Julyan Cartwright

List of Publications by Year
in descending order

144	4,799	94381	106281
papers	citations	37 h-index	65 g-index

149	149	149	4083
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Calcium Carbonate Polyamorphism and Its Role in Biomineralization: How Many Amorphous Calcium Carbonates Are There?. Angewandte Chemie - International Edition, 2012, 51, 11960-11970.	7.2	341
2	Ice structures, patterns, and processes: A view across the icefields. Reviews of Modern Physics, 2012, 84, 885-944.	16.4	277
3	The dynamics of nacre self-assembly. Journal of the Royal Society Interface, 2007, 4, 491-504.	1.5	225
4	From Chemical Gardens to Chemobrionics. Chemical Reviews, 2015, 115, 8652-8703.	23.0	216
5	Formation of Chemical Gardens. Journal of Colloid and Interface Science, 2002, 256, 351-359.	5.0	185
6	Fluid-dynamical basis of the embryonic development of left-right asymmetry in vertebrates. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 7234-7239.	3.3	177
7	Dynamics of a Small Neutrally Buoyant Sphere in a Fluid and Targeting in Hamiltonian Systems. Physical Review Letters, 2000, 84, 5764-5767.	2.9	170
8	Mineral bridges in nacre. Journal of Structural Biology, 2011, 176, 330-339.	1.3	155
9	Frontiers of chaotic advection. Reviews of Modern Physics, 2017, 89, .	16.4	146
10	THE DYNAMICS OF RUNGEâ€“KUTTA METHODS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 1992, 02, 427-449.	0.7	130
11	Spiral precipitation patterns in confined chemical gardens. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 17363-17367.	3.3	108
12	DYNAMICS OF ELASTIC EXCITABLE MEDIA. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 1999, 09, 2197-2202.	0.7	95
13	From Chemical Gardens to Fuel Cells: Generation of Electrical Potential and Current Across Selfâ€Assembling Iron Mineral Membranes. Angewandte Chemie - International Edition, 2015, 54, 8184-8187.	7.2	92
14	The key role of the surface membrane in why gastropod nacre grows in towers. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 38-43.	3.3	89
15	Chaotic advection in three-dimensional unsteady incompressible laminar flow. Journal of Fluid Mechanics, 1996, 316, 259-284.	1.4	84
16	Ostwald Ripening, Chiral Crystallization, and the Common-Ancestor Effect. Physical Review Letters, 2007, 98, 165501.	2.9	78
17	The cuttlefish Sepia officinalis (Sepiidae, Cephalopoda) constructs cuttlebone from a liquid-crystal precursor. Scientific Reports, 2015, 5, 11513.	1.6	71
18	Burridge-Knopoff Models as Elastic Excitable Media. Physical Review Letters, 1997, 79, 527-530.	2.9	68

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19	Chiral Symmetry Breaking during Crystallization: An Advection-Mediated Nonlinear Autocatalytic Process. Physical Review Letters, 2004, 93, 035502.	2.9	65
20	Labyrinthine Turing Pattern Formation in the Cerebral Cortex. Journal of Theoretical Biology, 2002, 217, 97-103.	0.8	64
21	Spiral and target patterns in bivalve nacre manifest a natural excitable medium from layer growth of a biological liquid crystal. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 10499-10504.	3.3	63
22	Fluid dynamics in developmental biology: Moving fluids that shape ontogeny. HFSP Journal, 2009, 3, 77-93.	2.5	63
23	Chemical-Garden Formation, Morphology, and Composition. I. Effect of the Nature of the Cations. Langmuir, 2011, 27, 3286-3293.	1.6	62
24	Fuzzy Control of Chaos. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 1998, 08, 1743-1747.	0.7	61
25	Genericity of confined chemical garden patterns with regard to changes in the reactants. Physical Chemistry Chemical Physics, 2015, 17, 12804-12811.	1.3	54
26	Thermodynamics, Disequilibrium, Evolution: Far-From-Equilibrium Geological and Chemical Considerations for Origin-Of-Life Research. Origins of Life and Evolution of Biospheres, 2017, 47, 39-56.	0.8	54
27	THE BOGDANOV MAP: BIFURCATIONS, MODE LOCKING, AND CHAOS IN A DISSIPATIVE SYSTEM. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 1993, 03, 803-842.	0.7	53
28	Physics and chemistry of icy particles in the universe: answers from microgravity. Planetary and Space Science, 2003, 51, 473-494.	0.9	53
29	Emergent global oscillations in heterogeneous excitable media: The example of pancreaticÎ²cells. Physical Review E, 2000, 62, 1149-1154.	0.8	50
30	Wavy membranes and the growth rate of a planar chemical garden: Enhanced diffusion and bioenergetics. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 9182-9186.	3.3	48
31	Organic membranes determine the pattern of the columnar prismatic layer of mollusc shells. Proceedings of the Royal Society B: Biological Sciences, 2016, 283, 20160032.	1.2	47
32	Embryonic nodal flow and the dynamics of nodal vesicular parcels. Journal of the Royal Society Interface, 2007, 4, 49-56.	1.5	46
33	Nonlinear Dynamics of the Perceived Pitch of Complex Sounds. Physical Review Letters, 1999, 82, 5389-5392.	2.9	43
34	Chemical gardens from silicates and cations of group 2: a comparative study of composition, morphology and microstructure. Physical Chemistry Chemical Physics, 2011, 13, 1030-1036.	1.3	42
35	Beyond crystals: the dialectic of materials and information. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2012, 370, 2807-2822.	1.6	39
36	On the differing growth mechanisms of black-smoker and Lost City-type hydrothermal vents. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2017, 473, 20170387.	1.0	39

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37	Direct and Reverse Chemical Garden Patterns Grown upon Injection in Confined Geometries. Journal of Physical Chemistry C, 2015, 119, 15067-15076.	1.5	38
38	Chemobrionics: From Self-Assembled Material Architectures to the Origin of Life. Artificial Life, 2020, 26, 315-326.	1.0	37
39	Dynamics of Finite-Size Particles in Chaotic Fluid Flows. Understanding Complex Systems, 2010, , 51-87.	0.3	37
40	What kind of a wave is Hokusai's Great wave off Kanagawa ?. Notes and Records of the Royal Society, 2009, 63, 119-135.	0.1	35
41	Nonlinear stiffness, Lyapunov exponents, and attractor dimension. Physics Letters, Section A: General, Atomic and Solid State Physics, 1999, 264, 298-302.	0.9	34
42	Brinicles as a Case of Inverse Chemical Gardens. Langmuir, 2013, 29, 7655-7660.	1.6	33
43	Pitch perception: A dynamical-systems perspective. Proceedings of the National Academy of Sciences of the United States of America, 2001, 98, 4855-4859.	3.3	32
44	Chemical-Garden Formation, Morphology, and Composition. II. Chemical Gardens in Microgravity. Langmuir, 2011, 27, 3294-3300.	1.6	31
45	Global Diffusion in a Realistic Three-Dimensional Time-Dependent Nonturbulent Fluid Flow. Physical Review Letters, 1995, 75, 3669-3672.	2.9	30
46	Bailout Embeddings and Neutrally Buoyant Particles in Three-Dimensional Flows. Physical Review Letters, 2002, 89, 264501.	2.9	28
47	Bailout embeddings, targeting of invariant tori, and the control of Hamiltonian chaos. Physical Review E, 2002, 65, 045203.	0.8	28
48	Pattern formation in crystal growth: Liesegang rings. Computer Physics Communications, 1999, 121-122, 411-413.	3.0	24
49	Fluid dynamics of nodal flow and leftâ€“right patterning in development. Developmental Dynamics, 2008, 237, 3477-3490.	0.8	24
50	Filament dynamics in confined chemical gardens and in filiform corrosion. Physical Chemistry Chemical Physics, 2018, 20, 784-793.	1.3	23
51	Passive scalars and three-dimensional Liouvillian maps. Physica D: Nonlinear Phenomena, 1994, 76, 22-33.	1.3	22
52	From Chemical Gardens to Fuel Cells: Generation of Electrical Potential and Current Across Selfâ€Assembling Iron Mineral Membranes. Angewandte Chemie, 2015, 127, 8302-8305.	1.6	22
53	The fertile physics of chemical gardens. Physics Today, 2016, 69, 44-51.	0.3	22
54	The origin of life: the submarine alkaline vent theory at 30. Interface Focus, 2019, 9, 20190104.	1.5	21

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55	Self-Assembling Ice Membranes on Europa: Brinicle Properties, Field Examples, and Possible Energetic Systems in Icy Ocean Worlds. Astrobiology, 2019, 19, 685-695.	1.5	21
56	Carbonate-hydroxide chemical-garden tubes in the soda ocean of Enceladus: Abiotic membranes and microtubular forms of calcium carbonate. Icarus, 2019, 319, 337-348.	1.1	21
57	Universality in three-frequency resonances. Physical Review E, 1999, 59, 2902-2906.	0.8	20
58	Dynamics of osmosis in a porous medium. Royal Society Open Science, 2014, 1, 140352.	1.1	20
59	Cement nanotubes: on chemical gardens and cement. Structural Chemistry, 2017, 28, 33-37.	1.0	20
60	Chiral Symmetry Breaking and Polymorphism in 1,1â€˜-Binaphthyl Melt Crystallization. Journal of Physical Chemistry B, 2005, 109, 18758-18764.	1.2	19
61	The Mesoscale Morphologies of Ice Films: Porous and Biomorphic Forms of Ice under Astrophysical Conditions. Astrophysical Journal, 2008, 687, 1406-1414.	1.6	19
62	Chemosensing versus mechanosensing in nodal and Kupffer's vesicle cilia and in other leftâ€“right organizer organs. Philosophical Transactions of the Royal Society B: Biological Sciences, 2020, 375, 20190566.	1.8	16
63	Exploding Chemical Gardens: A Phaseâ€Change Clock Reaction. Angewandte Chemie - International Edition, 2019, 58, 6207-6213.	7.2	15
64	Aesthetics, Dynamics, and Musical Scales: A Golden Connection. Journal of New Music Research, 2002, 31, 51-58.	0.6	14
65	Pearls Are Self-Organized Natural Ratchets. Langmuir, 2013, 29, 8370-8376.	1.6	14
66	Noise- and inertia-induced inhomogeneity in the distribution of small particles in fluid flows. Chaos, 2002, 12, 489-495.	1.0	13
67	Tsunami: a history of the term and of scientific understanding of the phenomenon in Japanese and Western culture. Notes and Records of the Royal Society, 2008, 62, 151-166.	0.1	13
68	Crystal growth as an excitable medium. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2012, 370, 2866-2876.	1.6	13
69	Fluid-flow-templated self-assembly of calcium carbonate tubes in the laboratory and in biomineralization: The tubules of the watering-pot shells, Clavagelloidea. Acta Biomaterialia, 2016, 43, 338-347.	4.1	13
70	Self-assembling iron oxyhydroxide/oxide tubular structures: laboratory-grown and field examples from Rio Tinto. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2016, 472, 20160466.	1.0	13
71	DNA as information: at the crossroads between biology, mathematics, physics and chemistry. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150071.	1.6	13
72	Growth of Selfâ€Assembling Tubular Structures of Magnesium Oxy/Hydroxide and Silicate Related With Seafloor Hydrothermal Systems Driven by Serpentinization. Geochemistry, Geophysics, Geosystems, 2018, 19, 2813-2822.	1.0	13

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73	Geometric Mixing, Peristalsis, and the Geometric Phase of the Stomach. PLoS ONE, 2015, 10, e0130735.	1.1	12
74	Increased methane emissions from deep osmotic and buoyant convection beneath submarine seeps as climate warms. Nature Communications, 2016, 7, 13266.	5.8	12
75	Filiform corrosion as a pressure-driven delamination process. Soft Matter, 2019, 15, 803-812.	1.2	11
76	Theory and simulation of buoyancy-driven convection around growing protein crystals in microgravity. Microgravity Science and Technology, 2002, 13, 14-21.	0.7	10
77	Dynamics of tidal synchronization and orbit circularization of celestial bodies. Physical Review E, 2008, 78, 036216.	0.8	10
78	Filament dynamics in planar chemical gardens. Physical Chemistry Chemical Physics, 2021, 23, 5222-5235.	1.3	10
79	An Introduction to Chaotic Advection. NATO ASI Series Series B: Physics, 1999, , 307-342.	0.2	10
80	MÃ¶bius Strips Before MÃ¶bius: Topological Hints in Ancient Representations. Mathematical Intelligencer, 2016, 38, 69-76.	0.1	9
81	Evidence for a liquid-crystal precursor involved in the formation of the crossed-lamellar microstructure of the mollusc shell. Acta Biomaterialia, 2021, 120, 12-19.	4.1	9
82	Chaotic dynamics and reversal statistics of the forced spherical pendulum: comparing the Miles equations with experiment. Dynamical Systems, 2010, 25, 1-16.	0.2	8
83	Chemobrionic Fabrication of Hierarchical Selfâ€Assembling Nanostructures of Copper Oxide and Hydroxide. ChemSystemsChem, 2019, 1, e1900011.	1.1	8
84	Nacre Is a Liquid-Crystal Thermometer of the Oceans. ACS Nano, 2020, 14, 9277-9281.	7.3	8
85	The beeTetragonulabuilds its comb like a crystal. Journal of the Royal Society Interface, 2020, 17, 20200187.	1.5	8
86	Chemical Gardens Under Mars Conditions: Imaging Chemical Garden Growth In Situ in an Environmental Scanning Electron Microscope. Geophysical Research Letters, 2021, 48, e2021GL092883.	1.5	8
87	Three-frequency resonances in coupled phase-locked loops. IEEE Transactions on Circuits and Systems Part 1: Regular Papers, 2000, 47, 491-497.	0.1	7
88	Pattern formation in solutal convection: vermiculated rolls and isolated cells. Physica A: Statistical Mechanics and Its Applications, 2002, 314, 291-298.	1.2	7
89	Ice films follow structure zone model morphologies. Thin Solid Films, 2010, 518, 3422-3427.	0.8	7
90	Two musical paths to the Farey series and devil's staircase. Journal of Mathematics and Music, 2010, 4, 57-74.	0.3	7

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91	Exploding Chemical Gardens: A Phaseâ€Change Clock Reaction. Angewandte Chemie, 2019, 131, 6273-6279.	1.6	7
92	Intrinsic concentration cycles and high ion fluxes in self-assembled precipitate membranes. Interface Focus, 2019, 9, 20190064.	1.5	7
93	A Tungstate Chemical Garden. ChemSystemsChem, 2020, 2, e2000023.	1.1	7
94	Archimedean Spirals Form at Low Flow Rates in Confined Chemical Gardens. Langmuir, 2022, 38, 6700-6710.	1.6	7
95	On modular smoothing and scaling functions for mode locking. Physics Letters, Section A: General, Atomic and Solid State Physics, 1992, 163, 63-67.	0.9	6
96	Fluid dynamics of establishing leftâ€“right patterning in development. Birth Defects Research Part C: Embryo Today Reviews, 2008, 84, 95-101.	3.6	6
97	THREE-FREQUENCY RESONANCES IN DYNAMICAL SYSTEMS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 1999, 09, 2181-2187.	0.7	5
98	Newton maps: fractals from Newton's method for the circle map. Computers and Graphics, 1999, 23, 607-612.	1.4	5
99	Bubbling and on-off intermittency in bailout embeddings. Physical Review E, 2003, 68, 016217.	0.8	5
100	Is the Mexican wave really a ripple of excitation?. Europhysics News, 2006, 37, 22-23.	0.1	5
101	Influence of microstructure on the transitions between mesoscopic thin-film morphologies in ballistic-diffusive models. Physical Review E, 2010, 81, 011140.	0.8	5
102	The present scope of Biomineralization. Journal of Structural Biology, 2016, 196, 65-66.	1.3	5
103	De nive sexangula â€“ a history of ice and snow â€“ part 1. Weather, 2016, 71, 291-294.	0.6	5
104	Stokes' law, viscometry, and the Stokes falling sphere clock. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20200214.	1.6	5
105	Thermo-kinetic explosions: Safety first or safety last?. Physics of Fluids, 2021, 33, .	1.6	5
106	Formation and Structures of Horizontal Submarine Fluid Conduit and Venting Systems Associated With Marine Seeps. Geochemistry, Geophysics, Geosystems, 2021, 22, e2021GC009724.	1.0	5
107	Nacre: A Unique Biomaterial Patterned by Liquid Crystals. Materials Research Society Symposia Proceedings, 2008, 1094, 1.	0.1	4
108	Icy hell â€“ a history of ice and snow â€“ part 2. Weather, 2017, 72, 102-106.	0.6	4

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109	Filament dynamics in vertical confined chemical gardens. Chaos, 2022, 32, 053107.	1.0	4
110	A minimal dynamical model for tidal synchronization and orbit circularization. Celestial Mechanics and Dynamical Astronomy, 2011, 109, 181-200.	0.5	3
111	The fluid mechanics of poohsticks. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190522.	1.6	3
112	Dynamical Systems, Celestial Mechanics, and Music: Pythagoras Revisited. Mathematical Intelligencer, 2021, 43, 25-39.	0.1	3
113	Non-power positional number representation systems, bijective numeration, and the Mesoamerican discovery of zero. Heliyon, 2021, 7, e06580.	1.4	3
114	Convective flow driven by a chemical nanopump. Physical Review Fluids, 2020, 5, .	1.0	3
115	Publisherâ€™s Note: Bailout embeddings, targeting of invariant tori, and the control of Hamiltonian chaos [Phys. Rev. E 65, 045203 (2002)]. Physical Review E, 2002, 65, .	0.8	2
116	NOISE-INDUCED ORDER OUT OF CHAOS BY BAILOUT EMBEDDING. Fluctuation and Noise Letters, 2002, 02, R161-R174.	1.0	2
117	Geometric phases in discrete dynamical systems. Physics Letters, Section A: General, Atomic and Solid State Physics, 2016, 380, 3485-3489.	0.9	2
118	Directed self-assembly, genomic assembly complexity and the formation of biological structure, or, what are the genes for nacre?. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150449.	1.6	2
119	Hot ice and wondrous strange snow - a history of ice and snow - part 3. Weather, 2017, 72, 272-275.	0.6	2
120	A Festschrift for Michael Russell. Interface Focus, 2019, 9, 20190107.	1.5	2
121	Chaos and periodicities in a climatic time series of the Iberian Margin. Chaos, 2020, 30, 063126.	1.0	2
122	Chemobrionics and Systems Chemistry. ChemSystemsChem, 2022, 4, .	1.1	2
123	Stranger than fiction. Nature, 2001, 412, 683-683.	13.7	1
124	Fronts between Rhythms: Spatiotemporal Dynamics of Extended Polyrhythmic Media. Physical Review Letters, 2007, 99, 174101.	2.9	1
125	Ice Film Morphologies and the Structure Zone Model. AIP Conference Proceedings, 2008, , .	0.3	1
126	Effects of microstructures on mesoscopic morphological transitions in deposition growth models. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2009, 465, 3875-3884.	1.0	1

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127	AGENT-BASED SOCIAL SIMULATION: A DYNAMICAL-SYSTEMS VIEWPOINT. Cybernetics and Systems, 2010, 41, 281-286.	1.6	1
128	Turbulent skin-friction drag on a slender body of revolution and Gray's Paradox. Journal of Physics: Conference Series, 2011, 318, 022042.	0.3	1
129	Runaway Electrification of Friable Self-Replicating Granular Matter. Langmuir, 2013, 29, 12874-12878.	1.6	1
130	Why Eastern snowflakes are six-sided while Western snowflakes are unique - a history of ice and snow - part 4. Weather, 2017, 72, 306-309.	0.6	1
131	Bonaventura Cavalieri and Bologna. Mathematical Intelligencer, 2018, 40, 21-29.	0.1	1
132	Radial spreading of turbulent bubble plumes. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190513.	1.6	1
133	Geometric mixing. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20200168.	1.6	1
134	Stokes at 200: a celebration of the remarkable achievements of Sir George Gabriel Stokes two hundred years after his birth. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190505.	1.6	1
135	The Transport of Small Particles by a Fluid. Lecture Notes in Physics, 2001, , 114-124.	0.3	1
136	The dynamics of a sensory apparatus: The case of the auditory system. AIP Conference Proceedings, 2007, , .	0.3	0
137	Microstructures in the Formation of Chemical Gardens. Materials Research Society Symposia Proceedings, 2008, 1097, 1097-GG07-08-01.	0.1	0
138	Ice polyamorphism in the minimal Mercedes-Benz model of water. Journal of Chemical Physics, 2012, 137, 244503.	1.2	0
139	Happy birthday Alan: a Festschrift for Alan Mackay. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2012, 370, 2823-2823.	1.6	0
140	Stokes, Tyndall, Ruskin and the nineteenth-century beginnings of climate science. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20200064.	1.6	0
141	Stokes at 200 (part 2). Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20200160.	1.6	0
142	Nonlinear dynamics determines the thermodynamic instability of condensed matter in vacuo. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2020, 378, 20190534.	1.6	0
143	Nonlinear Dynamics, the Missing Fundamental, and Harmony. Communications in Computer and Information Science, 2009, , 168-188.	0.4	0
144	Self-Assembled Structures Formed in CO₂-Enriched Atmospheres: A Case-Study for Martian Biomimetic Forms. Astrobiology, 0, , .	1.5	0