Kazuhiko Seki

List of Publications by Year
in descending order

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129 papers	3,986 citations	201575 27 h-index	133188 59 g-index
132 all docs	132 docs citations	132 times ranked	4244 citing authors

#	Article	IF	Citations
1	Photocatalytic water splitting with a quantum efficiency of almost unity. Nature, 2020, 581, 411-414.	13.7	1,227
2	Particulate Photocatalyst Sheets Based on Carbon Conductor Layer for Efficient Z-Scheme Pure-Water Splitting at Ambient Pressure. Journal of the American Chemical Society, 2017, 139, 1675-1683.	6.6	322
3	Fractional reaction-diffusion equation. Journal of Chemical Physics, 2003, 119, 2165-2170.	1.2	166
4	Theory of bulk electron-hole recombination in a medium with energetic disorder. Physical Review B, 2010, 82, .	1.1	91
5	Durable hydrogen evolution from water driven by sunlight using (Ag,Cu)GaSe₂ photocathodes modified with CdS and CuGa₃Se₅. Chemical Science, 2015, 6, 894-901.	3.7	89
6	Ta₃N₅-Nanorods enabling highly efficient water oxidation via advantageous light harvesting and charge collection. Energy and Environmental Science, 2020, 13, 1519-1530.	15.6	80
7	Transparent Ta₃N₅ Photoanodes for Efficient Oxygen Evolution toward the Development of Tandem Cells. Angewandte Chemie - International Edition, 2019, 58, 2300-2304.	7.2	75
8	Recombination kinetics in subdiffusive media. Journal of Chemical Physics, 2003, 119, 7525-7533.	1.2	70
9	Trapped State Sensitive Kinetics in LaTiO₂N Solid Photocatalyst with and without Cocatalyst Loading. Journal of the American Chemical Society, 2014, 136, 17324-17331.	6.6	70
10	Stochastic resonance driven by Gaussian multiplicative noise. Europhysics Letters, 1997, 40, 117-122.	0.7	69
11	Periodically driven linear system with multiplicative colored noise. Physical Review E, 1998, 57, 6555-6563.	0.8	68
12	Solvent Effects in Nonadiabatic Electron-Transfer Reactions: Theoretical Aspects. Advances in Chemical Physics, 2003, , 511-616.	0.3	64
13	Development of a Coreâ€“Shell Heterojunction Ta₃N₅-Nanorods/BaTaO₂N Photoanode for Solar Water Splitting. ACS Energy Letters, 2020, 5, 2492-2497.	8.8	58
14	Origin of the overall water splitting activity of Ta₃N₅ revealed by ultrafast transient absorption spectroscopy. Chemical Science, 2019, 10, 5353-5362.	3.7	57
15	Revealing the role of the Rh valence state, La doping level and Ru cocatalyst in determining the H₂ evolution efficiency in doped SrTiO₃ photocatalysts. Sustainable Energy and Fuels, 2019, 3, 208-218.	2.5	56
16	Diffusion Constant of a Polymer Chain in Biomembranes. Journal De Physique II, 1995, 5, 5-9.	0.9	47
17	Kinetics of diffusion-assisted reactions in microheterogeneous systems. Advances in Colloid and Interface Science, 2001, 89-90, 47-140.	7.0	46
18	Electric field dependence of charge mobility in energetically disordered materials: Polaron aspects. Physical Review B, 2001, 65, .	1.1	45

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19	Kinetics of Photoinduced Hydrophilic Conversion Processes of TiO2Surfaces. Journal of Physical Chemistry B, 2004, 108, 4806-4810.	1.2	42
20	Rational Interpretation of Correlated Kinetics of Mobile and Trapped Charge Carriers: Analysis of Ultrafast Carrier Dynamics in BiVO4. Journal of Physical Chemistry C, 2017, 121, 19044-19052.	1.5	39
21	Relationship between entropy and diffusion: A statistical mechanical derivation of Rosenfeld expression for a rugged energy landscape. Journal of Chemical Physics, 2015, 143, 194110.	1.2	37
22	Diffusion-assisted long-range reactions in confined systems: Projection operator approach. Journal of Chemical Physics, 1999, 110, 7639-7649.	1.2	36
23	Photoanodic and photocathodic behaviour of La₅Ti₂CuS₅O₇ electrodes in the water splitting reaction. Chemical Science, 2015, 6, 4513-4518.	3.7	36
24	Molecular dynamics study of crystallization of polymer systems confined in small nanodomains. Physical Review E, 2007, 75, 031804.	0.8	33
25	Brownian motion of spins revisited. Journal of Chemical Physics, 1998, 108, 7052-7059.	1.2	31
26	Probing fundamental losses in nanostructured Ta₃N₅ photoanodes: design principles for efficient water oxidation. Energy and Environmental Science, 2021, 14, 4038-4047.	15.6	31
27	Unveiling charge dynamics of visible light absorbing oxysulfide for efficient overall water splitting. Nature Communications, 2021, 12, 7055.	5.8	31
28	Dynamical fluctuations of spherically closed fluid membranes. Physica A: Statistical Mechanics and Its Applications, 1993, 192, 27-46.	1.2	30
29	Dynamics of a polymer chain confined in a membrane. European Physical Journal E, 2011, 34, 46.	0.7	29
30	Diffusion on a rugged energy landscape with spatial correlations. Journal of Chemical Physics, 2014, 141, 124105.	1.2	27
31	Diffusion Influenced Adsorption Kinetics. Journal of Physical Chemistry B, 2015, 119, 10954-10961.	1.2	27
32	Brownian dynamics in a thin sheet with momentum decay. Physical Review E, 1993, 47, 2377-2383.	0.8	26
33	Kinetics of Distance-Dependent Recombination between Geminate Charge Carriers by Diffusion under Coulomb Interaction. Journal of Physical Chemistry C, 2015, 119, 5364-5373.	1.5	26
34	Drag coefficient of a liquid domain in a two-dimensional membrane. European Physical Journal E, 2010, 31, 303-310.	0.7	25
35	Equivalent circuit representation of hysteresis in solar cells that considers interface charge accumulation: Potential cause of hysteresis in perovskite solar cells. Applied Physics Letters, 2016, 109, .	1.5	23
36	Growth mechanisms of silica glasses using the liquid phase deposition (LPD). Journal of Non-Crystalline Solids, 1992, 151, 102-108.	1.5	22

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37	Unified explanation of the fluorescence decay and blinking characteristics of semiconductor nanocrystals. Applied Physics Letters, 2009, 94, 081104.	1.5	22
38	Theoretical limit of power conversion efficiency for organic and hybrid halide perovskite photovoltaics. Japanese Journal of Applied Physics, 2015, 54, 08KF04.	0.8	22
39	Theory of Diffusion-Assisted Reactions on Micelle Surfaces:â€‰ Photoinduced Electron Transfer Followed by Back Transfer. Journal of Physical Chemistry B, 1999, 103, 9156-9160.	1.2	21
40	Concentration fluctuations in binary fluid membranes. Journal of Physics Condensed Matter, 2007, 19, 072101.	0.7	21
41	Diffusion coefficient of an inclusion in a liquid membrane supported by a solvent of arbitrary thickness. Physical Review E, 2011, 84, 021905.	0.8	21
42	Formation of Hydroxyapatite Skeletal Materials from Hydrogel Matrices via Artificial Biomineralization. Journal of Physical Chemistry B, 2015, 119, 8793-8799.	1.2	21
43	Geminate electron-hole recombination in organic photovoltaic cells. A semi-empirical theory. Journal of Chemical Physics, 2017, 146, 054101.	1.2	20
44	Hydrodynamic effects on concentration fluctuations in multicomponent membranes. Soft Matter, 2011, 7, 1524.	1.2	19
45	Viscoelasticity of vesicle dispersions. Physica A: Statistical Mechanics and Its Applications, 1995, 219, 253-289.	1.2	18
46	Rigorous calculation of electric field effects on the free energy change of the electron transfer reaction. Journal of Chemical Physics, 2003, 118, 669-679.	1.2	18
47	Energy Gap Law of Electron Transfer in Nonpolar Solvents. Journal of Physical Chemistry A, 2007, 111, 9553-9559.	1.1	18
48	Plate-like Sm₂Ti₂S₂O₅ Particles Prepared by a Flux-Assisted One-Step Synthesis for the Evolution of O₂ from Aqueous Solutions by Both Photocatalytic and Photoelectrochemical Reactions. Journal of Physical Chemistry C, 2018, 122, 13492-13499.	1.5	18
49	Enhancement of Charge Separation and Hydrogen Evolution on Particulate La₅Ti₂CuS₅O₇ Photocathodes by Surface Modification. Journal of Physical Chemistry Letters, 2017, 8, 375-379.	2.1	17
50	Effects of excluded volume interaction and dimensionality on diffusion-mediated reactions. Journal of Chemical Physics, 2011, 134, 094506.	1.2	16
51	Anomalous lateral diffusion in a viscous membrane surrounded by viscoelastic media. Europhysics Letters, 2012, 97, 68007.	0.7	16
52	Diffusion-assisted long-range reaction between the ends of a polymer: Effective sink approximation. Journal of Chemical Physics, 2002, 117, 1377-1384.	1.2	15
53	Dispersive photoluminescence decay by geminate recombination in amorphous semiconductors. Physical Review B, 2005, 71, .	1.1	15
54	Specific features of the kinetics of fractional-diffusion assisted geminate reactions. Journal of Physics Condensed Matter, 2007, 19, 065117.	0.7	14

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55	Orientational relaxation in a dispersive dynamic medium: Generalization of the Kubo-Ivanov-Anderson jump-diffusion model to include fractional environmental dynamics. Physical Review E, 2008, 77, 031505.	0.8	14
56	Detailed balance limit of power conversion efficiency for organic photovoltaics. Applied Physics Letters, 2013, 103, .	1.5	14
57	Diffusion coefficients in leaflets of bilayer membranes. Physical Review E, 2014, 89, 022713.	0.8	13
58	Diffusion-Mediated Delayed Fluorescence by Singlet Fission and Geminate Fusion of Correlated Triplets. Journal of Physical Chemistry C, 2018, 122, 11659-11670.	1.5	13
59	Theoretical analysis of the influence of stochastic gating on the transient effect in fluorescence quenching by electron transfer. Journal of Chemical Physics, 2000, 112, 2849-2862.	1.2	11
60	Bulk Recombination in Organic Bulk Heterojunction Solar Cells under Continuous and Pulsed Light Irradiation. Applied Physics Express, 2013, 6, 051603.	1.1	11
61	Anomalous dimensionality dependence of diffusion in a rugged energy landscape: How pathological is one dimension?. Journal of Chemical Physics, 2016, 144, 194106.	1.2	11
62	Rationalizing long-lived photo-excited carriers in photocatalyst (La5Ti2CuS5O7) in terms of one-dimensional carrier transport. Chemical Physics, 2016, 476, 9-16.	0.9	11
63	Theoretical perspective of performance-limiting parameters of Cu(In_{1â^'x}Ga_x)Se₂-based photocathodes. Journal of Materials Chemistry A, 2020, 8, 9194-9201.	5.2	11
64	The sputter-based synthesis of tantalum oxynitride nanoparticles with architecture and bandgap controlled by design. Applied Surface Science, 2021, 559, 149974.	3.1	11
65	Simulation study of the order formation dynamics in the melt crystallization of flexible chain molecules induced by rigid molecular nuclei. Journal of Chemical Physics, 2003, 119, 6354-6360.	1.2	10
66	Dispersive-diffusion-controlled distance-dependent recombination in amorphous semiconductors. Journal of Chemical Physics, 2006, 124, 044702.	1.2	10
67	Simulation Study of the Effect of the Side-Chain Structure on the Initial Nucleation Process of Polythiophene Derivatives. Journal of Physical Chemistry B, 2017, 121, 1108-1117.	1.2	10
68	Direct Aqueous Dispersion of Carbon Nanotubes Using Nanoparticle-Formed Fullerenes and Self-Assembled Formation of p/n Heterojunctions with Polythiophene. ACS Omega, 2017, 2, 1625-1632.	1.6	10
69	Sensitivity to initial conditions in stochastic systems. Physical Review E, 1993, 47, 155-163.	0.8	9
70	Reaction under vacancy-assisted diffusion at high quencher concentration. Physical Review E, 2009, 80, 041120.	0.8	9
71	Overall current-voltage characteristics of space charge controlled currents for thin films by a single carrier species. Journal of Applied Physics, 2014, 116, 063716.	1.1	9
72	Transparent Ta₃N₅ Photoanodes for Efficient Oxygen Evolution toward the Development of Tandem Cells. Angewandte Chemie, 2019, 131, 2322-2326.	1.6	9

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73	Simulation Study of the Effects of Nanoporous Structures on Mechanical Properties at Polymerâ€“Metal Interfaces. Journal of Physical Chemistry B, 2019, 123, 1161-1170.	1.2	9
74	Quantifying the spreading resistance of an anisotropic thin film conductor. Scientific Reports, 2020, 10, 10633.	1.6	9
75	On the Spatial Correlations in Nonequilibrium Systems. Journal of the Physical Society of Japan, 1990, 59, 2309-2311.	0.7	8
76	Transition from distributional to ergodic behavior in an inhomogeneous diffusion process: Method revealing an unknown surface diffusivity. Physical Review E, 2015, 92, 022114.	0.8	8
77	Diffusion-assisted reaction through a fluctuating bottleneck. Journal of Chemical Physics, 2000, 113, 3441-3446.	1.2	7
78	Dynamics of Barrierless and Activated Chemical Reactions in a Dispersive Medium within the Fractional Diffusion Equation Approach. Journal of Physical Chemistry B, 2008, 112, 6107-6113.	1.2	7
79	Nonequilibrium thermodynamic study of magnetization dynamics in the presence of spin-transfer torque. Physical Review B, 2008, 78, .	1.1	7
80	Theory of antibunching of photon emission I. Journal of Chemical Physics, 2009, 130, 024706.	1.2	7
81	Lateral Dynamics in Polymer-Supported Membranes. Materials, 2012, 5, 1923-1932.	1.3	7
82	Coilâ€“globule transition of a polymer involved in excluded-volume interactions with macromolecules. Journal of Chemical Physics, 2015, 143, 134903.	1.2	7
83	Thermoelectrochemical Cells Based on Ferricyanide/Ferrocyanide/Guanidinium: Application and Challenges. ACS Applied Materials & Interfaces, 2022, , .	4.0	7
84	Diffusion-mediated geminate reactions under excluded volume interactions. Physical Review E, 2012, 85, 011131.	0.8	6
85	Electric Field-Assisted Dissociation Yield of Bound Charge Pairs in Low Permittivity Materials. Journal of Physical Chemistry C, 2017, 121, 3632-3641.	1.5	6
86	Transient Absorption Spectroscopy Reveals Performance-Limiting Factors in a Narrow-Bandgap Oxysulfide La₅(Ti_{0.99}Mg_{0.01})₂CuS₅O_{6.99} Photocatalyst for H₂ Generation. Journal of Physical Chemistry C, 2019, 123, 14246-14252.	1.5	6
87	Geminate Delayed Fluorescence by Anisotropic Diffusion-Mediated Reversible Singlet Fission and Triplet Fusion. Journal of Physical Chemistry C, 2021, 125, 3295-3304.	1.5	6
88	Relative spatial diffusion in turbulent media. Physica A: Statistical Mechanics and Its Applications, 1994, 209, 369-384.	1.2	5
89	Microscopic reversibility of the rate constants given by the generalized Marcus equation. Chemical Physics Letters, 1995, 243, 330-333.	1.2	5
90	A Theoretical Method to Analyze Diffusion of Probe Molecules in Nanostructured Fluids by Fluorescence Correlation Spectroscopy. Journal of Physical Chemistry A, 2005, 109, 2421-2427.	1.1	5

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91	Molecular dynamics study of the effects of chain properties on the order formation dynamics of self-assembled monolayers of long-chain molecules. Physical Review E, 2010, 81, 021801.	0.8	5
92	Ring formation by competition between entropic effect and thermophoresis. Soft Matter, 2012, 8, 6775.	1.2	5
93	Design Predictions of nâ€“n Heterojunction Based Photoanode for Efficient Unbiased Overall Solar Water Splitting. Energy Technology, 2022, 10, 2100570.	1.8	5
94	Insight into the effect of the configuration entropy of additives on the Seebeck coefficient. Physical Chemistry Chemical Physics, 2021, 23, 14803-14810.	1.3	5
95	Fabrication of layer-by-layer graphene oxide thin film on copper substrate by electrophoretic deposition. Japanese Journal of Applied Physics, 2020, 59, 125001.	0.8	5
96	Theory of Diffusion-Assisted Reactions on Micelle Surfaces:Â Exact Results and Approximations for the Kinetics of Reactions between Neutral Species. Journal of Physical Chemistry B, 1999, 103, 6881-6885.	1.2	4
97	Theoretical model based on the memory effect for the strange photoisomerization kinetics of diarylethene derivatives dispersed on polymer films. Journal of Chemical Physics, 2007, 126, 044904.	1.2	4
98	Effects of surface affinity on the ordering dynamics of self-assembled monolayers of chain molecules: Transition from a parallel to a perpendicular structure. Physical Review E, 2015, 91, 052604.	0.8	4
99	Subdiffusion-assisted reaction kinetics in disordered media. Journal of Physics Condensed Matter, 2007, 19, 065116.	0.7	3
100	Temperature scaling of effective polaron mobility in energetically disordered media. Journal of Chemical Physics, 2016, 145, 034106.	1.2	3
101	Scaling theory for two-dimensional single domain growth driven by attachment of diffusing adsorbates. New Journal of Physics, 2019, 21, 093059.	1.2	3
102	Charge Transport in Disordered Organic Solids: Refining the BÃssler Equation with High-Precision Simulation Results. Journal of Physical Chemistry C, 2020, 124, 17879-17888.	1.5	3
103	An exact solution in the theory of fluorescence resonance energy transfer with vibrational relaxation. Journal of Chemical Physics, 2021, 154, 134104.	1.2	3
104	Spatial correlations in reaction-diffusion systems in nonequilibrium conditions. Journal of Molecular Liquids, 1995, 65-66, 293-296.	2.3	2
105	Photo-driven directional motion of droplets on the surface of a liquid crystal doped with photochromic azobenzene: theory. Journal of Physics Condensed Matter, 2005, 17, S4229-S4237.	0.7	2
106	Theory of antibunching of photon emission II. Journal of Chemical Physics, 2009, 130, 194507.	1.2	2
107	Photoisomerization kinetics in solid states: Origin of induction period. Chemical Physics Letters, 2010, 495, 218-221.	1.2	2
108	Viscoelasticity of two-layer vesicles in solution. Physical Review E, 2012, 86, 061401.	0.8	2

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109	Site Blocking Effect on Diffusion-Mediated Reactions in Porous Media. Journal of Physical Chemistry C, 2012, 116, 22086-22093.	1.5	2
110	Dynamics of Heterogeneity in Fluid Membranes. Behavior Research Methods, 2012, , 129-164.	2.3	2
111	Growth kinetics of circular liquid domains on vesicles by diffusion-controlled coalescence. Journal of Physics Condensed Matter, 2013, 25, 195105.	0.7	2
112	Effect of energetic disorder on the open-circuit voltage in organic bulk heterojunction composites. Japanese Journal of Applied Physics, 2014, 53, 01AB13.	0.8	2
113	Theoretical Limits of Power Conversion Efficiency for Organic Photovoltaic Cells. Hyomen Kagaku, 2014, 35, 595-602.	0.0	2
114	Possible influence of the Kuramoto length in a photo-catalytic water splitting reaction revealed by Poissonâ€“Nernstâ€“Planck equations involving ionization in a weak electrolyte. Chemical Physics, 2018, 502, 39-49.	0.9	2
115	Jellium Edge and Size Effect of Chemical Potential and Surface Energy in Metal Slabs. Journal of the Physical Society of Japan, 2018, 87, 124707.	0.7	2
116	Determining interfacial resistance in thermoelectrochemical cells using transmission line measurement. Applied Physics Letters, 2021, 118, .	1.5	2
117	Quantifying the spreading currents over the circular contact region in a good conducting cover layer on a substrate. Journal Physics D: Applied Physics, 2020, 53, 435103.	1.3	2
118	Reorientational dynamics of an electric dipole in fluctuating electric fields. Journal of Chemical Physics, 1996, 105, 4274-4283.	1.2	1
119	Motional narrowing under Markovian and non-Markovian hopping transitions in inhomogeneous broadened absorption line shape. Physical Review E, 2019, 99, 052115.	0.8	1
120	Effective constriction resistance for isotropic and anisotropic film conductors. Journal Physics D: Applied Physics, 2021, 54, 195302.	1.3	1
121	On the definition of the domain growth-rate constant on a two-dimensional substrate. Journal of Crystal Growth, 2021, 570, 126222.	0.7	1
122	Theoretical study of spreading resistance using anisotropic conductivity parameters for graphene: a comparative study against conventional isotropic conductors. Japanese Journal of Applied Physics, 2021, 60, 015503.	0.8	1
123	Spatial correlations in reaction-diffusion systems in nonequilibrium conditions. Studies in Physical and Theoretical Chemistry, 1995, 83, 293-296.	0.0	0
124	Mean field theory of viscoelasticity of nondilute vesicle dispersions. AIP Conference Proceedings, 2000, , .	0.3	0
125	Theoretical study on photon emission statistics from single conjugated polymer molecules excited by laser pulses. Synthetic Metals, 2009, 159, 769-772.	2.1	0
126	Response to â€œComment on â€˜Detailed balance limit of power conversion efficiency for organic photovoltaicsâ€™â€•[Appl. Phys. Lett. 104, 146101 (2014)]. Applied Physics Letters, 2014, 104, 146102.	1.5	0

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127	Transition from Reaction- to Diffusion-Limited Growth of Graphene by Chemical Vapor Deposition. Crystal Growth and Design, 0, , .	1.4	0
128	Local charge carrier dynamics of a particulate Ga-doped La₅Ti₂Cu_{0.9}Ag_{0.1}O₇S₅ photocatalyst and the impact of Rh cocatalysts. Physical Chemistry Chemical Physics, 0, , .	1.3	0
129	Thickness optimization of the output power and effective thermoelectric figure of merit of thin thermoelectric generator. Japanese Journal of Applied Physics, 2022, 61, 080903.	0.8	0