Interface. <i>ChemElectroChem</i> , 2017, 4, 2225-2231.	3.4	10
52	(Invited) Semiconductor-Based Biosensing Technology for Clinical Diagnosis. <i>ECS Transactions</i> , 2017, 77, 3-9.	0.5	0
53	Development of molecularly imprinted polymer-based field effect transistor for sugar chain sensing. <i>Japanese Journal of Applied Physics</i> , 2017, 56, 04CM02.	1.5	8
54	Ion Sensitive Transparent-Gate Transistor for Visible Cell Sensing. <i>Analytical Chemistry</i> , 2017, 89, 3901-3908.	6.5	23

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55	Effect of Ionic Atmosphere around DNA/Electrolyte Interface on Potentiometric Signal. Journal of the Electrochemical Society, 2017, 164, B548-B552.	2.9	4
56	Dynamic electrical behaviour of a thermoresponsive polymer in well-defined poly(N-isopropylacrylamide)-grafted semiconductor devices. RSC Advances, 2017, 7, 34517-34521.	3.6	7
57	Nonoptical Detection of Allergic Response with a Cell-Coupled Gate Field-Effect Transistor. Analytical Chemistry, 2017, 89, 12918-12923.	6.5	23
58	Development of paper-gate transistor toward direct detection from microbiological fluids. Japanese Journal of Applied Physics, 2017, 56, 04CM07.	1.5	1
59	Semiconductor-based Biosensing Technology for <i>in vitro</i> Diagnostic Device. IEEJ Transactions on Sensors and Micromachines, 2017, 137, 296-300.	0.1	2
60	Real-time Monitoring of Cell Activities by Diamond Solution-gated Field Effect Transistors. Procedia Engineering, 2016, 168, 469-472.	1.2	1
61	Molecularly imprinted polymer-based FET biosensor for oligosaccharides sensing to target cancer cells. , 2016, , .		1
62	Dysregulation of a potassium channel, THIK-1, targeted by caspase-8 accelerates cell shrinkage. Biochimica Et Biophysica Acta - Molecular Cell Research, 2016, 1863, 2766-2783.	4.1	7
63	Monitoring of hydroxyapatite crystal formation using field-effect transistor. Japanese Journal of Applied Physics, 2016, 55, 04EM09.	1.5	2
64	Characterization of ion-sensitive extended-gate field effect transistor coated with functional self-assembled monolayer. Japanese Journal of Applied Physics, 2015, 54, 04DL06.	1.5	8
65	In vitro bio-circuit sensing based on cell-semiconductor interaction. , 2015, , .		0
66	Self-Oriented Immobilization of DNA Polymerase Tagged by Titanium-Binding Peptide Motif. Langmuir, 2015, 31, 732-740.	3.5	18
67	Effect of double-stranded DNA on electrical double layer structure at oxide/electrolyte interface in classical molecular dynamics simulation. Chemical Physics Letters, 2015, 619, 152-157.	2.6	14
68	Sensing of Biomolecules and Cells by Semiconductor Device. , 2015, , 323-362.		0
69	Cell adhesion monitoring of human induced pluripotent stem cell based on intrinsic molecular charges. Japanese Journal of Applied Physics, 2014, 53, 05FS02.	1.5	0
70	Real-time monitoring of voltage shift based on enzymatically released pyrophosphate using phenylboronic acid-immobilized gate field-effect transistor. Japanese Journal of Applied Physics, 2014, 53, 04EL04.	1.5	2
71	Molecular charge contact biosensing based on the interaction of biologically modified magnetic beads with an ion-sensitive field effect transistor. European Biophysics Journal, 2014, 43, 217-225.	2.2	6
72	Distinctive Potential Behavior at Oxidized Surface of Semiconductor Device in Concentrated Aqueous Salt Solution. ChemElectroChem, 2014, 1, 1427-1427.	3.4	1

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73	Fundamental Properties of Phenylboronic Acid-Coated Gate Field-Effect Transistor for Saccharide Sensing. ChemElectroChem, 2014, 1, 1647-1655.	3.4	23
74	Distinctive Potential Behavior at the Oxidized Surface of a Semiconductor Device in a Concentrated Aqueous Salt Solution. ChemElectroChem, 2014, 1, 1516-1524.	3.4	15
75	Elucidation of Semiconductor/Bio-Interface Structure with Massive Classical Molecular Dynamics Simulation. Hyomen Gijutsu/Journal of the Surface Finishing Society of Japan, 2014, 65, 251-256.	0.2	2
76	Simultaneous Biosensing with Quartz Crystal Microbalance with a Dissipation Coupled-Gate Semiconductor Device. Analytical Chemistry, 2013, 85, 5796-5800.	6.5	17
77	Single Embryo-Coupled Gate Field Effect Transistor for Elective Single Embryo Transfer. Analytical Chemistry, 2013, 85, 6633-6638.	6.5	43
78	Charge Behaviors around Oxide Device/Pseudo-Physiological Solution Interface with Molecular Dynamic Simulations. Japanese Journal of Applied Physics, 2013, 52, 127001.	1.5	13
79	Label-Free and Noninvasive Monitoring of Cell Differentiation on Spheroid Microarray. IEICE Transactions on Electronics, 2013, E96.C, 353-357.	0.6	0
80	Chondrocyte spheroids on microfabricated PEG hydrogel surface and their noninvasive functional monitoring. Science and Technology of Advanced Materials, 2012, 13, 064217.	6.1	16
81	Real-Time Monitoring of Potassium Ion Release Due to Apoptosis with Cell-Based Transparent-Gate Transistor. Applied Physics Express, 2012, 5, 017001.	2.4	8
82	Real-time and noninvasive monitoring of respiration activity of fertilized ova using semiconductor-based biosensing devices. European Biophysics Journal, 2011, 40, 699-704.	2.2	15
83	Continuous Monitoring of Electrical Activity of Pancreatic β -Cells Using Semiconductor-Based Biosensing Devices. Japanese Journal of Applied Physics, 2011, 50, 020216.	1.5	6
84	Review Paper on "In vitro Biosensing based on Semiconductor Devices". IEEJ Transactions on Sensors and Micromachines, 2011, 131, 409-413.	0.1	0
85	Development of cell/transistor interface for real-time and noninvasive monitoring of potassium ion release based on apoptosis using biologically-coupled field effect transistor. Transactions of the Materials Research Society of Japan, 2010, 35, 255-258.	0.2	5
86	Chemical-to-Electrical Signal Transduction Synchronized with Smart Gel Volume Phase Transition. Advanced Materials, 2009, 21, 4372-4378.	21.0	51
87	Glucose-sensitive field effect transistor using totally synthetic compounds. Journal of Solid State Electrochemistry, 2009, 13, 165-170.	2.5	20
88	Charged nanosphere-coupled biotransistor for highly sensitive genetic analysis. Current Applied Physics, 2009, 9, e210-e213.	2.4	6
89	Open Sandwich-Based Immuno-Transistor for Label-Free and Noncompetitive Detection of Low Molecular Weight Antigen. Analytical Chemistry, 2009, 81, 7532-7537.	6.5	62
90	Capacitance-Voltage Measurement of Transporting Function at Cell Membrane. IEEJ Transactions on Sensors and Micromachines, 2009, 129, 242-244.	0.1	2

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91	Electrical detection of ovum membrane charges using biotransistor. <i>Microelectronic Engineering</i> , 2008, 85, 1337-1340.	2.4	15
92	Noninvasive Monitoring of Transporter-Substrate Interaction at Cell Membrane. <i>Analytical Chemistry</i> , 2008, 80, 1493-1496.	6.5	55
93	Detection of Molecular Charges at Cell Membrane. <i>Japanese Journal of Applied Physics</i> , 2008, 47, 368-370.	1.5	18
94	Drug transport measurement for transporter variants using oocyte-based field effect transistor. , 2007, , .		0
95	Control of Texture in Intermetallic Compounds by Thermomechanical Processing. <i>Solid State Phenomena</i> , 2007, 127, 9-14.	0.3	0
96	Stable Immobilization of an Oligonucleotide Probe on a Gold Substrate Using Tripodal Thiol Derivatives. <i>Langmuir</i> , 2007, 23, 2269-2272.	3.5	64
97	Direct transduction of allele-specific primer extension into electrical signal using genetic field effect transistor. <i>Biosensors and Bioelectronics</i> , 2007, 22, 1311-1316.	10.1	62
98	Cell adhesion characteristics of chemically modified silicon nitride surfaces. <i>IEEJ Transactions on Electrical and Electronic Engineering</i> , 2007, 2, 295-300.	1.4	5
99	Cell adhesion characteristics of chemically modified silicon nitride surfaces. <i>IEEJ Transactions on Electrical and Electronic Engineering</i> , 2007, 2, xiii-xiv.	1.4	0
100	Detection sensitivity of genetic field effect transistor combined with charged nanoparticle-DNA conjugate. , 2006, , .		0
101	Genetic field effect devices for DNA analysis. , 2006, , .		0
102	DNA Sequencing Based on Intrinsic Molecular Charges. <i>Angewandte Chemie - International Edition</i> , 2006, 45, 2225-2228.	13.8	110
103	Electrical Detection of Bio-molecular Recognition Using Insulated Gate Field Effect Transistors. <i>Hyomen Kagaku</i> , 2006, 27, 13-20.	0.0	0
104	Detection of DNA recognition events using multi-well field effect devices. <i>Biosensors and Bioelectronics</i> , 2005, 21, 827-832.	10.1	68
105	Potentiometric Detection of Single Nucleotide Polymorphism by Using a Genetic Field-effect transistor. <i>ChemBioChem</i> , 2005, 6, 703-710.	2.6	91
106	DNA Analysis Chip Based on Field-Effect Transistors. <i>Japanese Journal of Applied Physics</i> , 2005, 44, 2854-2859.	1.5	123
107	Potential Behavior of Biochemically Modified Gold Electrode for Extended-Gate Field-Effect Transistor. <i>Japanese Journal of Applied Physics</i> , 2005, 44, 2860-2863.	1.5	56
108	Immobilization of oligonucleotide probes on Si ₃ N ₄ surface and its application to genetic field effect transistor. <i>Materials Science and Engineering C</i> , 2004, 24, 827-832.	7.3	93

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109	Potentiometric Detection of DNA Molecules Hybridization Using Gene Field Effect Transistor and Intercalator. Materials Research Society Symposia Proceedings, 2003, 782, 1.	0.1	3
110	Concurrent design for NiAl-based (γ/γ_2) two-phase alloys by controlling microstructure and texture. Science and Technology of Advanced Materials, 2002, 3, 157-164.	6.1	2
111	Development of Microstructure and Texture in Rapidly Solidified and Annealed Ni-Al Alloys. Materials Transactions, 2001, 42, 2382-2385.	1.2	1