Hiroyuki H Kitahata

List of Publications by Year
in descending order

139 papers	2,351 citations	236833 25 h-index	276775 41 g-index
145 all docs	145 docs citations	145 times ranked	1274 citing authors

#	Article	IF	Citations
1	Mode selection in the spontaneous motion of an alcohol droplet. Physical Review E, 2005, 71, 065301.	0.8	162
2	Physicochemical design and analysis of self-propelled objects that are characteristically sensitive to environments. Physical Chemistry Chemical Physics, 2015, 17, 10326-10338.	1.3	100
3	Convective and periodic motion driven by a chemical wave. Journal of Chemical Physics, 2002, 116, 5666-5672.	1.2	94
4	Quantitative Estimation of the Parameters for Self-Motion Driven by Difference in Surface Tension. Langmuir, 2014, 30, 8101-8108.	1.6	70
5	Drift instability in the motion of a fluid droplet with a chemically reactive surface driven by Marangoni flow. Physical Review E, 2012, 86, 016108.	0.8	69
6	Spontaneous motion of a droplet coupled with a chemical wave. Physical Review E, 2011, 84, 015101.	0.8	68
7	Self-motion of a camphor disk coupled with convection. Physical Chemistry Chemical Physics, 2004, 6, 2409.	1.3	62
8	Chemosensitive running droplet. Physical Review E, 2005, 72, 041603.	0.8	62
9	Mode-Switching of the Self-Motion of a Camphor Boat Depending on the Diffusion Distance of Camphor Molecules. Journal of Physical Chemistry C, 2010, 114, 9876-9882.	1.5	54
10	Oscillation and Synchronization in the Combustion of Candles. Journal of Physical Chemistry A, 2009, 113, 8164-8168.	1.1	53
11	Synchronized Sailing of Two Camphor Boats in Polygonal Chambers. Journal of Physical Chemistry B, 2005, 109, 1798-1802.	1.2	48
12	Mathematical modeling of frogsâ€™ calling behavior and its possible application to artificial life and robotics. Artificial Life and Robotics, 2008, 12, 29-32.	0.7	40
13	Chemo-mechanical energy transduction through interfacial instability. Physica D: Nonlinear Phenomena, 2005, 205, 283-291.	1.3	38
14	Spontaneous Deformation of an Oil Droplet Induced by the Cooperative Transport of Cationic and Anionic Surfactants through the Interface. Journal of Physical Chemistry B, 2009, 113, 15709-15714.	1.2	37
15	Suppression and Regeneration of Camphor-Driven Marangoni Flow with the Addition of Sodium Dodecyl Sulfate. Journal of Physical Chemistry B, 2012, 116, 992-996.	1.2	37
16	Spontaneous motion of an elliptic camphor particle. Physical Review E, 2013, 87, 010901.	0.8	37
17	Blebbing dynamics in an oil-water-surfactant system through the generation and destruction of a gel-like structure. Physical Review E, 2007, 76, 055202.	0.8	35
18	Liquid/liquid dynamic phase separation induced by a focused laser. Applied Physics Letters, 2003, 83, 2557-2559.	1.5	33

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19	Relationship between the size of a camphor-driven rotor and its angular velocity. Physical Review E, 2017, 96, 012609.	0.8	33
20	Unpinning of a spiral wave anchored around a circular obstacle by an external wave train: Common aspects of a chemical reaction and cardiomyocyte tissue. Chaos, 2009, 19, 043114.	1.0	31
21	Acceleration or deceleration of self-motion by the Marangoni effect. Chemical Physics Letters, 2016, 654, 92-96.	1.2	30
22	Effective diffusion coefficient including the Marangoni effect. Journal of Chemical Physics, 2018, 148, 134906.	1.2	30
23	Chemical Reaction-Inspired Crystal Growth of a Coordination Polymer toward Morphology Design and Control. Journal of the American Chemical Society, 2006, 128, 15799-15808.	6.6	29
24	Theoretical study on the translation and rotation of an elliptic camphor particle. Physica D: Nonlinear Phenomena, 2014, 272, 39-50.	1.3	28
25	Oscillatory motion of a camphor grain in a one-dimensional finite region. Physical Review E, 2016, 94, 042215.	0.8	28
26	Deformable Self-Propelled Micro-Object Comprising Underwater Oil Droplets. Scientific Reports, 2016, 6, 31292.	1.6	26
27	Synchronized motion of a mobile boundary driven by a camphor fragment. Journal of Colloid and Interface Science, 2004, 279, 503-508.	5.0	25
28	Microfreight Delivered by Chemical Waves. Journal of Physical Chemistry C, 2008, 112, 3032-3035.	1.5	25
29	Self-Propelled Motion of Monodisperse Underwater Oil Droplets Formed by a Microfluidic Device. Langmuir, 2017, 33, 5393-5397.	1.6	24
30	Dynamical blebbing at a droplet interface driven by instability in elastic stress: a novel self-motile system. Soft Matter, 2011, 7, 3204.	1.2	23
31	Spontaneous Motion of a Belousovâ€"Zhabotinsky Reaction Droplet Coupled with a Spiral Wave. Chemistry Letters, 2012, 41, 1052-1054.	0.7	23
32	Rotational motion of a droplet induced by interfacial tension. Physical Review E, 2013, 87, 013009.	0.8	23
33	Pulse-density modulation control of chemical oscillation far from equilibrium in a droplet open-reactor system. Nature Communications, 2016, 7, 10212.	5.8	23
34	Numerical and comparative threeâ€dimensional structural analysis of peripheral nerve fibres in epidermis of patients with atopic dermatitis. British Journal of Dermatology, 2016, 174, 191-194.	1.4	23
35	Mathematical Modeling of Calcium Waves Induced by Mechanical Stimulation in Keratinocytes. PLoS ONE, 2014, 9, e92650.	1.1	21
36	Experimental and theoretical studies on the self-motion of a phenanthroline disk coupled with complex formation. Physical Chemistry Chemical Physics, 2010, 12, 1557.	1.3	20

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37	Rotational motion of a camphor disk in a circular region. Physical Review E, 2019, 99, 022211.	0.8	20
38	Formation of a Multiscale Aggregate Structure through Spontaneous Blebbing of an Interface. Langmuir, 2012, 28, 3378-3384.	1.6	19
39	Mathematical model for calcium-assisted epidermal homeostasis. Journal of Theoretical Biology, 2016, 397, 52-60.	0.8	18
40	Period of Oscillatory Motion of a Camphor Boat Determined by the Dissolution and Diffusion of Camphor Molecules. Journal of Physical Chemistry B, 2018, 122, 2610-2615.	1.2	18
41	Multiple Autonomous Motions Synchronized with Complex Formation. Journal of Physical Chemistry B, 2003, 107, 10557-10559.	1.2	17
42	Survival versus collapse: Abrupt drop of excitability kills the traveling pulse, while gradual change results in adaptation. Physical Review E, 2007, 76, 016205.	0.8	17
43	High-aspect-ratio gold nanorods synthesized in a surfactant gel phase. Chemical Physics Letters, 2009, 467, 327-330.	1.2	17
44	Control of the Self-Motion of a Ruthenium-Catalyzed Belousovâ€"Zhabotinsky Droplet. Journal of Physical Chemistry C, 2012, 116, 26805-26809.	1.5	17
45	Elimination of a spiral wave pinned at an obstacle by a train of plane waves: Effect of diffusion between obstacles and surrounding media. Chaos, 2015, 25, 103127.	1.0	17
46	Large-scale on-off switching of genetic activity mediated by the folding-unfolding transition in a giant DNA molecule: An hypothesis. Physical Review E, 2008, 77, 031905.	0.8	16
47	Photoexcited Chemical Wave in the Ruthenium-Catalyzed Belousovâ€"Zhabotinsky Reaction. Journal of Physical Chemistry A, 2011, 115, 7406-7412.	1.1	16
48	Motion with Memory of a Self-Propelled Object. Journal of Physical Chemistry C, 2013, 117, 24490-24495.	1.5	16
49	Interaction of non-radially symmetric camphor particles. Physica D: Nonlinear Phenomena, 2018, 366, 10-26.	1.3	16
50	Dynamical Calling Behavior Experimentally Observed in Japanese Tree Frogs (Hyla japonica). IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences, 2007, E90-A, 2154-2161.	0.2	15
51	Distinguishing the Dynamic Fingerprints of Two- and Three-Dimensional Chemical Waves in Microbeads. Journal of Physical Chemistry A, 2018, 122, 1967-1971.	1.1	14
52	Interplay between epidermal stem cell dynamics and dermal deformation. Npj Computational Materials, 2018, 4, .	3.5	14
53	Effects of surfactant concentration on formation of high-aspect-ratio gold nanorods. Journal of Colloid and Interface Science, 2013, 407, 265-272.	5.0	13
54	Plastic bottle oscillator: Rhythmicity and mode bifurcation of fluid flow. American Journal of Physics, 2007, 75, 893-895.	0.3	12

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55	Mathematical model for self-propelled droplets driven by interfacial tension. Journal of Chemical Physics, 2016, 144, 114707.	1.2	12
56	Dynamic QRS-complex and ST-segment monitoring by continuous vectorcardiography during carotid endarterectomy â€. British Journal of Anaesthesia, 2003, 90, 142-147.	1.5	11
57	Oscillation of a water surface in contact with a fixed camphor disk. Chemical Physics Letters, 2008, 457, 254-258.	1.2	11
58	Homogenization of a phase-separated droplet in a polymer mixture caused by the dielectric effect of a laser. Physical Review E, 2008, 78, 060801.	0.8	11
59	Analysis of the growth process of gold nanorods with time-resolved observation. Physical Review E, 2009, 80, 020601.	0.8	11
60	Stationary pattern formation in a discrete excitable system with strong inhibitory coupling. Physical Review E, 2009, 79, 056203.	0.8	11
61	Relaxation dynamics of the Marangoni convection roll structure induced by camphor concentration gradient. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2017, 520, 436-441.	2.3	11
62	Power law observed in the motion of an asymmetric camphor boat under viscous conditions. Physical Review E, 2018, 98, 022606.	0.8	11
63	Dynamical phase separation under laser scanning. Chemical Physics Letters, 2005, 402, 529-534.	1.2	10
64	Propagation of Photosensitive Chemical Waves on the Circular Routes. Journal of Physical Chemistry A, 2005, 109, 4973-4978.	1.1	10
65	Oscillation of a rotating levitated droplet: Analysis with a mechanical model. Physical Review E, 2015, 92, 062904.	0.8	10
66	Hydrodynamic collective effects of active proteins in biological membranes. Physical Review E, 2016, 94, 022416.	0.8	10
67	Reciprocating Motion of a Self-Propelled Rotor Induced by Forced Halt and Release Operations. Journal of Physical Chemistry C, 2018, 122, 3482-3487.	1.5	10
68	Two Floating Camphor Particles Interacting through the Lateral Capillary Force. Journal of the Physical Society of Japan, 2020, 89, 074004.	0.7	10
69	Imperfect bifurcation in the rotation of a propeller-shaped camphor rotor. Physical Review E, 2021, 103, 012202.	0.8	10
70	Spontaneous Motion of a Camphor Particle with a Triangular Modification from a Circle. Journal of the Physical Society of Japan, 2020, 89, .	0.7	10
71	The Influence of a gradient static magnetic field on an unstirred Belousovâ€"Zhabotinsky reaction. Bioelectromagnetics, 2008, 29, 598-604.	0.9	9
72	Growth of gold nanorods in gelled surfactant solutions. Journal of Colloid and Interface Science, 2011, 356, 111-117.	5.0	9

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73	Frontiers in epidermal barrier homeostasis â€“ an approach to mathematical modelling of epidermal calcium dynamics. Experimental Dermatology, 2014, 23, 79-82.	1.4	9
74	Effect of gold nanoparticles on chemical oscillators: A comparative study of the experimental and simulated results. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2014, 460, 236-239.	2.3	9
75	General criteria for determining rotation or oscillation in a two-dimensional axisymmetric system. Journal of Chemical Physics, 2015, 143, 014117.	1.2	9
76	Selection of the Rotation Direction for a Camphor Disk Resulting from Chiral Asymmetry of a Water Chamber. Journal of Physical Chemistry B, 2016, 120, 9166-9172.	1.2	9
77	Mechanism of Spontaneous Blebbing Motion of an Oilâ€“Water Interface: Elastic Stress Generated by a Lamellarâ€“Lamellar Transition. Langmuir, 2016, 32, 2891-2899.	1.6	9
78	Start of Micrometer-Sized Oil Droplet Motion through Generation of Surfactants. Langmuir, 2019, 35, 13351-13355.	1.6	9
79	Chemically artificial rovers based on self-propelled droplets in micrometer-scale environment. Current Opinion in Colloid and Interface Science, 2020, 49, 60-68.	3.4	9
80	Rhythmic bursting in a cluster of microbeads driven by a continuous-wave laser beam. Physical Review E, 2002, 65, 045202.	0.8	8
81	Slowing and Stopping of Chemical Waves in a Narrowing Canal. Journal of Physical Chemistry B, 2004, 108, 18956-18959.	1.2	8
82	Interactive Propagation of Photosensitive Chemical Waves on Two Circular Routes. Journal of Physical Chemistry A, 2006, 110, 3633-3637.	1.1	8
83	Oscillation in Penetration Distance in a Train of Chemical Pulses Propagating in an Optically Constrained Narrowing Channel. Journal of Physical Chemistry A, 2009, 113, 10405-10409.	1.1	8
84	Delayed Response of Interfacial Tension in Propagating Chemical Waves of the Belousovâ€“Zhabotinsky Reaction without Stirring. Journal of Physical Chemistry B, 2013, 117, 13893-13898.	1.2	8
85	Spontaneous deformation and fission of oil droplets on an aqueous surfactant solution. Physical Review E, 2020, 102, 042603.	0.8	8
86	Chemical Resonance, Beats, and Frequency Locking in Forced Chemical Oscillatory Systems. Journal of Physical Chemistry Letters, 2020, 11, 3014-3019.	2.1	8
87	Change in the Mode of Spontaneous Motion of an Alcohol Droplet Caused by a Temperature Change. Progress of Theoretical Physics Supplement, 2006, 161, 286-289.	0.2	7
88	Spontaneous Motion of a Droplet Coupled with Chemical Reaction. Progress of Theoretical Physics Supplement, 2006, 161, 220-223.	0.2	7
89	Rhythmic oscillation and dynamic instability of micrometer-size phase separation under continuous photon flux by a focused laser. Physical Review E, 2008, 78, 046214.	0.8	7
90	Mathematical analysis of intercellular calcium propagation induced by adenosine triphosphate. Skin Research and Technology, 2010, 16, 146-150.	0.8	7

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91	Coexistence of Wave Propagation and Oscillation in the Photosensitive Belousovâ^'Zhabotinsky Reaction on a Circular Route. Journal of Physical Chemistry A, 2006, 110, 13475-13478.	1.1	6
92	Synchronized motion of the water surfaces around two fixed camphor disks. Journal of Colloid and Interface Science, 2010, 351, 299-303.	5.0	6
93	Phase-separated binary polymers spin coated onto microwrinkles. RSC Advances, 2012, 2, 2395.	1.7	6
94	Effects of medium flow on axon growth with or without nerve growth factor. Biochemical and Biophysical Research Communications, 2015, 465, 26-29.	1.0	6
95	Hydrodynamic Effects in Oscillatory Active Nematics. Journal of the Physical Society of Japan, 2017, 86, 101013.	0.7	6
96	Bifurcation in the angular velocity of a circular disk propelled by symmetrically distributed camphor pills. Chaos, 2019, 29, 013125.	1.0	6
97	Diffusion enhancement in a levitated droplet via oscillatory deformation. Physical Review E, 2020, 102, 033109.	0.8	6
98	Collagen XVII deficiency alters epidermal patterning. Laboratory Investigation, 2022, 102, 581-588.	1.7	6
99	Mode bifurcation by pouring water into a cup. Journal of Chemical Physics, 2003, 119, 4811-4816.	1.2	5
100	Phase Wave between Two Oscillators in the Photosensitive Belousovâ^'Zhabotinsky Reaction Depending on the Difference in the Illumination Time. Journal of Physical Chemistry A, 2010, 114, 9124-9129.	1.1	5
101	Plastic bottle oscillator as an on-off-type oscillator: Experiments, modeling, and stability analyses of single and coupled systems. Physical Review E, 2012, 85, 026204.	0.8	5
102	Dynamics of Droplets. , 2013, , 85-118.		5
103	Transient Reciprocating Motion of a Self-Propelled Object Controlled by a Molecular Layer of a <i>N</i>-Stearoyl-<i>p</i>-nitroaniline: Dependence on the Temperature of an Aqueous Phase. Journal of Physical Chemistry C, 2014, 118, 14888-14893.	1.5	5
104	Achilles' heel of a traveling pulse subject to a local external stimulus. Physical Review E, 2017, 95, 062209.	0.8	5
105	Inversion probability of three-bladed self-propelled rotors after forced stops of different durations. Physical Chemistry Chemical Physics, 2020, 22, 13123-13128.	1.3	5
106	On a simple model that explains inversion of a self-propelled rotor under periodic stop-and-release-operations. Chaos, 2020, 30, 023105.	1.0	5
107	Fabrication of Microparticles with Frontâ€"Back Asymmetric Shapes Using Anisotropic Gelation. Micromachines, 2021, 12, 1121.	1.4	5
108	Self-propelled camphor disk dependent on the depth of the sodium dodecyl sulfate aqueous phase. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2022, 635, 128087.	2.3	5

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109	Mode-switching in the flow of water into a cup. Chemical Physics Letters, 2002, 351, 379-384.	1.2	4
110	Spatio-temporal pattern formation with oscillatory chemical reaction and continuous photon flux on a micrometre scale. Journal of Physics Condensed Matter, 2005, 17, S4239-S4248.	0.7	4
111	Effect of a Gradient Static Magnetic Field on an Unstirred Belousovâ^'Zhabotinsky Reaction by Changing the Thickness of the Medium. Journal of Physical Chemistry A, 2009, 113, 3061-3067.	1.1	4
112	Control of the Long-axis Length of Gold Nanorods through Temperature Variation. Chemistry Letters, 2012, 41, 1173-1175.	0.7	4
113	Characteristic Features in the Collision of Chemical Waves Depending on the Aspect Ratio of a Rectangular Field. Journal of Physical Chemistry A, 2007, 111, 5833-5838.	1.1	3
114	Chemical Wave Propagation Preserved on an Inhibitory Field in the Ruthenium-Catalyzed Belousovâ€"Zhabotinsky Reaction. Journal of Physical Chemistry A, 2013, 117, 10615-10618.	1.1	3
115	Modulation of the shape and speed of a chemical wave in an unstirred Belousovâ€"Zhabotinsky reaction by a rotating magnet. Bioelectromagnetics, 2013, 34, 220-230.	0.9	3
116	Model for calcium-mediated reduction of structural fluctuations in epidermis. Physical Review E, 2015, 92, 022709.	0.8	3
117	Coupling Between a Chemical Wave and Motion in a Belousov- Zhabotinsky Droplet. Current Physical Chemistry, 2015, 5, 82-90.	0.1	3
118	Response of a chemical wave to local pulse irradiation in the ruthenium-catalyzed Belousovâ€"Zhabotinsky reaction. Physical Chemistry Chemical Physics, 2015, 17, 9148-9152.	1.3	3
119	Experimental and theoretical approach for the clustering of globally coupled density oscillators based on phase response. Physical Review E, 2016, 93, 012212.	0.8	3
120	Unidirectional motion of a camphor disk on water forced by interactions between surface camphor concentration and dynamically changing boundaries. Physical Chemistry Chemical Physics, 2017, 19, 18767-18772.	1.3	3
121	Sustained dynamics of a weakly excitable system with nonlocal interactions. Physical Review E, 2017, 96, 022213.	0.8	3
122	Traveling waves propagating through coupled microbeads in the Belousovâ€"Zhabotinsky reaction. Physical Chemistry Chemical Physics, 2021, 23, 24175-24179.	1.3	3
123	Spontaneous rhythmic motion of a polymer chain in a continuous-wave laser field. Physical Review E, 2004, 70, 021910.	0.8	2
124	Gelation Effect on the Synthesis of High-Aspect-Ratio Gold Nanorods. Journal of Nanoscience and Nanotechnology, 2012, 12, 714-718.	0.9	2
125	Size distribution of cell pattern observed in gravitational instability. Physical Review E, 2013, 87, 012903.	0.8	2
126	Mathematical approach to unpinning of spiral waves anchored to an obstacle with high-frequency pacing. Biophysics and Physicobiology, 2018, 15, 196-203.	0.5	2

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127	Bifurcation analysis of a density oscillator using two-dimensional hydrodynamic simulation. Physical Review E, 2020, 101, 042216.	0.8	2
128	Rigid-body Rotation or Director Rotation? The Direct Observation Gave the Answer to the Question. JPSJ News and Comments, 2019, 16, 10.	0.2	2
129	Mode-bifurcation upon pouring water into a cup that depends on the shape of the cup. Physics Letters, Section A: General, Atomic and Solid State Physics, 2005, 339, 45-51.	0.9	1
130	Emergence of Superstructures from a Homogeneous Lipid Sphere. Journal of Physical Chemistry B, 2009, 113, 3264-3268.	1.2	1
131	Spontaneous Recurrence of Deposition and Dissolution of a Solid Layer on a Solution Surface. Journal of Physical Chemistry B, 2015, 119, 9970-9974.	1.2	1
132	Local bifurcation structure of a bouncing ball system with a piecewise polynomial function for table displacement. Chaos, 2020, 30, 083128.	1.0	1
133	Self-Propelled Motion of the Camphor Float With n-Fold Rotational Symmetry. Frontiers in Physics, 2022, 10, .	1.0	1
134	Convective flow driven by chemical reaction. AIP Conference Proceedings, 2004, , .	0.3	0
135	Spiral Waves Pinned to a Defect on Excitable Media: Toward Effective Defibrillators. Seibutsu Butsuri, 2017, 57, 191-195.	0.0	0
136	Insights into Active Matter from Coupled Oscillators. JPSJ News and Comments, 2017, 14, 12.	0.2	0
137	Spontaneous Motion of the Oil-water Interface Induced by the Generation of Surfactant Aggregates. Hamon, 2014, 24, 244-249.	0.0	0
138	From Camphor Particles Motion to Quorum Sensing of Living Organisms. JPSJ News and Comments, 2019, 16, 14.	0.2	0
139	Bifurcation structure of the flame oscillation. Physical Review E, 2022, 105, 044208.	0.8	0