Kenneth Showalter

List of Publications by Year
in descending order

128	9,388	34105	38395
papers	citations	52 h-index	95 g-index

129	129	129	3691
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Novel modes of synchronization in star networks of coupled chemical oscillators. Chaos, 2021, 31, 093127.	2.5	5
2	Photochemical motion control of surface active Belousovâ€“Zhabotinsky droplets. Chaos, 2020, 30, 083143.	2.5	7
3	Transition from spiral wave chimeras to phase cluster states. Scientific Reports, 2020, 10, 7821.	3.3	13
4	Twisted scroll wave dynamics: partially pinned waves in excitable chemical media. Physical Chemistry Chemical Physics, 2019, 21, 2419-2425.	2.8	3
5	Autonomous cycling between excitatory and inhibitory coupling in photosensitive chemical oscillators. Chaos, 2018, 28, 045114.	2.5	9
6	Multistability and tipping: From mathematics and physics to climate and brainâ€”Minireview and preface to the focus issue. Chaos, 2018, 28, 033501.	2.5	91
7	Spiral wave chimera states in large populations of coupled chemical oscillators. Nature Physics, 2018, 14, 282-285.	16.7	175
8	Synchronization of heterogeneous oscillator populations in response to weak and strong coupling. Chaos, 2018, 28, 123114.	2.5	18
9	Echo Behavior in Large Populations of Chemical Oscillators. Physical Review X, 2016, 6, .	8.9	10
10	Chimera and chimera-like states in populations of nonlocally coupled homogeneous and heterogeneous chemical oscillators. Chaos, 2016, 26, 094826.	2.5	53
11	Phase-lag synchronization in networks of coupled chemical oscillators. Physical Review E, 2015, 92, 022819.	2.1	49
12	Desynchronization of stochastically synchronized chemical oscillators. Chaos, 2015, 25, 123116.	2.5	16
13	Insights into collective cell behaviour from populations of coupled chemical oscillators. Physical Chemistry Chemical Physics, 2015, 17, 20047-20055.	2.8	44
14	Three-dimensional modeling of propagating precipitation waves. Chaos, 2015, 25, 064306.	2.5	8
15	From chemical systems to systems chemistry: Patterns in space and time. Chaos, 2015, 25, 097613.	2.5	49
16	Link weight evolution in a network of coupled chemical oscillators. Physical Review E, 2014, 89, 052712.	2.1	14
17	Experimental observation of extreme multistability in an electronic system of two coupled RÃ¶ssler oscillators. Physical Review E, 2014, 89, 022918.	2.1	86
18	Propagating Precipitation Waves: Experiments and Modeling. Journal of Physical Chemistry A, 2013, 117, 12719-12725.	2.5	25

#	Article	IF	Citations
19	Chimera States in Populations of Nonlocally Coupled Chemical Oscillators. Physical Review Letters, 2013, 110, 244102.	7.8	235
20	QUORUM SENSING AND SYNCHRONIZATION IN POPULATIONS OF COUPLED CHEMICAL OSCILLATORS. World Scientific Lecture Notes in Complex Systems, 2013, , 261-278.	0.1	0
21	Chimera and phase-cluster states in populations of coupled chemical oscillators. Nature Physics, 2012, 8, 662-665.	16.7	612
22	Complex organizing centers in groups of oscillatory particles. Physical Chemistry Chemical Physics, 2011, 13, 17802.	2.8	12
23	Phase Clusters in Large Populations of Chemical Oscillators. Angewandte Chemie - International Edition, 2011, 50, 10161-10164.	13.8	38
24	Introduction to Focus Issue: Nonlinear and Stochastic Physics in Biology. Chaos, 2011, 21, 047501.	2.5	2
25	Extreme multistability in a chemical model system. Physical Review E, 2011, 83, 056206.	2.1	93
26	Dynamical quorum sensing and synchronization in collections of excitable and oscillatory catalytic particles. Physica D: Nonlinear Phenomena, 2010, 239, 785-790.	2.8	53
27	Motion Analysis of Self-Propelled Ptâ"Silica Particles in Hydrogen Peroxide Solutions. Journal of Physical Chemistry A, 2010, 114, 5462-5467.	2.5	160
28	Emergence of Collective Behavior in Groups of Excitable Catalyst-Loaded Particles: Spatiotemporal Dynamical Quorum Sensing. Physical Review Letters, 2009, 102, 158301.	7.8	56
29	Dynamical Quorum Sensing and Synchronization in Large Populations of Chemical Oscillators. Science, 2009, 323, 614-617.	12.6	358
30	Collective behavior of particle-like chemical waves. European Physical Journal: Special Topics, 2008, 165, 161-167.	2.6	11
31	Collective behavior of stabilized reaction-diffusion waves. Chaos, 2008, 18, 026108.	2.5	17
32	Introduction to Focus Issue: Design and Control of Self-Organization in Distributed Active Systems. Chaos, 2008, 18, 026101.	2.5	8
33	Minimum-Risk Path Finding by an Adaptive Amoebal Network. Physical Review Letters, 2007, 99, 068104.	7.8	157
34	Wave Mediated Synchronization of Nonuniform Oscillatory Media. Physical Review Letters, 2007, 98, 074101.	7.8	47
35	Control of waves, patterns and turbulence in chemical systems. Physics Reports, 2006, 425, 79-194.	25.6	384
36	Spatiotemporal dynamics of networks of excitable nodes. Chaos, 2006, 16, 015110.	2.5	33

#	Article	IF	Citations
37	Resonance Pacemakers in Excitable Media. Physical Review Letters, 2006, 96, 244101.	7.8	28
38	Spatiotemporal Networks in Addressable Excitable Media. Physical Review Letters, 2005, 95, 038306.	7.8	26
39	Stochastic resonance of electrochemical aperiodic spike trains. Physical Review E, 2005, 71, 031110.	2.1	37
40	Wave Front Interaction Model of Stabilized Propagating Wave Segments. Physical Review Letters, 2005, 94, 068302.	7.8	58
41	Uncertain dynamics in nonlinear chemical reactions. Physical Chemistry Chemical Physics, 2003, 5, 5444.	2.8	21
42	Collapse of Spatiotemporal Chaos. Physical Review Letters, 2003, 91, 174103.	7.8	32
43	Synchronization of spatiotemporal patterns in locally coupled excitable media. Physical Review E, 2003, 68, 026205.	2.1	39
44	Feedback stabilization of unstable propagating waves. Physical Review E, 2002, 65, 065602.	2.1	69
45	Experimental and theoretical studies of feedback stabilization of propagating wave segments. Faraday Discussions, 2002, 120, 383-394.	3.2	42
46	Design and Control of Wave Propagation Patterns in Excitable Media. Science, 2002, 296, 2009-2012.	12.6	187
47	Topographic organization of Hebbian neural connections by synchronous wave activity. Chaos, 2001, 11, 287.	2.5	1
48	Spatial Symmetry Breaking in the Belousov-Zhabotinsky Reaction with Light-Induced Remote Communication. Physical Review Letters, 2001, 87, 088303.	7.8	31
49	Wave Propagation in Subexcitable Media with Periodically Modulated Excitability. Physical Review Letters, 2001, 86, 1646-1649.	7.8	76
50	Coherent structure analysis of spatiotemporal chaos. Physical Review E, 2000, 61, 2095-2098.	2.1	25
51	Self-Segregation of Competitive Chaotic Populations. Physical Review Letters, 2000, 84, 5018-5021.	7.8	11
52	Uncertain destination dynamics. Physical Review E, 1999, 60, 3876-3880.	2.1	45
53	Noise Driven Avalanche Behavior in Subexcitable Media. Physical Review Letters, 1999, 82, 855-858.	7.8	118
54	Normal Modes for Chemical Reactions from Time Series Analysis. Journal of Physical Chemistry A, 1999, 103, 8246-8251.	2.5	22

#	Article	IF	Citations
55	Noise-supported travelling waves in sub-excitable media. Nature, 1998, 391, 770-772.	27.8	309
56	Competitive autocatalysis in reaction-diffusion systems Exclusive product selectivity. Journal of the Chemical Society, Faraday Transactions, 1998, 94, 53-57.	1.7	6
57	Formation and evolution of scroll waves in photosensitive excitable media. Chaos, 1998, 8, 872-878.	2.5	37
58	Noise sustained waves in subexcitable media: From chemical waves to brain waves. Chaos, 1998, 8, 567-575.	2.5	71
59	Nonlinear prediction, filtering, and control of chemical systems from time series. Chaos, 1997, 7, 614-620.	2.5	6
60	Modelling studies of spiral waves and target patterns in premixed flames. Journal of the Chemical Society, Faraday Transactions, 1997, 93, 1733-1739.	1.7	22
61	Reaction Mechanism for Light Sensitivity of the Ru(bpy)32+-Catalyzed Belousovâ^'Zhabotinsky Reaction. Journal of Physical Chemistry A, 1997, 101, 8200-8206.	2.5	149
62	Introduction: Control and synchronization of chaos. Chaos, 1997, 7, 509-511.	2.5	46
63	Wave-induced chaos in a continuously fed unstirred reactor. Journal of the Chemical Society, Faraday Transactions, 1996, 92, 2911.	1.7	25
64	Nonlinear Chemical Dynamics:Â Oscillations, Patterns, and Chaos. The Journal of Physical Chemistry, 1996, 100, 13132-13147.	2.9	443
65	Chemical Wave Logic Gates. The Journal of Physical Chemistry, 1996, 100, 18970-18975.	2.9	189
66	Nonlinear Control of Dynamical Systems from Time Series. Physical Review Letters, 1996, 76, 3312-3315.	7.8	17
67	Spiral Wave Formation in Three-Dimensional Excitable Media. Physical Review Letters, 1996, 77, 3244-3247.	7.8	53
68	Wave-Induced Chemical Chaos. Physical Review Letters, 1996, 76, 546-549.	7.8	68
69	Stabilizing steady and periodic behavior in propagating flame fronts. Physica D: Nonlinear Phenomena, 1995, 84, 12-22.	2.8	1
70	Stabilizing and characterizing unstable states in high-dimensional systems from time series. Physical Review E, 1995, 51, 3988-3996.	2.1	33
71	Logic gates in excitable media. Journal of Chemical Physics, 1995, 103, 2058-2066.	3.0	166
72	Instabilities in propagating reactionâ€diffusion fronts of the iodateâ€arsenous acid reaction. Journal of Chemical Physics, 1995, 102, 2471-2478.	3.0	83

#	Article	IF	Citations
73	Tracking Unstable Turing Patterns through Mixed-Mode Spatiotemporal Chaos. Physical Review Letters, 1995, 75, 2895-2898.	7.8	39
74	Response. Science, 1995, 269, 418-418.	12.6	2
75	Navigating Complex Labyrinths: Optimal Paths from Chemical Waves. Science, 1995, 267, 868-871.	12.6	246
76	Anisotropy and Spiral Organizing Centers in Patterned Excitable Media. Science, 1995, 269, 1857-1860.	12.6	111
77	Simple and Complex Reaction-Diffusion Fronts. , 1995, , 485-516.		8
78	Signal transmission in chemical systems: propagation of chemical waves through capillary tubes. The Journal of Physical Chemistry, 1994, 98, 522-531.	2.9	120
79	Nonaxisymmetric and Axisymmetric Convection in Propagating Reaction-Diffusion Fronts. The Journal of Physical Chemistry, 1994, 98, 6505-6508.	2.9	90
80	AN ADAPTIVE CONTROL ALGORITHM FOR TRACKING UNSTABLE PERIODIC ORBITS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 1994, 04, 1311-1317.	1.7	19
81	Controlling spatiotemporal dynamics of flame fronts. Journal of Chemical Physics, 1994, 101, 6606-6614.	3.0	7
82	Tracking unstable periodic orbits in the Belousov-Zhabotinsky reaction. Physical Review Letters, 1994, 72, 2955-2958.	7.8	58
83	Excitability, wave reflection, and wave splitting in a cubic autocatalysis reaction-diffusion system. Philosophical Transactions of the Royal Society: Physical and Engineering Sciences, 1994, 347, 631-642.	1.0	125
84	Controlling chaos in the Belousovâ€"Zhabotinsky reaction. Nature, 1993, 361, 240-243.	27.8	383
85	Instabilities in propagating reactionâ€diffusion fronts. Journal of Chemical Physics, 1993, 98, 6332-6343.	3.0	143
86	Simple and complex propagating reaction-diffusion fronts. The Journal of Physical Chemistry, 1992, 96, 8702-8711.	2.9	68
87	A mapâ€based algorithm for controlling lowâ€dimensional chaos. Journal of Chemical Physics, 1992, 96, 7506-7513.	3.0	88
88	Mixedâ€mode oscillations in chemical systems. Journal of Chemical Physics, 1992, 97, 6191-6198.	3.0	209
89	Controlling low-dimensional chaos by proportional feedback. Physica A: Statistical Mechanics and Its Applications, 1992, 188, 210-216.	2.6	23
90	Controlling chemical chaos. The Journal of Physical Chemistry, 1991, 95, 4957-4959.	2.9	196

#	Article	IF	Citations
91	The influence of the form of autocatalysis on the speed of chemical waves. Philosophical Transactions of the Royal Society: Physical and Engineering Sciences, 1991, 337, 249-260.	1.0	11
92	False bifurcations in chemical systems: canards. Philosophical Transactions of the Royal Society: Physical and Engineering Sciences, 1991, 337, 275-289.	1.0	47
93	Cross-membrane coupling of chemical spatiotemporal patterns. Nature, 1991, 351, 132-135.	27.8	94
94	Chemical waves in inhomogeneous excitable media. Physica D: Nonlinear Phenomena, 1991, 49, 21-32.	2.8	75
95	Onset of convection for autocatalytic reaction fronts: Laterally unbounded system. Physical Review A, 1991, 43, 749-760.	2.5	70
96	Transverse coupling of chemical waves. Chaos, 1991, 1, 435-444.	2.5	17
97	Transient chaos in a closed chemical system. Journal of Chemical Physics, 1991, 94, 1134-1140.	3.0	50
98	Convective effects on chemical waves. 2. Simple convection in the iodate-arsenous acid system. The Journal of Physical Chemistry, 1991, 95, 1299-1306.	2.9	139
99	Single and double rotor spiral waves on spherical surfaces. Reaction Kinetics and Catalysis Letters, 1990, 42, 263-274.	0.6	6
100	Simple model for the oscillatory iodate oxidation of sulfite and ferrocyanide. The Journal of Physical Chemistry, 1990, 94, 4973-4979.	2.9	35
101	Period doubling and chaos in a three-variable autocatalator. The Journal of Physical Chemistry, 1990, 94, 5243-5246.	2.9	83
102	Relaxation behavior in a bistable chemical system. Plateau behavior. Journal of Chemical Physics, 1989, 91, 938-942.	3.0	8
103	Chemical waves on spherical surfaces. Nature, 1989, 339, 609-611.	27.8	141
104	Regular and irregular spatial patterns in an immobilized-catalyst Belousov-Zhabotinskii reaction. The Journal of Physical Chemistry, 1989, 93, 2774-2780.	2.9	94
105	Period lengthening and associated bifurcations in a twoâ€variable, flow Oregonator. Journal of Chemical Physics, 1988, 88, 778-791.	3.0	20
106	The oscillatory Landolt reaction. Empirical rate law model and detailed mechanism. Journal of the American Chemical Society, 1987, 109, 4869-4876.	13.7	56
107	Luther's 1906 discovery and analysis of chemical waves. Journal of Chemical Education, 1987, 64, 742.	2.3	64
108	Propagating acidity fronts in the iodate-arsenous acid reaction. The Journal of Physical Chemistry, 1986, 90, 225-226.	2.9	32

#	Article	IF	Citations
109	Relaxation behavior in a bistable chemical system near the critical point and hysteresis limits. Journal of Chemical Physics, 1986, 84, 5427-5436.	3.0	35
110	Comment on "A new iodate driven nonperiodic oscillatory reaction in a continuously stirred tank reactor". The Journal of Physical Chemistry, 1985, 89, 2118-2119.	2.9	5
111	Relaxation behavior in a bistable chemical system near the unstable steady state and separatrix. Journal of Chemical Physics, 1985, 83, 1101-1110.	3.0	16
112	Bistability, mushrooms, and isolas. Journal of Chemical Physics, 1984, 80, 4177-4184.	3.0	60
113	Washout effects in pumped tank reactors. Journal of the American Chemical Society, 1984, 106, 816-817.	13.7	1
114	Measurements and Modelling of Unstable Steady State, Separatrix, and Critical Point Behavior. Springer Series in Synergetics, 1984, , 50-54.	0.4	0
115	Critical slowing down in the bistable iodate-arsenic(III) reaction. The Journal of Physical Chemistry, 1983, 87, 1098-1099.	2.9	41
116	Detailed studies of propagating fronts in the iodate oxidation of arsenous acid. Journal of the American Chemical Society, 1982, 104, 3838-3844.	13.7	196
117	Kinetic bistability in the permanganate oxidation of oxalate. Journal of the American Chemical Society, 1981, 103, 7012-7013.	13.7	30
118	Bistability in the iodate oxidation of arsenous acid. The Journal of Physical Chemistry, 1981, 85, 2575-2582.	2.9	39
119	Chemical waves in the acidic iodate oxidation of arsenite. The Journal of Physical Chemistry, 1981, 85, 2152-2155.	2.9	54
120	Trigger waves in the acidic bromate oxidation of ferroin. The Journal of Physical Chemistry, 1981, 85, 440-447.	2.9	48
121	Chemical Waves in the Iodate-Arsenous Acid System. Springer Series in Synergetics, 1981, , 160-165.	0.4	1
122	Pattern formation in a ferroinâ€bromate system. Journal of Chemical Physics, 1980, 73, 3735-3742.	3.0	74
123	Detailed studies of trigger wave initiation and detection. Journal of the American Chemical Society, 1979, 101, 7463-7469.	13.7	61
124	Oscillations in chemical systems. 24. Oscillatory decomposition of formic acid in sulfuric acid. Journal of the American Chemical Society, 1978, 100, 1042-1049.	13.7	22
125	A modified Oregonator model exhibiting complicated limit cycle behavior in a flow system. Journal of Chemical Physics, 1978, 69, 2514.	3.0	146
126	Oscillations in chemical systems. 15. Deliberate generation of trigger waves of chemical reactivity. Journal of the American Chemical Society, 1976, 98, 3730-3731.	13.7	17

#	Article	IF	Citations
127	Studies of propanediol-chromium(III) species in acidic solution. Journal of the American Chemical Society, 1976, 98, 8087-8093.	13.7	4
128	Computational Studies in Nonlinear Dynamics. Reviews in Computational Chemistry, 0, , 177-270.	1.5	0