Ko Okumura

List of Publications by Year
in descending order

101 papers	2,997 citations	218381 26 h-index	161609 54 g-index
105 all docs	105 docs citations	105 times ranked	2378 citing authors

#	Article	IF	Citations
1	Mechanoelectric effects in ionic gels. Europhysics Letters, 2000, 50, 513-518.	0.7	302
2	Water spring: A model for bouncing drops. Europhysics Letters, 2003, 62, 237-243.	0.7	227
3	Wetting transitions on rough surfaces. Europhysics Letters, 2004, 68, 419-425.	0.7	221
4	Wicking within forests of micropillars. Europhysics Letters, 2007, 79, 56005.	0.7	177
5	Why is nacre strong? Elastic theory and fracture mechanics for biocomposites with stratified structures. European Physical Journal E, 2001, 4, 121-127.	0.7	170
6	Femtosecond two-dimensional spectroscopy from anharmonic vibrational modes of molecules in the condensed phase. Journal of Chemical Physics, 1997, 107, 2267-2283.	1.2	140
7	Wetting transitions on textured hydrophilic surfaces. European Physical Journal E, 2008, 25, 415-424.	0.7	113
8	Initial rigid response and softening transition of highly stretchable kirigami sheet materials. Scientific Reports, 2016, 6, 24758.	1.6	111
9	The (2n+1)th-order off-resonant spectroscopy from the (n+1)th-order anharmonicities of molecular vibrational modes in the condensed phase. Journal of Chemical Physics, 1997, 106, 1687-1698.	1.2	100
10	Structural information from two-dimensional fifth-order Raman spectroscopy. Journal of Chemical Physics, 1999, 111, 492-503.	1.2	73
11	Coherent two-dimensional Raman scattering: Frequency-domain measurement of the intra- and intermolecular vibrational interactions. Journal of Chemical Physics, 1998, 108, 1326-1334.	1.2	71
12	Simple Model for the Mechanics of Spider Webs. Physical Review Letters, 2010, 104, 038102.	2.9	67
13	High-velocity drag friction in dense granular media. Europhysics Letters, 2010, 92, 44003.	0.7	65
14	Toughness of double elastic networks. Europhysics Letters, 2004, 67, 470-476.	0.7	62
15	Sensitivity of two-dimensional fifth-order Raman response to the mechanism of vibrational mode-mode coupling in liquid molecules. Chemical Physics Letters, 1997, 278, 175-183.	1.2	57
16	Two-dimensional line-shape analysis of photon-echo signal. Chemical Physics Letters, 1999, 314, 488-495.	1.2	56
17	First-, third-, and fifth-order resonant spectroscopy of an anharmonic displaced oscillators system in the condensed phase. Journal of Chemical Physics, 1997, 106, 2078-2095.	1.2	54
18	Nucleation scenarios for wetting transition on textured surfaces: The effect of contact angle hysteresis. Europhysics Letters, 2006, 76, 464-470.	0.7	53

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19	High-Velocity Drag Friction in Granular Media near the Jamming Point. Physical Review Letters, 2014, 112, 148001.	2.9	53
20	Novel Use of Legendre Transformation in Field Theory and Many Particle Systems. Progress of Theoretical Physics Supplement, 1995, 121, 1-428.	0.2	52
21	Dimensional crossover in the coalescence dynamics of viscous drops confined in between two plates. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 6395-6398.	3.3	49
22	Two-time correlation functions of a harmonic system nonbilinearly coupled to a heat bath: Spontaneous Raman spectroscopy. Physical Review E, 1997, 56, 2747-2750.	0.8	45
23	Interplay of inhomogeneity and anharmonicity in 2D Raman spectroscopy of liquids. Chemical Physics Letters, 1997, 277, 159-166.	1.2	39
24	Two-dimensional THz spectroscopy of liquids: non-linear vibrational response to a series of THz laser pulses. Chemical Physics Letters, 1998, 295, 298-304.	1.2	36
25	Towards combinatorial mixing devices without any pumps by open-capillary channels: fundamentals and applications. Scientific Reports, 2015, 5, 10263.	1.6	33
26	Unified timeâ€path approach to the effect of anharmonicity on the molecular vibrational spectroscopy in solution. Journal of Chemical Physics, 1996, 105, 7294-7309.	1.2	31
27	Two-dimensional spectroscopy and harmonically coupled anharmonic oscillators. Chemical Physics, 2001, 266, 237-250.	0.9	25
28	Why is nacre strong? II. Remaining mechanical weakness for cracks propagating along the sheets. European Physical Journal E, 2002, 7, 303-310.	0.7	23
29	Imbibition of a textured surface decorated by short pillars with rounded edges. Physical Review E, 2012, 86, 020601.	0.8	23
30	Exactly solvable model for a velocity jump observed in crack propagation in viscoelastic solids. Scientific Reports, 2017, 7, 8065.	1.6	22
31	Viscous dynamics of drops and bubbles in Hele-Shaw cells: Drainage, drag friction, coalescence, and bursting. Advances in Colloid and Interface Science, 2018, 255, 64-75.	7.0	22
32	Energy-Level Diagrams and Their Contribution to Fifth-Order Raman and Second-Order Infrared Responses:Â Distinction between Relaxation Models by Two-Dimensional Spectroscopyâ€. Journal of Physical Chemistry A, 2003, 107, 8092-8105.	1.1	21
33	Bursting of a thin film in a confined geometry: Rimless and constant-velocity dewetting. Physical Review E, 2010, 82, 030601.	0.8	21
34	Viscous drag friction acting on a fluid drop confined in between two plates. Soft Matter, 2011, 7, 5648.	1.2	21
35	Capillary Rise on Legs of a Small Animal and on Artificially Textured Surfaces Mimicking Them. PLoS ONE, 2014, 9, e96813.	1.1	18
36	Bouncing gel balls: Impact of soft gels onto rigid surface. Europhysics Letters, 2003, 63, 146-152.	0.7	17

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37	Unified time-path approach to the generating functional of the Brownian oscillator system: The bilinearly corrected Feynman rule for nonequilibrium processes. Physical Review E, 1996, 53, 214-227.	0.8	16
38	Enhanced energy of parallel fractures in nacre-like composite materials. Europhysics Letters, 2003, 63, 701-707.	0.7	15
39	EFFECTIVE ACTIONS OF LOCAL COMPOSITE OPERATORS: THE CASE OF Ï†4 THEORY, THE ITINERANT ELECTRON MODEL, AND QED. International Journal of Modern Physics A, 1996, 11, 65-109.	0.5	14
40	Strength and toughness of biocomposites consisting of soft and hard elements: A few fundamental models. MRS Bulletin, 2015, 40, 333-339.	1.7	14
41	Phase transitions of nematic rubbers. Europhysics Letters, 2003, 63, 76-82.	0.7	13
42	Fracture strength of biomimetic composites: scaling views on nacre. Journal of Physics Condensed Matter, 2005, 17, S2879-S2884.	0.7	13
43	Lifetime of a two-dimensional air bubble. Physical Review E, 2007, 76, 060601.	0.8	13
44	Scaling crossover in thin-film drag dynamics of fluid drops in the Hele-Shaw cell. Scientific Reports, 2016, 6, 31395.	1.6	13
45	Capillary Replacement in a Tube Prefilled with a Viscous Fluid. Langmuir, 2020, 36, 10952-10959.	1.6	11
46	Bursting dynamics of viscous film without circular symmetry: The effect of confinement. Physical Review Fluids, 2018, 3, .	1.0	11
47	Fracture of soft cellular solidsâ€"Case of non-crosslinked polyethylene foam. Europhysics Letters, 2006, 76, 588-594.	0.7	10
48	Analytical solution to a fracture problem in a tough layered structure. Physical Review E, 2008, 78, 026118.	0.8	10
49	Stress and displacement around a crack in layered network systems mimicking nacre. Physical Review E, 2009, 79, 066108.	0.8	10
50	Crack-Tip Stress Concentration and Structure Size in Nonlinear Structured Materials. Journal of the Physical Society of Japan, 2009, 78, 034402.	0.7	10
51	Realistic Numerical Analysis of a Bioinspired Layered Composite with a Crack: Robust Scaling Laws and Crack Arrest. Advanced Engineering Materials, 2013, 15, 522-528.	1.6	10
52	Fracture of Soft Foam Solids: Interplay of Visco- and Plasto-elasticity. ACS Macro Letters, 2014, 3, 419-422.	2.3	10
53	Crack-Tip Stress Concentration and Mesh Size in Networks. Journal of the Physical Society of Japan, 2007, 76, 114801.	0.7	8
54	Systematic analysis of the magnetic susceptibility in the itinerant electron model. Physical Review B, 1995, 52, 13358-13367.	1.1	7

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55	On a moving liquid film and its instability on textured surfaces. European Physical Journal E, 2009, 30, 283-90.	0.7	7
56	Simple Model for the Toughness of a Helical Structure Inspired by the Exoskeleton of Lobsters. Journal of the Physical Society of Japan, 2013, 82, 124802.	0.7	7
57	Stationary crack propagation in a two-dimensional visco-elastic network model. Polymer, 2017, 120, 94-99.	1.8	7
58	Rising bubble in a cell with a high aspect ratio cross-section filled with a viscous fluid and its connection to viscous fingering. Physical Review Research, 2020, 2, .	1.3	6
59	A reformulation of simple liquids theoryâ€”Renormalization by one-, two-, and three-particle densities. Journal of Mathematical Physics, 1998, 39, 2077-2102.	0.5	5
60	On the toughness of biocomposites. Comptes Rendus Physique, 2000, 1, 257-261.	0.1	5
61	Scaling Relation in Fracture of the Materials with Elastoplastic Response Inaccessible by Scaling Laws. Journal of the Physical Society of Japan, 2012, 81, 074604.	0.7	5
62	Simple Network Model for Reinforcement of Materials with Voids. Journal of the Physical Society of Japan, 2014, 83, 035001.	0.7	5
63	Velocity Jumps in Crack Propagation in Elastomers: Relevance of a Recent Model to Experiments. Journal of the Physical Society of Japan, 2018, 87, 125003.	0.7	5
64	Velocity jump in the crack propagation induced on a semi-crystalline polymer sheet by constant-speed stretching. Polymer, 2019, 173, 166-171.	1.8	5
65	Discontinuity in the In-plane to Out-of-plane Transition of Kirigami. Journal of the Physical Society of Japan, 2019, 88, 025001.	0.7	5
66	Rising obstacle in a one-layer granular bed induced by continuous vibrations: two dynamical regimes governed by vibration velocity. Soft Matter, 2020, 16, 8612-8617.	1.2	5
67	Coalescence Dynamics of a Quasi Two-Dimensional Viscous Drop. Journal of the Physical Society of Japan, 2012, 81, SA015.	0.7	4
68	Crack propagation in porous polymer sheets with different pore sizes. MRS Communications, 2018, 8, 1477-1482.	0.8	4
69	Continuity and discontinuity of kirigami's high-extensibility transition: A statistical-physics viewpoint. Physical Review Research, 2019, 1, .	1.3	4
70	Nonadiabatic response theory: The case of volume change. Physical Review E, 1993, 47, 1486-1498.	0.8	3
71	Cage Dynamics in the Third-Order Off-Resonant Response of Liquid Molecules: A Theoretical Realization. Bulletin of the Chemical Society of Japan, 2000, 73, 873-884.	2.0	3
72	Analytical Studies on a Crack in Layered Structures Mimicking Nacre. Journal of Engineering Mechanics - ASCE, 2009, 135, 461-467.	1.6	3

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73	Simple views on different problems in physics: from drag friction to tough biological materials. Philosophical Magazine, 2016, 96, 828-841.	0.7	3
74	Rising Obstacle in a Two-dimensional Granular Bed Induced by Continuous and Discontinuous Vibrations: Dynamics Governed by Vibration Velocity. Journal of the Physical Society of Japan, 2020, 89, 035001.	0.7	3
75	Dynamic glass transition dramatically accelerates crack propagation in rubberlike solids. Physical Review Materials, 2021, 5, .	0.9	3
76	Self-similar dynamics of air film entrained by a solid disk in confined space: A simple prototype of topological transitions. Physical Review Fluids, 2018, 3, .	1.0	3
77	Meandering instability of air flow in a granular bed: self-similarity and fluid-solid duality. Scientific Reports, 2016, 6, 38457.	1.6	2
78	Micro arch-bridge structured surface fabricated by kirigami-on-elastomer approach for liquid-dependent iso/anisotropic wetting. Applied Physics Letters, 2017, 110, .	1.5	2
79	Crack propagation under static and dynamic boundary conditions. Polymer, 2019, 185, 121648.	1.8	2
80	Visco- and plastoelastic fracture of nanoporous polymer sheets. Polymer Journal, 2019, 51, 845-850.	1.3	2
81	Inertial Coalescence of a Liquid Drop Surrounded by Viscous Liquid. Journal of the Physical Society of Japan, 2022, 91, .	0.7	2
82	VARIOUS CONDENSED MATTER HAMILTONIANS IN TERMS OF U(2/2) OPERATORS AND THEIR SYMMETRY STRUCTURES. Modern Physics Letters B, 1993, 07, 251-258.	1.0	1
83	A systematic analysis of the ferromagnetism in the itinerant electron model. Journal of Magnetism and Magnetic Materials, 1995, 140-144, 191-192.	1.0	1
84	Correlation in a Gaussian chain with the ends fixed. European Physical Journal E, 2006, 21, 223-230.	0.7	1
85	Single molecular statistics of an optically tweezed polymer: A theoretical consideration. Chemical Physics Letters, 2007, 439, 369-373.	1.2	1
86	Nematic transitions inside a film on substrates with stripe patterns of graded homeotropic anchoring. Chemical Physics Letters, 2008, 453, 274-278.	1.2	1
87	Scaling Crossover in Crack-Tip Stresses and a Robust Scaling Law for Fracture Strength. Journal of the Physical Society of Japan, 2015, 84, 114602.	0.7	1
88	Phase transitions of nematic rubbers. AIP Conference Proceedings, 2004, , .	0.3	0
89	Inversion Method Based on the Legendre Transformation Applied to Discontinuous Phase Transitions. Journal of the Physical Society of Japan, 2007, 76, 114008.	0.7	0
90	Publisher's Note: Bursting of a thin film in a confined geometry: Rimless and constant-velocity dewetting [Phys. Rev. E82, 030601 (2010)]. Physical Review E, 2010, 82, .	0.8	0

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91	Microgravity experiments in the field of physical chemistry in Japan. Journal of Physics: Conference Series, 2011, 327, 012046.	0.3	0
92	Imbibition of Surfaces Decorated with Pillars of Submillimeter Scales. Journal of the Physical Society of Japan, 2012, 81, SA011.	0.7	0
93	Strength and toughness of bio-fusion materials. Polymer Journal, 2015, 47, 99-105.	1.3	0
94	Stationary bubble formation and cavity collapse in wedge-shaped hoppers. Scientific Reports, 2016, 6, 25065.	1.6	0
95	Thin film partially attached onto elastomer substrate for three-dimensional microstructure. , 2017, , .		0
96	Continuum Mechanics and Its Practical Applications at the Level of Scaling Laws. , 2019, , 111-118.		0
97	How universal is the vibration-velocity controlled granular convection?. EPJ Web of Conferences, 2021, 249, 03019.	0.1	0
98	The Supergroup U(M/N) with Regard to Electronic Hamiltonians. Journal of the Physical Society of Japan, 1993, 62, 1922-1926.	0.7	0
99	Physical Understanding and Potential Applications of Crack Propagation on Viscoelastic Sheets. Nippon Gomu Kyokaishi, 2019, 92, 340-346.	0.0	0
100	Toughening in a nacre-like soft-hard layered structure due to weak nonlinearity in the soft layer. Physical Review Materials, 2019, 3, .	0.9	0
101	Air entrained into viscous liquid by a disk: Confinement induced suppression of breakup. Physical Review Research, 2022, 4, .	1.3	0