

Hirokazu Kaji

List of Publications by Year in descending order

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123
papers

4,578
citations

87723

38
h-index

102304

66
g-index

125
all docs

125
docs citations

125
times ranked

6190
citing authors

#	ARTICLE	IF	CITATIONS
1	Biomimetic tissues on a chip for drug discovery. <i>Drug Discovery Today</i> , 2012, 17, 173-181.	3.2	317
2	Dielectrophoretically Aligned Carbon Nanotubes to Control Electrical and Mechanical Properties of Hydrogels to Fabricate Contractile Muscle Myofibers. <i>Advanced Materials</i> , 2013, 25, 4028-4034.	11.1	236
3	Cell docking inside microwells within reversibly sealed microfluidic channels for fabricating multiphenotype cell arrays. <i>Lab on A Chip</i> , 2005, 5, 1380.	3.1	224
4	Skeletal Muscle Tissue Engineering: Methods to Form Skeletal Myotubes and Their Applications. <i>Tissue Engineering - Part B: Reviews</i> , 2014, 20, 403-436.	2.5	218
5	Engineered Contractile Skeletal Muscle Tissue on a Microgrooved Methacrylated Gelatin Substrate. <i>Tissue Engineering - Part A</i> , 2012, 18, 2453-2465.	1.6	206
6	Gelatin methacrylate as a promising hydrogel for 3D microscale organization and proliferation of dielectrophoretically patterned cells. <i>Lab on A Chip</i> , 2012, 12, 2959.	3.1	148
7	Engineering systems for the generation of patterned co-cultures for controlling cell-cell interactions. <i>Biochimica Et Biophysica Acta - General Subjects</i> , 2011, 1810, 239-250.	1.1	145
8	An enzyme-based microfluidic biofuel cell using vitamin K3-mediated glucose oxidation. <i>Electrochimica Acta</i> , 2007, 52, 4669-4674.	2.6	142
9	Highly Conductive Stretchable and Biocompatible Electrode-Hydrogel Hybrids for Advanced Tissue Engineering. <i>Advanced Healthcare Materials</i> , 2014, 3, 1919-1927.	3.9	138
10	Patterned Differentiation of Individual Embryoid Bodies in Spatially Organized 3D Hybrid Microgels. <i>Advanced Materials</i> , 2010, 22, 5276-5281.	11.1	107
11	Microelectrochemical Approach to Induce Local Cell Adhesion and Growth on Substrates. <i>Langmuir</i> , 2004, 20, 16-19.	1.6	103
12	In situ formation of injectable chitosan-gelatin hydrogels through double crosslinking for sustained intraocular drug delivery. <i>Materials Science and Engineering C</i> , 2018, 88, 1-12.	3.8	103
13	Red blood cell motions in high-hematocrit blood flowing through a stenosed microchannel. <i>Journal of Biomechanics</i> , 2009, 42, 838-843.	0.9	98
14	Interdigitated array of Pt electrodes for electrical stimulation and engineering of aligned muscle tissue. <i>Lab on A Chip</i> , 2012, 12, 3491.	3.1	96
15	Structural studies of enzyme-based microfluidic biofuel cells. <i>Journal of Power Sources</i> , 2008, 178, 53-58.	4.0	90
16	Engineered Nanomembranes for Directing Cellular Organization Toward Flexible Biodevices. <i>Nano Letters</i> , 2013, 13, 3185-3192.	4.5	85
17	In Situ Control of Cellular Growth and Migration on Substrates Using Microelectrodes. <i>Journal of the American Chemical Society</i> , 2004, 126, 15026-15027.	6.6	83
18	Electrodeposition of anchored polypyrrole film on microelectrodes and stimulation of cultured cardiac myocytes. <i>Biomaterials</i> , 2007, 28, 1480-1485.	5.7	78

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19	Preparation and characterization of collagen microspheres for sustained release of VEGF. <i>Journal of Materials Science: Materials in Medicine</i> , 2010, 21, 1891-1898.	1.7	72
20	Three-dimensional co-culture of C2C12/PC12 cells improves skeletal muscle tissue formation and function. <i>Journal of Tissue Engineering and Regenerative Medicine</i> , 2017, 11, 582-595.	1.3	70
21	Microfluidic co-cultures of retinal pigment epithelial cells and vascular endothelial cells to investigate choroidal angiogenesis. <i>Scientific Reports</i> , 2017, 7, 3538.	1.6	69
22	Localized chemical stimulation to micropatterned cells using multiple laminar fluid flows. <i>Lab on A Chip</i> , 2003, 3, 208.	3.1	68
23	Electrical stimulation as a biomimicry tool for regulating muscle cell behavior. <i>Organogenesis</i> , 2013, 9, 87-92.	0.4	65
24	On-Demand Patterning of Protein Matrixes Inside a Microfluidic Device. <i>Analytical Chemistry</i> , 2006, 78, 5469-5473.	3.2	63
25	Electrically induced contraction of C2C12 myotubes cultured on a porous membrane-based substrate with muscle tissue-like stiffness. <i>Biomaterials</i> , 2010, 31, 6981-6986.	5.7	60
26	3D Printing Techniques and Their Applications to Organ-on-a-Chip Platforms: A Systematic Review. <i>Sensors</i> , 2021, 21, 3304.	2.1	60
27	Electrically regulated differentiation of skeletal muscle cells on ultrathin graphene-based films. <i>RSC Advances</i> , 2014, 4, 9534.	1.7	57
28	Directed assembly of cell-laden microgels for building porous three-dimensional tissue constructs. <i>Journal of Biomedical Materials Research - Part A</i> , 2011, 97A, 93-102.	2.1	56
29	Micropatterning contractile C ₂ C ₁₂ myotubes embedded in a fibrin gel. <i>Biotechnology and Bioengineering</i> , 2010, 105, 1161-1167.	1.7	53
30	Drug delivery devices for retinal diseases. <i>Advanced Drug Delivery Reviews</i> , 2018, 128, 148-157.	6.6	51
31	Patterning Cellular Motility Using an Electrochemical Technique and a Geometrically Confined Environment. <i>Langmuir</i> , 2006, 22, 10784-10787.	1.6	49
32	Micropatterned Polymeric Nanosheets for Local Delivery of an Engineered Epithelial Monolayer. <i>Advanced Materials</i> , 2014, 26, 1699-1705.	11.1	49
33	Controlled cocultures of HeLa cells and human umbilical vein endothelial cells on detachable substrates. <i>Lab on A Chip</i> , 2009, 9, 427-432.	3.1	47
34	A microfluidic-based neurotoxin concentration gradient for the generation of an <i>in vitro</i> model of Parkinson's disease. <i>Biomicrofluidics</i> , 2011, 5, 22214.	1.2	43
35	Designer Hydrophilic Regions Regulate Droplet Shape for Controlled Surface Patterning and 3D Microgel Synthesis. <i>Small</i> , 2012, 8, 393-403.	5.2	42
36	Patterning the Surface Cytophobicity of an Albumin-Physisorbed Substrate by Electrochemical Means. <i>Langmuir</i> , 2005, 21, 6966-6969.	1.6	41

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37	Fiber-Assisted Molding (FAM) of Surfaces with Tunable Curvature to Guide Cell Alignment and Complex Tissue Architecture. <i>Small</i> , 2014, 10, 4851-4857.	5.2	41
38	Totally shape-conformable electrode/hydrogel composite for on-skin electrophysiological measurements. <i>Sensors and Actuators B: Chemical</i> , 2016, 237, 49-53.	4.0	41
39	A polymeric device for controlled transscleral multi-drug delivery to the posterior segment of the eye. <i>Acta Biomaterialia</i> , 2014, 10, 680-687.	4.1	40
40	Biofuel cell anode: NAD ⁺ /glucose dehydrogenase-coimmobilized ketjenblack electrode. <i>Chemical Physics Letters</i> , 2009, 480, 123-126.	1.2	38
41	Axisymmetric polydimethylsiloxane microchannels for <i>in vitro</i> hemodynamic studies. <i>Biofabrication</i> , 2009, 1, 035005.	3.7	38
42	A scalable controlled-release device for transscleral drug delivery to the retina. <i>Biomaterials</i> , 2011, 32, 1950-1956.	5.7	38
43	Controlled Release of Drugs from Gradient Hydrogels for High-Throughput Analysis of Cell-Drug Interactions. <i>Analytical Chemistry</i> , 2012, 84, 1302-1309.	3.2	36
44	A contactless electrical stimulator: application to fabricate functional skeletal muscle tissue. <i>Biomedical Microdevices</i> , 2013, 15, 109-115.	1.4	35
45	Modeling angiogenesis with micro- and nanotechnology. <i>Lab on A Chip</i> , 2017, 17, 4186-4219.	3.1	32
46	Pharmacological characterization of micropatterned cardiac myocytes. <i>Biomaterials</i> , 2003, 24, 4239-4244.	5.7	31
47	Selective capture of a specific cell type from mixed leucocytes in an electrode-integrated microfluidic device. <i>Biosensors and Bioelectronics</i> , 2009, 24, 2892-2897.	5.3	29
48	Intracellular Ca ²⁺ imaging for micropatterned cardiac myocytes. <i>Biotechnology and Bioengineering</i> , 2003, 81, 748-751.	1.7	28
49	Organ-on-a-Chip Platforms for Drug Screening and Delivery in Tumor Cells: A Systematic Review. <i>Cancers</i> , 2022, 14, 935.	1.7	27
50	Monitoring impedance changes associated with motility and mitosis of a single cell. <i>Lab on A Chip</i> , 2010, 10, 2546.	3.1	26
51	Directing the flow of medium in controlled cocultures of HeLa cells and human umbilical vein endothelial cells with a microfluidic device. <i>Lab on A Chip</i> , 2010, 10, 2374.	3.1	23
52	A Platform for Controlled Dual-Drug Delivery to the Retina: Protective Effects against Light-Induced Retinal Damage in Rats. <i>Advanced Healthcare Materials</i> , 2014, 3, 1555-1560.	3.9	23
53	Transscleral Sustained Vasohibin-1 Delivery by a Novel Device Suppressed Experimentally-Induced Choroidal Neovascularization. <i>PLoS ONE</i> , 2013, 8, e58580.	1.1	23
54	Portable Micropatterns of Neuronal Cells Supported by Thin Hydrogel Films. <i>ACS Biomaterials Science and Engineering</i> , 2015, 1, 329-334.	2.6	22

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55	Localized immobilization of proteins onto microstructures within a preassembled microfluidic device. <i>Sensors and Actuators B: Chemical</i> , 2008, 128, 545-551.	4.0	21
56	Contractile Skeletal Muscle Cells Cultured with a Conducting Soft Wire for Effective, Selective Stimulation. <i>Scientific Reports</i> , 2018, 8, 2253.	1.6	20
57	The microRNA cluster C19MC confers differentiation potential into trophoblast lineages upon human pluripotent stem cells. <i>Nature Communications</i> , 2022, 13, .	5.8	20
58	A porous membrane-based culture substrate for localized in situ electroporation of adherent mammalian cells. <i>Sensors and Actuators B: Chemical</i> , 2007, 128, 5-11.	4.0	19
59	Localized electrical stimulation to C2C12 myotubes cultured on a porous membrane-based substrate. <i>Biomedical Microdevices</i> , 2009, 11, 413-419.	1.4	18
60	Long-Term Protection of Genetically Ablated Rabbit Retinal Degeneration by Sustained Transscleral Unoprostone Delivery. , 2016, 57, 6527.		18
61	Anisotropic Growth of Conducting Polymers along Heparin-Modified Surfaces. <i>Langmuir</i> , 2007, 23, 8304-8307.	1.6	15
62	Prototyping a Versatile Two-Layer Multi-Channel Microfluidic Device for Direct-Contact Cell-Vessel Co-Culture. <i>Micromachines</i> , 2020, 11, 79.	1.4	14
63	Integration of an electrochemical-based biolithography technique into an AFM system. <i>Analytical and Bioanalytical Chemistry</i> , 2008, 391, 2711-2716.	1.9	13
64	Patterning Adherent Cells within Microchannels by Combination of Electrochemical Biolithography Technique and Repulsive Dielectrophoretic Force. <i>Electrochemistry</i> , 2008, 76, 555-558.	0.6	13
65	Recent trends of biomaterials and biosensors for organ-on-chip platforms. <i>Bioprinting</i> , 2022, 26, e00202.	2.9	13
66	Stepwise formation of patterned cell co-cultures in silicone tubing. <i>Biotechnology and Bioengineering</i> , 2007, 98, 919-925.	1.7	12
67	Pharmacokinetic and Safety Evaluation of a Transscleral Sustained Unoprostone Release Device in Monkey Eyes. , 2018, 59, 644.		12
68	Micropatterned HeLa Cell Culture on PEG Monolayer-Coated Glass Substrates. <i>Chemistry Letters</i> , 2002, 31, 904-905.	0.7	11
69	Spatiotemporal sub-cellular biopatterning using an AFM-assisted electrochemical system. <i>Electrochemistry Communications</i> , 2009, 11, 1781-1784.	2.3	11
70	Minimally-invasive transepidermal potentiometry with microneedle salt bridge. <i>Biomedical Microdevices</i> , 2016, 18, 55.	1.4	10
71	Electrochemical manipulation of cell populations supported by biodegradable polymeric nanosheets for cell transplantation therapy. <i>Biomaterials Science</i> , 2017, 5, 216-222.	2.6	10
72	A drug refillable device for transscleral sustained drug delivery to the retina. <i>European Journal of Pharmaceutics and Biopharmaceutics</i> , 2019, 136, 184-191.	2.0	9

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73	A 3D Printed Self-Sustainable Cell-Encapsulation Drug Delivery Device for Periocular Transplant-Based Treatment of Retinal Degenerative Diseases. <i>Micromachines</i> , 2020, 11, 436.	1.4	9
74	Transscleral sustained ranibizumab delivery using an episcleral implantable device: Suppression of laser-induced choroidal neovascularization in rats. <i>International Journal of Pharmaceutics</i> , 2019, 567, 118458.	2.6	8
75	Electrodes Combined with an Agarose Stamp for Addressable Micropatterning. <i>Langmuir</i> , 2010, 26, 11526-11529.	1.6	7
76	Protective effects of sustained transscleral unoprostone delivery against retinal degeneration in <sc>334ter rhodopsin mutant rats. <i>Journal of Biomedical Materials Research - Part B Applied Biomaterials</i> , 2016, 104, 1730-1737.	1.6	7
77	A multilayered sheet-type device capable of sustained drug release and deployment control. <i>Biomedical Microdevices</i> , 2019, 21, 60.	1.4	7
78	Microfluidic systems for controlling stem cell microenvironments. , 2019, , 31-63.		7
79	Hydrogel-based bioassay sheets for in vitro evaluation of contraction-dependent metabolic regulation in skeletal muscle cells. <i>Biomaterials Science</i> , 2014, 2, 252-256.	2.6	6
80	Microstamp-Based Micromachining for Modulation of Growth of Cultured Neuronal Cells. <i>JSME International Journal Series C-Mechanical Systems Machine Elements and Manufacturing</i> , 2004, 47, 956-961.	0.3	5
81	Conducting Polymer-Based Electrodes for Controlling Cellular Functions. <i>Electrochemistry</i> , 2008, 76, 532-534.	0.6	5
82	Application of clotrimazole via a novel controlled release device provides potent retinal protection. <i>Journal of Materials Science: Materials in Medicine</i> , 2015, 26, 230.	1.7	5
83	Transscleral Controlled Delivery of Geranylgeranylacetone Using a Polymeric Device Protects Rat Retina Against Light Injury. <i>Advances in Experimental Medicine and Biology</i> , 2016, 854, 471-477.	0.8	5
84	Physicochemical and biological characterization of sustained isopropyl unoprostone-release device made of poly(ethyleneglycol) dimethacrylates. <i>Journal of Materials Science: Materials in Medicine</i> , 2017, 28, 107.	1.7	5
85	Transfer of two-dimensional patterns of human umbilical vein endothelial cells into fibrin gels to facilitate vessel formation. <i>Chemical Communications</i> , 2010, 46, 2070.	2.2	4
86	Bonding of synthetic hydrogels with fibrin as the glue to engineer hydrogel-based biodevices. <i>Journal of Bioscience and Bioengineering</i> , 2014, 118, 94-97.	1.1	4
87	Controlled basic fibroblast growth factor release device made of poly(ethyleneglycol) dimethacrylates for creating a subcutaneous neovascular bed for cell transplantation. <i>Journal of Biomedical Materials Research - Part A</i> , 2017, 105, 3017-3024.	2.1	4
88	An Open-Source Add-On EVOMÂ® Device for Real-Time Transepithelial/Endothelial Electrical Resistance Measurements in Multiple Transwell Samples. <i>Micromachines</i> , 2021, 12, 282.	1.4	4
89	Highly stretchable cell-cultured hydrogel sheet. <i>RSC Advances</i> , 2015, 5, 66334-66338.	1.7	3
90	A self-deploying drug release device using polymeric films. <i>Journal of Biomedical Materials Research - Part B Applied Biomaterials</i> , 2018, 106, 780-786.	1.6	3

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91	Intrasceral Transplantation of a Collagen Sheet with Cultured Brain-Derived Neurotrophic Factor Expressing Cells Partially Rescues the Retina from Damage due to Acute High Intraocular Pressure. <i>Advances in Experimental Medicine and Biology</i> , 2014, 801, 837-843.	0.8	3
92	Fabrication and Characterization of Micropatterned Living Cells. <i>Hyomen Kagaku</i> , 2004, 25, 290-295.	0.0	3
93	In-situ Au^{3+} Electrodeposition of Au^{3+} on TiO_2 Nanoparticles. <i>Hyomen Gijutsu/Journal of the Surface Finishing Society of Japan</i> , 2004, 25, 290-295.		
94	Microdroplet Patterning: Designer Hydrophilic Regions Regulate Droplet Shape for Controlled Surface Patterning and 3D Microgel Synthesis (<i>Small</i> 3/2012). <i>Small</i> , 2012, 8, 326-326.	5.2	2
95	On-chip disease models of the human retina. , 2019, , 351-372.		2
96	Electrochemical bio-lithography for in-situ immobilization of proteins and cells within microchannels. , 0, , .		1
97	AN ELECTROCHEMICAL MICROSYSTEM FOR MANIPULATING LIVING CELLS. , 2006, , .		1
98	Stepwise Electric Power Generation for Prolonging Lifetime of Miniaturized Biofuel Cell. <i>ECS Meeting Abstracts</i> , 2008, , .	0.0	1
99	Microfluidic Systems for Controlling Stem Cells Microenvironments. , 2013, , 175-203.		1
100	Microfabrication and Nanofabrication Techniques. , 2015, , 207-219.		1
101	Microscale Biomaterials for Tissue Engineering. , 2011, , 119-138.		1
102	Electrochemical Bio-Lithography for In Situ Control of Cellular Adhesion and Growth on a Chip. , 0, , .		0
103	Electrochemical Approach to Pattern Cells within Three-Dimensional Microstructures. , 2006, , .		0
104	Au^{3+} Electrodeposition of Au^{3+} on TiO_2 Nanoparticles. <i>Electrochemistry</i> , 2006, 74, 905-910.	0.6	0
105	ENZYME-BASED GLUCOSE BIOFUEL CELL USING VITAMIN K_3 -IMMOBILIZED POLYMER AS ELECTRON MEDIATOR. , 2006, , .		0
106	Generation of Patterned Cell Co-Cultures in Silicone Tubing Using a Microelectrode Technique and Electrostatic Assembly. <i>Annual International Conference of the IEEE Engineering in Medicine and Biology Society</i> , 2007, 2007, 5861-4.	0.5	0
107	Generation of Patterned Cell Co-Cultures inside Tubular Structure Using Electrochemical Biolithography and Electrostatic Assembly. , 2007, , .		0
108	Control of Cellular Adhesion within Microfluidic Device using Electrochemical Biolithography and Dielectrophoresis for Cell-Based Assay. <i>ECS Transactions</i> , 2008, 16, 11-20.	0.3	0

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109	Stem Cells: Patterned Differentiation of Individual Embryoid Bodies in Spatially Organized 3D Hybrid Microgels (Adv. Mater. 46/2010). Advanced Materials, 2010, 22, 5220-5220.	11.1	0
110	Biofabrication techniques for biologically relevant tissue models and drug delivery devices. , 2012, , .		0
111	Injectable polymeric nanosheets for subretinal cell delivery. , 2016, , .		0
112	Hydrogel-based electrical stimulation culture system to control the engineered cellular activities driven by nano biomolecules. , 2016, , .		0
113	Effect of sustained insulin-releasing device made of poly(ethylene glycol) dimethacrylates on retinal function in streptozotocin-induced diabetic rats. Journal of Materials Science: Materials in Medicine, 2020, 31, 52.	1.7	0
114	6PM3-PMN-004 Polymeric Ultra-thin Films for Cell Delivery System. The Proceedings of the Symposium on Micro-Nano Science and Technology, 2013, 2013.5, 179-180.	0.0	0
115	1C31 Applications of micro/nanotechnologies to ophthalmology. The Proceedings of the Bioengineering Conference Annual Meeting of BED/JSME, 2014, 2014.26, 87-88.	0.0	0
116	2C43 Cell delivery to the subretinal space of rats using nanosheets. The Proceedings of the Bioengineering Conference Annual Meeting of BED/JSME, 2015, 2015.27, 419-420.	0.0	0
117	2G42 Development of an injectable drug release device using polymeric films. The Proceedings of the Bioengineering Conference Annual Meeting of BED/JSME, 2016, 2016.28, _2G42-1_- _2G42-5_.	0.0	0
118	Drug and Cell Delivery Systems for Posterior Ocular Diseases. Membrane, 2020, 45, 240-244.	0.0	0
119	Electrochemical In-Situ Micropatterning of Cells and Polymers. IFMBE Proceedings, 2009, , 2173-2176.	0.2	0
120	Development of Cell Delivery System for the Subretinal Space Using Biodegradable Nanosheets. ECS Meeting Abstracts, 2020, MA2020-02, 2789-2789.	0.0	0
121	Development of a 3D Printed Refillable Drug Delivery Device for Sustained Release to the Retina. ECS Meeting Abstracts, 2020, MA2020-02, 3290-3290.	0.0	0
122	Development of a Microfluidic Device for Modeling Human Placenta. ECS Meeting Abstracts, 2020, MA2020-02, 3686-3686.	0.0	0
123	Realtime Transepithelial/Endothelial Electrical Resistance Measurements in Multiple Transwell Culture Inserts. ECS Meeting Abstracts, 2020, MA2020-02, 2794-2794.	0.0	0