Katsuo Kurabayashi

List of Publications by Year in descending order

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KATSUO KUDABAVASHI

#	Article	IF	CITATIONS
1	Landscape of Intercellular Crosstalk in Healthy and NASH Liver Revealed by Single-Cell Secretome Gene Analysis. Molecular Cell, 2019, 75, 644-660.e5.	9.7	488
2	Thermal conduction in doped single-crystal silicon films. Journal of Applied Physics, 2002, 91, 5079-5088.	2.5	406
3	Multiplex Serum Cytokine Immunoassay Using Nanoplasmonic Biosensor Microarrays. ACS Nano, 2015, 9, 4173-4181.	14.6	267
4	PDMS-based opto-fluidic micro flow cytometer with two-color, multi-angle fluorescence detection capability using PIN photodiodes. Sensors and Actuators B: Chemical, 2004, 98, 356-367.	7.8	176
5	Temperature-Dependent Thermal Conductivity of Undoped Polycrystalline Silicon Layers. International Journal of Thermophysics, 2001, 22, 605-616.	2.1	124
6	Measurement of the thermal conductivity anisotropy in polyimide films. Journal of Microelectromechanical Systems, 1999, 8, 180-191.	2.5	115
7	Effect of nanoscale heating on electrical transport in RF MEMS switch contacts. Journal of Microelectromechanical Systems, 2005, 14, 935-946.	2.5	115
8	Recent advancements in optofluidics-based single-cell analysis: optical on-chip cellular manipulation, treatment, and property detection. Lab on A Chip, 2014, 14, 1230-1245.	6.0	110
9	Self-Contained, Biomolecular Motor-Driven Protein Sorting and Concentrating in an Ultrasensitive Microfluidic Chip. Nano Letters, 2008, 8, 1041-1046.	9.1	104
10	Title is missing!. Biomedical Microdevices, 2002, 4, 141-149.	2.8	102
11	Efficient molecular evolution to generate enantioselective enzymes using a dual-channel microfluidic droplet screening platform. Nature Communications, 2018, 9, 1030.	12.8	102
12	Thermal characterization of anisotropic thin dielectric films using harmonic Joule heating. Thin Solid Films, 1999, 339, 160-164.	1.8	93
13	Integrated Nanoplasmonic Sensing for Cellular Functional Immunoanalysis Using Human Blood. ACS Nano, 2014, 8, 2667-2676.	14.6	89
14	Reversible Switching of High-Speed Airâ^'Liquid Two-Phase Flows Using Electrowetting-Assisted Flow-Pattern Change. Journal of the American Chemical Society, 2003, 125, 14678-14679.	13.7	88
15	Shaped comb fingers for tailored electromechanical restoring force. Journal of Microelectromechanical Systems, 2003, 12, 373-383.	2.5	84
16	Title is missing!. International Journal of Thermophysics, 2001, 22, 277-288.	2.1	70
17	Multiple MoS2 Transistors for Sensing Molecule Interaction Kinetics. Scientific Reports, 2015, 5, 10546.	3.3	64
18	An integrated microfluidic platform for in situ cellular cytokine secretion immunophenotyping. Lab on A Chip, 2012, 12, 4093.	6.0	60

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19	Deterministic droplet-based co-encapsulation and pairing of microparticles via active sorting and downstream merging. Lab on A Chip, 2017, 17, 3664-3671.	6.0	60
20	Flow-through microfluidic photoionization detectors for rapid and highly sensitive vapor detection. Lab on A Chip, 2015, 15, 3021-3029.	6.0	58
21	Label-free cytokine micro- and nano-biosensing towards personalized medicine of systemic inflammatory disorders. Advanced Drug Delivery Reviews, 2015, 95, 90-103.	13.7	58
22	AC Electroosmosis-Enhanced Nanoplasmofluidic Detection of Ultralow-Concentration Cytokine. Nano Letters, 2017, 17, 2374-2380.	9.1	55
23	Temperature-Programmed Natural Convection for Micromixing and Biochemical Reaction in a Single Microfluidic Chamber. Analytical Chemistry, 2009, 81, 4510-4516.	6.5	54
24	Efficient Designs for Powering Microscale Devices with Nanoscale Biomolecular Motors. Small, 2006, 2, 281-287.	10.0	52
25	Rapid, automated, parallel quantitative immunoassays using highly integrated microfluidics and AlphaLISA. Scientific Reports, 2015, 5, 11339.	3.3	48
26	Nanoimprint-Assisted Shear Exfoliation (NASE) for Producing Multilayer MoS ₂ Structures as Field-Effect Transistor Channel Arrays. ACS Nano, 2015, 9, 8773-8785.	14.6	48
27	Biotunable Nanoplasmonic Filter on Few-Layer MoS ₂ for Rapid and Highly Sensitive Cytokine Optoelectronic Immunosensing. ACS Nano, 2017, 11, 5697-5705.	14.6	48
28	Microfabricated thermal modulator for comprehensive two-dimensional micro gas chromatography: design, thermal modeling, and preliminary testing. Lab on A Chip, 2010, 10, 1647.	6.0	46
29	Surfaceâ€Micromachined Microfiltration Membranes for Efficient Isolation and Functional Immunophenotyping of Subpopulations of Immune Cells. Advanced Healthcare Materials, 2013, 2, 965-975.	7.6	43
30	Integrated monolithic 3D MEMS scanner for switchable real time vertical/horizontal cross-sectional imaging. Optics Express, 2016, 24, 2145.	3.4	43
31	Room temperature picowatt-resolution calorimetry. Applied Physics Letters, 2011, 99, 043106.	3.3	42
32	Fully Automated Portable Comprehensive 2-Dimensional Gas Chromatography Device. Analytical Chemistry, 2016, 88, 10266-10274.	6.5	42
33	Robust Design of RF-MEMS Cantilever Switches Using Contact Physics Modeling. IEEE Transactions on Industrial Electronics, 2009, 56, 1012-1021.	7.9	41
34	μGC × μGC: Comprehensive Two-Dimensional Gas Chromatographic Separations with Microfabricated Components. Analytical Chemistry, 2015, 87, 1630-1637.	6.5	40
35	Cyclewise Operation of Printed MoS ₂ Transistor Biosensors for Rapid Biomolecule Quantification at Femtomolar Levels. ACS Sensors, 2017, 2, 274-281.	7.8	40
36	Syntrophic co-culture amplification of production phenotype for high-throughput screening of microbial strain libraries. Metabolic Engineering, 2019, 54, 232-243.	7.0	40

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37	Smart multi-channel two-dimensional micro-gas chromatography for rapid workplace hazardous volatile organic compounds measurement. Lab on A Chip, 2013, 13, 818.	6.0	39
38	Comprehensive Two-Dimensional Gas Chromatographic Separations with a Microfabricated Thermal Modulator. Analytical Chemistry, 2012, 84, 6973-6980.	6.5	38
39	Optofluidic detection for cellular phenotyping. Lab on A Chip, 2012, 12, 3552.	6.0	38
40	Two different device physics principles for operating MoS2 transistor biosensors with femtomolar-level detection limits. Applied Physics Letters, 2015, 107, .	3.3	38
41	A fully automated portable gas chromatography system for sensitive and rapid quantification of volatile organic compounds in water. RSC Advances, 2016, 6, 49416-49424.	3.6	38
42	Lifetime Extension of RF MEMS Direct Contact Switches in Hot Switching Operations by Ball Grid Array Dimple Design. IEEE Electron Device Letters, 2007, 28, 479-481.	3.9	37
43	Fabrication and comparison of MoS2 and WSe2 field-effect transistor biosensors. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2015, 33, .	1.2	37
44	Adhesion effects on contact opening dynamics in micromachined switches. Journal of Applied Physics, 2005, 97, 103535.	2.5	36
45	MEMS-based multiphoton endomicroscope for repetitive imaging of mouse colon. Biomedical Optics Express, 2015, 6, 3074.	2.9	35
46	Multiplexed Nanoplasmonic Temporal Profiling of T-Cell Response under Immunomodulatory Agent Exposure. ACS Sensors, 2016, 1, 941-948.	7.8	35
47	Optimized gene expression from bacterial chromosome by high-throughput integration and screening. Science Advances, 2021, 7, .	10.3	35
48	Nanoimprinted strain-controlled elastomeric gratings for optical wavelength tuning. Applied Physics Letters, 2005, 86, 161113.	3.3	34
49	Evaluation of a Microfabricated Thermal Modulator for Comprehensive Two-Dimensional Microscale Gas Chromatography. Analytical Chemistry, 2011, 83, 5556-5562.	6.5	34
50	Centrifugal microfluidics for sorting immune cells from whole blood. Sensors and Actuators B: Chemical, 2017, 245, 1050-1061.	7.8	34
51	Machine-Learning-Assisted Microfluidic Nanoplasmonic Digital Immunoassay for Cytokine Storm Profiling in COVID-19 Patients. ACS Nano, 2021, 15, 18023-18036.	14.6	33
52	Fully integrated electrothermal multidomain modeling of RF MEMS switches. IEEE Microwave and Wireless Components Letters, 2003, 13, 364-366.	3.2	32
53	Targeted vertical cross-sectional imaging with handheld near-infrared dual axes confocal fluorescence endomicroscope. Biomedical Optics Express, 2013, 4, 322.	2.9	32
54	Impact of molecular orientation on thermal conduction in spin-coated polyimide films. Journal of Applied Physics, 1999, 86, 1925-1931.	2.5	31

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55	Contrasting Effects of Nanoparticle Binding on Protein Denaturation. Journal of Physical Chemistry C, 2014, 118, 22069-22078.	3.1	30
56	A digital protein microarray for COVID-19 cytokine storm monitoring. Lab on A Chip, 2021, 21, 331-343.	6.0	30
57	Electrically Programmable Surfaces for Configurable Patterning of Cells. Advanced Materials, 2008, 20, 1418-1423.	21.0	29
58	Single-cell RT-LAMP mRNA detection by integrated droplet sorting and merging. Lab on A Chip, 2019, 19, 2425-2434.	6.0	29
59	Microfabricated passive vapor preconcentrator/injector designed for microscale gas chromatography. Lab on A Chip, 2012, 12, 717.	6.0	28
60	Preprogrammed capillarity to passively control system-level sequential and parallel microfluidic flows. Lab on A Chip, 2013, 13, 2091.	6.0	28
61	Treatment of Cytokine Storm in COVID-19 Patients With Immunomodulatory Therapy. ASAIO Journal, 2020, 66, 1079-1083.	1.6	28
62	A single-layer PDMS-on-silicon hybrid microactuator with multi-axis out-of-plane motion capabilities-part II: fabrication and characterization. Journal of Microelectromechanical Systems, 2005, 14, 558-566.	2.5	27
63	A single-layer PDMS-on-silicon hybrid microactuator with multi-axis out-of-plane motion capabilities-Part i: design and analysis. Journal of Microelectromechanical Systems, 2005, 14, 548-557.	2.5	27
64	An Integrated Plasmoâ€Photoelectronic Nanostructure Biosensor Detects an Infection Biomarker Accompanying Cell Death in Neutrophils. Small, 2020, 16, 1905611.	10.0	27
65	Few-Layer MoS ₂ Photodetector Arrays for Ultrasensitive On-Chip Enzymatic Colorimetric Analysis. ACS Nano, 2021, 15, 7722-7734.	14.6	27
66	Machine learning-based cytokine microarray digital immunoassay analysis. Biosensors and Bioelectronics, 2021, 180, 113088.	10.1	26
67	Design of a MEMS Tunable Polymer Grating for Single Detector Spectroscopy. International Journal of Optomechatronics, 2008, 2, 75-87.	6.6	25
68	Emerging Microfluidic Tools for Functional Cellular Immunophenotyping: A New Potential Paradigm for Immune Status Characterization. Frontiers in Oncology, 2013, 3, 98.	2.8	25
69	Low-Power Miniaturized Helium Dielectric Barrier Discharge Photoionization Detectors for Highly Sensitive Vapor Detection. Analytical Chemistry, 2016, 88, 8780-8786.	6.5	25
70	Aqueous two-phase systems enable multiplexing of homogeneous immunoassays. Technology, 2014, 02, 176-184.	1.4	24
71	Vertical Cross-sectional Imaging of Colonic Dysplasia In Vivo With Multi-spectral Dual Axes Confocal Endomicroscopy. Gastroenterology, 2014, 146, 615-617.	1.3	22
72	Preprogrammed, Parallel On-Chip Immunoassay Using System-Level Capillarity Control. Analytical Chemistry, 2013, 85, 6902-6907.	6.5	21

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73	Rapid single-molecule digital detection of protein biomarkers for continuous monitoring of systemic immune disorders. Blood, 2021, 137, 1591-1602.	1.4	21
74	Protein Pattern Assembly by Active Control of a Triblock Copolymer Monolayer. Nano Letters, 2006, 6, 2763-2767.	9.1	20
75	A platform to parallelize planar surfaces and control their spatial separation with nanometer resolution. Review of Scientific Instruments, 2012, 83, 105101.	1.3	19
76	In situ calibration of micro-photoionization detectors in a multi-dimensional micro-gas chromatography system. Analyst, The, 2016, 141, 4100-4107.	3.5	19
77	Comprehensive two-dimensional gas chromatographic separations with a temperature programmed microfabricated thermal modulator. Journal of Chromatography A, 2016, 1444, 114-122.	3.7	19
78	Low-force contact heating and softening using micromechanical switches in diffusive-ballistic electron-transport transition. Applied Physics Letters, 2005, 86, 023507.	3.3	16
79	A zone-heated gas chromatographic microcolumn: Energy efficiency. Sensors and Actuators B: Chemical, 2018, 254, 561-572.	7.8	16
80	Emerging biotechnologies for evaluating disruption of stress, sleep, and circadian rhythm mechanism using aptamer-based detection of salivary biomarkers. Biotechnology Advances, 2022, 59, 107961.	11.7	16
81	Smart Three-Dimensional Gas Chromatography. Analytical Chemistry, 2013, 85, 6871-6875.	6.5	15
82	Polymer-coated micro-optofluidic ring resonator detector for a comprehensive two-dimensional gas chromatographic microsystem: μGC × μGC–μOFRR. Analyst, The, 2016, 141, 261-269.	3.5	15
83	On-site monitoring of occupational exposure to volatile organic compounds by a portable comprehensive 2-dimensional gas chromatography device. Analytical Methods, 2018, 10, 237-244.	2.7	15
84	Skin-Effect Self-Heating in Air-Suspended RF MEMS Transmission-Line Structures. Journal of Microelectromechanical Systems, 2006, 15, 1622-1631.	2.5	14
85	Multiplexed Spectral Signature Detection for Microfluidic Color-Coded Bioparticle Flow. Analytical Chemistry, 2010, 82, 9506-9512.	6.5	14
86	A Flexible Nanograting Integrated Onto Silicon Micromachines by Soft Lithographic Replica Molding and Assembly. Journal of Microelectromechanical Systems, 2008, 17, 393-401.	2.5	12
87	High-speed tuning of visible laser wavelength using a nanoimprinted grating optical tunable filter. Applied Physics Letters, 2009, 95, 211106.	3.3	12
88	A Wearable MEMS Gas Chromatograph for Multi-Vapor Determinations. Procedia Engineering, 2016, 168, 1398-1401.	1.2	12
89	An ultrahighâ€ŧhroughput screening platform based on flow cytometric droplet sorting for mining novel enzymes from metagenomic libraries. Environmental Microbiology, 2021, 23, 996-1008. 	3.8	11
90	Full-wave electromagnetic and thermal modeling for the prediction of heat-dissipation-induced RF-MEMS switch failure. Journal of Micromechanics and Microengineering, 2006, 16, 157-164.	2.6	10

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91	Transition from multiple to single microcontact conduction during hot switching of microelectromechanical switches with ball-shaped dimples. Applied Physics Letters, 2006, 89, 133501.	3.3	9
92	High-speed deformation of soft lithographic nanograting patterns for ultrasensitive optical spectroscopy. Applied Physics Letters, 2008, 92, 051116.	3.3	9
93	Co-Design of a MEMS Actuator and Its Controller Using Frequency Constraints. , 2008, , .		9
94	Fabry-Pérot cavity sensor-based optofluidic gas chromatography using a microfabricated passive preconcentrator/injector. Lab on A Chip, 2013, 13, 851.	6.0	9
95	Experimental Coupling of a MEMS Gas Chromatograph and a Mass Spectrometer for Organic Analysis in Space Environments. ACS Earth and Space Chemistry, 2020, 4, 1718-1729.	2.7	8
96	Effect of Thermal Desorption Kinetics on Vapor Injection Peak Irregularities by a Microscale Gas Chromatography Preconcentrator. Analytical Chemistry, 2012, 84, 6336-6340.	6.5	7
97	First-principle modeling and characterization of thermal modulation in comprehensive two-dimensional gas chromatography using a microfabricated device. Sensors and Actuators B: Chemical, 2016, 231, 135-146.	7.8	7
98	Fabrication of prebent MoS2 biosensors on flexible substrates. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2017, 35, .	1.2	7
99	Microfabricated ionic liquid column for separations in dry air. Journal of Chromatography A, 2020, 1620, 461002.	3.7	7
100	Predicting the stochastic guiding of kinesin-driven microtubules in microfabricated tracks: A statistical-mechanics-based modeling approach. Physical Review E, 2010, 81, 011919.	2.1	6
101	Uniform-temperature, microscale thermal modulator with area-adjusted air-gap isolation for comprehensive two-dimensional gas chromatography. Sensors and Actuators B: Chemical, 2013, 181, 518-522.	7.8	6
102	Mass-producible microporous silicon membranes for specific leukocyte subset isolation, immunophenotyping, and personalized immunomodulatory drug screening <i>in vitro</i> . Lab on A Chip, 2019, 19, 3065-3076.	6.0	6
103	Peak focusing based on stationary phase thickness gradient. Journal of Chromatography A, 2020, 1614, 460737.	3.7	6
104	Simultaneous Electrical and Thermal Modeling of a Contact-Type RF MEMS Switch. , 2003, , 225.		5
105	Foreword Special Section on Packaging for Micro/Nano-Scale Systems. IEEE Transactions on Advanced Packaging, 2009, 32, 399-401.	1.6	5
106	Integrated on-site collection and detection of airborne microparticles for smartphone-based micro-climate quality control. Analyst, The, 2020, 145, 6283-6290.	3.5	5
107	MEMS GC Column Performance for Analyzing Organics and Biological Molecules for Future Landed Planetary Missions. Frontiers in Astronomy and Space Sciences, 2022, 9, .	2.8	5
108	A nano grating tunable mems optical filter for high-speed on-chip multispectral fluorescent		4

A nano grating tunable mems optical filter for high-speed on-chip multispectral fluorescent detection. , 2009, 2009, 6693-5. 108

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109	2D resonant microscanner for dual axes confocal fluorescence endomicroscope. , 2014, , .		4
110	Ultrasensitive Multiparameter Phenotyping of Rare Cells Using an Integrated Digitalâ€Molecular ounting Microfluidic Well Plate. Small, 2021, 17, e2101743.	10.0	4
111	MEMS tunable polymer grating for advantageous spectroscopic measurements. Proceedings of SPIE, 2007, , .	0.8	3
112	A Kinesin Driven Enzyme Linked Immunosorbant Assay (ELISA) for Ultra Low Protein Detection Applications. Biophysical Journal, 2014, 106, 622a.	0.5	3
113	Influence of Thermal Time Constant of a Micro-Fabricated Thermal Modulator (\$mu \$ TM) for Comprehensive Microscale 2-D Gas Chromatography (\$mu \$ GC \$imes mu \$ GC). Journal of Microelectromechanical Systems, 2017, 26, 743-745.	2.5	3
114	Nearâ€Infrared Multilayer MoS ₂ Photoconductivityâ€Enabled Ultrasensitive Homogeneous Plasmonic Colorimetric Biosensing. Advanced Materials Interfaces, 2021, 8, .	3.7	3
115	ANISOTROPIC THERMAL ENERGY TRANSPORT IN POLARIZED LIQUID CRYSTALLINE (LC) POLYMERS UNDER ELECTRIC FIELDS. Microscale Thermophysical Engineering, 2003, 7, 87-99.	1.2	2
116	Multi-axis single-layer PDMS-on-silicon micro optical reflector. , 2004, , .		2
117	A metal-coated polymer micromirror for strain-driven high-speed multiaxis optical scanning. IEEE Photonics Technology Letters, 2005, 17, 1193-1195.	2.5	2
118	Surface landing of microtubule nanotracks influenced by lithographically patterned channels. Applied Physics Letters, 2009, 95, 103701.	3.3	2
119	A low power, high-speed miniaturized thermal modulator for comprehensive 2D gas chromatography. , 2010, , .		2
120	Investigation into the use of electrochemical impedance spectroscopy for cellular functional immunophenotyping. , 2016, , .		2
121	Portable multi-dimensional gas chromatography device for rapid field analysis of chemical compounds. , 2017, , .		2
122	Sort'N merge: A deterministic microfluidic platform for co-encapsulating distinct particles in microdroplets. , 2018, , .		2
123	Fabrication of beam structures with micro-scale cross-sections and meso-scale spans. Journal of Micromechanics and Microengineering, 2007, 17, 2516-2521.	2.6	1
124	Understanding and control of unstable contact resistance in RF MEMS gold-gold direct contact switches. , 2010, , .		1
125	Optofluidic cellular immunofunctional analysis by localized surface plasmon resonance. Proceedings of SPIE, 2014, , .	0.8	1
126	Nanofluidic flow assisted assembly of dispersed plasmonic nanostructures into shallow nanochannel sensors. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2016, 34, 06KM04.	1.2	1

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127	Breaking the diffusion-limit of the nano-plasmofluidic biosensing with two regimes of AC electrohydrodynamic flow. , 2017, , .		1
128	Design Optimization of a Novel, Large-Displacement, Multi-Axis, Silicon/Polymer Hybrid Actuator for Micro Optics. , 2003, , 197.		0
129	Robust Design of RF-MEMS Cantilever Switches Using Contact Physics Modeling. , 2006, , 111.		0
130	Mechanically tunable photonic crystal. Proceedings of SPIE, 2007, , .	0.8	0
131	Laser micro-machining using near-field optics. Applied Surface Science, 2008, 254, 5105-5110.	6.1	0
132	A Novel Experimental Platform for DNA Mechanics Assays. Biophysical Journal, 2009, 96, 290a.	0.5	0
133	Microfabricated integrated sampler-injector (MISI) for micro gas chromatography. , 2011, , .		0
134	Thermal desorption/injection characterization of a microfabricated passive preconcentrator/injector for micro gas chromatography. , 2012, , .		0
135	Covalent Conjugation of Antibodies to Biomolecular-Motor Driven Shuttles. Biophysical Journal, 2012, 102, 701a.	0.5	0
136	A Kinesin Driven Microfluidic Concentrator Device for Ultrasensitive Detection of Analyte. Biophysical Journal, 2013, 104, 523a.	0.5	0
137	System Integration of Nanostructured Materials for Point-of-Care Immune Biosensing. , 2019, , .		0
138	Biosensors: An Integrated Plasmoâ€Photoelectronic Nanostructure Biosensor Detects an Infection Biomarker Accompanying Cell Death in Neutrophils (Small 1/2020). Small, 2020, 16, 2070004.	10.0	0
139	Transition from Mechanical "Engineering" to Mechanical "Science". Journal of the Society of Mechanical Engineers, 2012, 115, 414-416.	0.0	0
140	Multiscale, Hierarchical Integration of Soft Polymer Micro- and Nanostructures into Optical MEMS. , 2012, , 491-518.		0
141	Nearâ€Infrared Multilayer MoS ₂ Photoconductivityâ€Enabled Ultrasensitive Homogeneous Plasmonic Colorimetric Biosensing (Adv. Mater. Interfaces 24/2021). Advanced Materials Interfaces,	3.7	0