

# Rules for Biologically Inspired Adaptive Network Design

Science

327, 439-442

DOI: [10.1126/science.1177894](https://doi.org/10.1126/science.1177894)

Citation Report

#	ARTICLE	IF	CITATIONS
1	Risk management in spatio-temporally varying field by true slime mold. <i>Nonlinear Theory and Its Applications</i> IEICE, 2010, 1, 26-36.	0.4	12
2	çœŸæ€§ç²~èĒã,çãfjãf1/4ãfã@æ™,ç©²é—“æĒ-ã«ãfĒã,ãfŠãfŸã,ã,1ã«ã,ã,è†ã±çμ,,ç¹”çš,,è~ç©—. <i>Electrochemistry</i> , 2010, 78, 779-789.		
3	A model for oscillations and pattern formation in protoplasmic droplets of <i>Physarum polycephalum</i> . <i>European Physical Journal: Special Topics</i> , 2010, 191, 159-172.	1.2	27
4	The complexity and robustness of metro networks. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2010, 389, 3678-3691.	1.2	307
6	Brainless behavior: A myxomycete chooses a balanced diet. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 5267-5268.	3.3	17
7	Plasmodial vein networks of the slime mold <i>Physarum polycephalum</i> form regular graphs. <i>Physical Review E</i> , 2010, 82, 046113.	0.8	51
8	Anomalous physical transport in complex networks. <i>Physical Review E</i> , 2010, 82, 055101.	0.8	27
9	Amoeba-Inspired Network Design. <i>Science</i> , 2010, 327, 419-420.	6.0	28
10	Life System Modeling and Intelligent Computing. <i>Lecture Notes in Computer Science</i> , 2010, , .	1.0	5
11	RNEDE: Resilient network design environment. , 2010, , .		1
12	Pervasive Computing - The Next Technical Revolution. , 2011, , .		8
13	Algorithms in nature: the convergence of systems biology and computational thinking. <i>Molecular Systems Biology</i> , 2011, 7, 546.	3.2	93
14	An associative learning experiment using the plasmodium of <i>Physarum polycephalum</i> . <i>Nano Communication Networks</i> , 2011, 2, 99-105.	1.6	55
15	Bio-Inspired Self-Organizing Robotic Systems. <i>Studies in Computational Intelligence</i> , 2011, , .	0.7	7
16	Neuroevolution of Controllers for Self-Organizing Mobile Ad Hoc Networks. , 2011, , .		3
17	Centrality in Strategic Transportation Network Design. , 2011, , .		2
18	Untapped potential: exploiting fungi in bioremediation of hazardous chemicals. <i>Nature Reviews Microbiology</i> , 2011, 9, 177-192.	13.6	797
19	Biological principles for future internet architecture design. , 2011, 49, 44-52.		31

#	ARTICLE	IF	CITATIONS
20	Weak indirect effects inherent to nitrogen biogeochemical cycling within anthropogenic ecosystems: A network environ analysis. <i>Ecological Modelling</i> , 2011, 222, 3277-3284.	1.2	12
21	Networks in Plant Epidemiology: From Genes to Landscapes, Countries, and Continents. <i>Phytopathology</i> , 2011, 101, 392-403.	1.1	81
22	Greedy versus social: resource-competing oscillator network as a model of amoeba-based neurocomputer. <i>Natural Computing</i> , 2011, 10, 1219-1244.	1.8	6
23	An adaptive and robust biological network based on the vacant-particle transportation model. <i>Journal of Theoretical Biology</i> , 2011, 272, 187-200.	0.8	49
24	Slime mold inspired routing protocols for wireless sensor networks. <i>Swarm Intelligence</i> , 2011, 5, 183-223.	1.3	39
25	The emergence of synchronization behavior in <i>Physarum polycephalum</i> and its particle approximation. <i>BioSystems</i> , 2011, 103, 331-341.	0.9	22
26	Traffic optimization in railroad networks using an algorithm mimicking an amoeba-like organism, <i>Physarum plasmodium</i> . <i>BioSystems</i> , 2011, 105, 225-232.	0.9	52
27	Spatial networks. <i>Physics Reports</i> , 2011, 499, 1-101.	10.3	1,859
28	Characterization of Adaptation by Morphology in a Planar Biological Network of Plasmodial Slime Mold. <i>Journal of the Physical Society of Japan</i> , 2011, 80, 074801.	0.7	18
29	Self-organized network of phase oscillators coupled by activity-dependent interactions. <i>Physical Review E</i> , 2011, 84, 066109.	0.8	63
30	Adaptive transport network model based on sparse matrix process technics. , 2011, , .		0
31	Resilient design of recharging station networks for electric transportation vehicles. , 2011, , .		4
32	Flow-induced channel formation in the cytoplasm of motile cells. <i>Physical Review E</i> , 2011, 84, 016310.	0.8	31
33	A Biological Solution to a Fundamental Distributed Computing Problem. <i>Science</i> , 2011, 331, 183-185.	6.0	117
34	On emerging nuclear order. <i>Journal of Cell Biology</i> , 2011, 192, 711-721.	2.3	120
35	Optimisation in a natural system: Argentine ants solve the Towers of Hanoi. <i>Journal of Experimental Biology</i> , 2011, 214, 50-58.	0.8	81
36	Design of fault tolerant networks with agent-based simulation of <i>Physarum polycephalum</i> . , 2011, , .		17
37	Speedâ€“accuracy trade-offs during foraging decisions in the acellular slime mould <i>Physarum polycephalum</i> . <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2011, 278, 539-545.	1.2	60

#	ARTICLE	IF	CITATIONS
38	Caging the Blob: Using a Slime Mold to Teach Concepts about Barriers that Constrain the Movement of Organisms. American Biology Teacher, 2011, 73, 537-541.	0.1	2
39	Biology-inspired networking. Communications of the ACM, 2011, 54, 11-13.	3.3	5
40	Physarum optimization. , 2012, , .		4
42	An exemplar model of performance in the artificial grammar task: Holographic representation.. Canadian Journal of Experimental Psychology, 2012, 66, 98-105.	0.7	12
43	Biomimetics and textile materials. , 2012, , 467-480.		0
44	Morphogenesis of an extended phenotype: four-dimensional ant nest architecture. Journal of the Royal Society Interface, 2012, 9, 586-595.	1.5	25
45	Fair sharing of resources in a supply network with constraints. Physical Review E, 2012, 85, 046101.	0.8	9
46	Taxonomies of networks from community structure. Physical Review E, 2012, 86, 036104-36104.	0.8	79
47	A method to solve shortest path finding in directed graph based on an amoeboid organism. , 2012, , .		0
48	GUEST EDITOR'S NOTE: SPECIAL ISSUE ON HYPERCOMPUTATION, PHYSICS AND COMPUTATION. Parallel Processing Letters, 2012, 22, 1202003.	0.4	0
49	THE WORLD'S COLONIZATION AND TRADE ROUTES FORMATION AS IMITATED BY SLIME MOULD. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2012, 22, 1230028.	0.7	10
50	Modeling and hardware implementation of an amoeba-like cellular automaton. Bioinspiration and Biomimetics, 2012, 7, 036013.	1.5	39
51	A physarum-inspired algorithm for minimal exposure problem in wireless sensor networks. , 2012, , .		10
52	Physarum optimization: A biology-inspired algorithm for minimal exposure path problem in wireless sensor networks. , 2012, , .		20
53	An amoeboid algorithm for shortest path in fuzzy weighted networks. , 2012, , .		3
54	A Next-Generation Sequencing Approach to Study the Transcriptomic Changes during the Differentiation of Physarum at the Single-Cell Level. Gene Regulation and Systems Biology, 2012, 6, GRSB.S10224.	2.3	7
55	Self-Organizing Agents for Efficient Sustainable Resource Utilization. , 2012, , .		1
56	Simplicity from Complexity. Journal of Physics: Conference Series, 2012, 381, 012009.	0.3	1

#	ARTICLE	IF	CITATIONS
57	Multi-scaled adaptability in motility and pattern formation of the <i>Physarum plasmodium</i> . <i>International Journal of Bio-Inspired Computation</i> , 2012, 4, 131.	0.6	12
58	Spatial effects in real networks: Measures, null models, and applications. <i>Physical Review E</i> , 2012, 86, 066110.	0.8	10
59	Modular pharmacology: the next paradigm in drug discovery. <i>Expert Opinion on Drug Discovery</i> , 2012, 7, 667-677.	2.5	47
60	Meso-scale turbulence in living fluids. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 14308-14313.	3.3	747
61	<i>Physarum polycephalum</i> Percolation as a Paradigm for Topological Phase Transitions in Transportation Networks. <i>Physical Review Letters</i> , 2012, 109, 078103.	2.9	44
62	Temporal dynamics and network analysis. <i>Methods in Ecology and Evolution</i> , 2012, 3, 958-972.	2.2	194
63	Synthetic multicellularity. <i>Trends in Cell Biology</i> , 2012, 22, 617-623.	3.6	13
65	Bio-Inspired Models of Networks, Information, and Computing Systems. <i>Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering</i> , 2012, , .	0.2	0
66	Web Information Systems and Technologies. <i>Lecture Notes in Business Information Processing</i> , 2012, , .	0.8	0
67	Local phase approaches to extract biomedical networks. , 2012, , .		0
68	Quantifying Loopy Network Architectures. <i>PLoS ONE</i> , 2012, 7, e37994.	1.1	66
69	Biomimetics and textile materials. , 2012, , 689-700.		0
71	Information networks for disease: commonalities in human management networks and within-host signalling networks. <i>European Journal of Plant Pathology</i> , 2012, 133, 75-88.	0.8	31
72	<i>Physarum</i> can compute shortest paths. <i>Journal of Theoretical Biology</i> , 2012, 309, 121-133.	0.8	77
73	Self-organized network design by link survivals and shortcuts. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2012, 391, 872-879.	1.2	3
74	Federation Lifecycle Management Incorporating Coordination of Bio-inspired Self-management Processes. <i>Journal of Network and Systems Management</i> , 2013, 21, 650-676.	3.3	1
75	Fault tolerant network design inspired by <i>Physarum polycephalum</i> . <i>Natural Computing</i> , 2013, 12, 277-289.	1.8	17
76	Biomimetic Self-Organization and Self-Healing. , 2013, , 333-358.		7

#	ARTICLE	IF	CITATIONS
77	Networks and the City. <i>Architectural Design</i> , 2013, 83, 112-119.	0.1	1
79	Amoeboid organism uses extracellular secretions to make smart foraging decisions. <i>Behavioral Ecology</i> , 2013, 24, 812-818.	1.0	51
80	Solving 0-1 knapsack problems based on amoeboid organism algorithm. <i>Applied Mathematics and Computation</i> , 2013, 219, 9959-9970.	1.4	71
81	Adaptation and Optimization of Biological Transport Networks. <i>Physical Review Letters</i> , 2013, 111, 138701.	2.9	97
82	Morphological similarity of road networks and cracks. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2013, 392, 4127-4133.	1.2	7
83	Models of settlement hierarchy based on partial evidence. <i>Journal of Archaeological Science</i> , 2013, 40, 2415-2427.	1.2	76
84	Amoeba-based computing for traveling salesman problem: Long-term correlations between spatially separated individual cells of <i>Physarum polycephalum</i> . <i>BioSystems</i> , 2013, 112, 1-10.	0.9	49
85	An adaptive amoeba algorithm for constrained shortest paths. <i>Expert Systems With Applications</i> , 2013, 40, 7607-7616.	4.4	31
86	Solving the Towers of Hanoi – how an amoeboid organism efficiently constructs transport networks. <i>Journal of Experimental Biology</i> , 2013, 216, 1546-51.	0.8	41
87	Epigenetic inheritance and plasticity: The responsive germline. <i>Progress in Biophysics and Molecular Biology</i> , 2013, 111, 99-107.	1.4	177
88	Accessibility in networks: A useful measure for understanding social insect nest architecture. <i>Chaos, Solitons and Fractals</i> , 2013, 46, 38-45.	2.5	13
89	Genetic Variation and the Evolution of Consensus in Digital Organisms. <i>IEEE Transactions on Evolutionary Computation</i> , 2013, 17, 403-417.	7.5	57
90	A biologically inspired solution for fuzzy shortest path problems. <i>Applied Soft Computing Journal</i> , 2013, 13, 2356-2363.	4.1	47
91	Route selection for emergency logistics management: A bio-inspired algorithm. <i>Safety Science</i> , 2013, 54, 87-91.	2.6	100
93	Amoeba-Inspired Nanoarchitectonic Computing: Solving Intractable Computational Problems Using Nanoscale Photoexcitation Transfer Dynamics. <i>Langmuir</i> , 2013, 29, 7557-7564.	1.6	59
94	Network geometry and the urban railway system: the potential benefits to geographers of harnessing inputs from “outsiders”. <i>Journal of Transport Geography</i> , 2013, 33, 85-94.	2.3	13
95	Examining Efficiency in Bioinspired Design. , 2013, , .		2
96	A Novel <i>Physarum</i> -Inspired Routing Protocol for Wireless Sensor Networks. <i>International Journal of Distributed Sensor Networks</i> , 2013, 9, 483581.	1.3	14

#	ARTICLE	IF	CITATIONS
97	A Fluid-Filled Soft Robot That Exhibits Spontaneous Switching Among Versatile Spatiotemporal Oscillatory Patterns Inspired by the True Slime Mold. <i>Artificial Life</i> , 2013, 19, 67-78.	1.0	12
98	Current-reinforced random walks for constructing transport networks. <i>Journal of the Royal Society Interface</i> , 2013, 10, 20120864.	1.5	30
99	From organized internal traffic to collective navigation of bacterial swarms. <i>New Journal of Physics</i> , 2013, 15, 125019.	1.2	26
100	Functional organization of the vascular network of <i>Physarum polycephalum</i> . <i>Physical Biology</i> , 2013, 10, 026003.	0.8	36
101	P-iRP: Physarum-Inspired Routing Protocol for Wireless Sensor Networks. , 2013, , .		7
102	Amoeba-inspired computing architecture implemented using charge dynamics in parallel capacitance network. <i>Applied Physics Letters</i> , 2013, 103, 163703.	1.5	17
103	Applicability of Bio-inspired and Graph-Theoretic Algorithms for the Design of Complex Fault-Tolerant Graphs. , 2013, , .		3
104	True-slime-mould-inspired hydrostatically coupled oscillator system exhibiting versatile behaviours. <i>Bioinspiration and Biomimetics</i> , 2013, 8, 035001.	1.5	14
105	Random network peristalsis in <i>Physarum polycephalum</i> organizes fluid flows across an individual. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 13306-13311.	3.3	131
106	Hybrid Biological-Digital Systems in Artistic and Entertainment Computing. <i>Leonardo</i> , 2013, 46, 151-158.	0.2	13
107	A Flexible Mathematical Model Platform for Studying Branching Networks: Experimentally Validated Using the Model Actinomycete, <i>Streptomyces coelicolor</i> . <i>PLoS ONE</i> , 2013, 8, e54316.	1.1	22
108	Synthetic Biology: opportunities for Chilean bioindustry and education. <i>Biological Research</i> , 2013, 46, 383-393.	1.5	3
109	An Improved <i>Physarum polycephalum</i> Algorithm for the Shortest Path Problem. <i>Scientific World Journal</i> , The, 2014, 2014, 1-9.	0.8	7
110	An Active Poroelastic Model for Mechanochemical Patterns in Protoplasmic Droplets of <i>Physarum polycephalum</i> . <i>PLoS ONE</i> , 2014, 9, e99220.	1.1	42
111	A Bio-Inspired Method for the Constrained Shortest Path Problem. <i>Scientific World Journal</i> , The, 2014, 2014, 1-11.	0.8	12
112	P-bRS: A <i>Physarum</i> -Based Routing Scheme for Wireless Sensor Networks. <i>Scientific World Journal</i> , The, 2014, 2014, 1-7.	0.8	3
113	Kanizsa illusory contours appearing in the plasmodium pattern of <i>Physarum polycephalum</i> . <i>Frontiers in Cellular and Infection Microbiology</i> , 2014, 4, 10.	1.8	14
115	A Biology-Based Algorithm to Minimal Exposure Problem of Wireless Sensor Networks. <i>IEEE Transactions on Network and Service Management</i> , 2014, 11, 417-430.	3.2	144

#	ARTICLE	IF	CITATIONS
116	An improved bio-inspired algorithm for the directed shortest path problem. <i>Bioinspiration and Biomimetics</i> , 2014, 9, 046016.	1.5	3
117	A universal optimization strategy for ant colony optimization algorithms based on the Physarum-inspired mathematical model. <i>Bioinspiration and Biomimetics</i> , 2014, 9, 036006.	1.5	32
118	Dynamics of frontal extension of an amoeboid cell. <i>Europhysics Letters</i> , 2014, 108, 50010.	0.7	12
119	Growing Self-Organized Design of Efficient and Robust Complex Networks. , 2014, , .		5
120	High-frequency detection of cell activity of <i>Physarum polycephalum</i> by a planar open gate AlGaIn/GaN HEMT. <i>Journal Physics D: Applied Physics</i> , 2014, 47, 425401.	1.3	4
121	A Bio-Inspired Algorithm for Route Selection in Wireless Sensor Networks. <i>IEEE Communications Letters</i> , 2014, 18, 2019-2022.	2.5	11
122	A bio-inspired algorithm for identification of critical components in the transportation networks. <i>Applied Mathematics and Computation</i> , 2014, 248, 18-27.	1.4	15
123	Self-organisation and motion in plants. <i>Proceedings of SPIE</i> , 2014, , .	0.8	0
124	Study of the Use of a Genetic Algorithm to Improve Networked System-of-Systems Resilience. <i>Procedia Computer Science</i> , 2014, 36, 49-56.	1.2	8
125	A Nanophotonic Computing Paradigm: Problem-Solving and Decision-Making Systems Using Spatiotemporal Photoexcitation Transfer Dynamics. <i>Nano-optics and Nanophotonics</i> , 2014, , 223-244.	0.2	0
126	Emerging Biology-based CI Algorithms. <i>Intelligent Systems Reference Library</i> , 2014, , 217-317.	1.0	3
127	Physarum Learner: A bio-inspired way of learning structure from data. <i>Expert Systems With Applications</i> , 2014, 41, 5353-5370.	4.4	10
128	Preferences and tradeoffs in nectar temperature and nectar concentration in the Asian hive bee <i>Apis cerana</i> . <i>Behavioral Ecology and Sociobiology</i> , 2014, 68, 13-20.	0.6	17
129	Analog feedback in <i>Euglena</i> -based neural network computing “ Enhancing solution-search capability through reaction threshold diversity among cells. <i>Neurocomputing</i> , 2014, 140, 291-298.	3.5	5
130	Topological properties of robust biological and computational networks. <i>Journal of the Royal Society Interface</i> , 2014, 11, 20140283.	1.5	26
131	Competing views on cancer. <i>Journal of Biosciences</i> , 2014, 39, 281-302.	0.5	49
132	Adaptive coupling induced multi-stable states in complex networks. <i>Physica D: Nonlinear Phenomena</i> , 2014, 267, 36-48.	1.3	26
134	The ecological basis of morphogenesis: branching patterns in swarming colonies of bacteria. <i>New Journal of Physics</i> , 2014, 16, 015006.	1.2	31

#	ARTICLE	IF	CITATIONS
135	Rapid Physarum Algorithm for shortest path problem. <i>Applied Soft Computing Journal</i> , 2014, 23, 19-26.	4.1	30
136	Easily Repairable Networks: Reconnecting Nodes after Damage. <i>Physical Review Letters</i> , 2014, 113, 138701.	2.9	21
137	Collective exploitation of a temporally unpredictable food source: mushroom harvesting by the ant <i>Euprenolepis procera</i> . <i>Animal Behaviour</i> , 2014, 89, 71-77.	0.8	5
138	Amoeba-inspired Tug-of-War algorithms for explorationâ€œexploitation dilemma in extended Bandit Problem. <i>BioSystems</i> , 2014, 117, 1-9.	0.9	6
139	Foraging strategies of the acellular slime moulds <i>Didymium iridis</i> and <i>Didymium bahiense</i> . <i>Fungal Ecology</i> , 2014, 11, 29-36.	0.7	8
140	Modeling Corridor and Growth Pole Coevolution in Regional Transportation Network. <i>Transportation Research Record</i> , 2014, 2466, 144-152.	1.0	4
141	Supervised learning from human performance at the computationally hard problem of optimal traffic signal control on a network of junctions. <i>Royal Society Open Science</i> , 2014, 1, 140211.	1.1	0
142	Smartphone Application for Assessing Various Aspects of Urban Public Transport. <i>Transportation Research Procedia</i> , 2014, 3, 185-194.	0.8	12
143	Complex Network Method of Evaluating Resilience in Surface Transportation Networks. <i>Transportation Research Record</i> , 2014, 2467, 120-128.	1.0	43
144	Phenotypic variability in unicellular organisms: from calcium signalling to social behaviour. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2015, 282, 20152322.	1.2	24
145	Structural self-assembly and avalanchelike dynamics in locally adaptive networks. <i>Physical Review E</i> , 2015, 92, 012801.	0.8	10
146	Encapsulating Urban Traffic Rhythms into Road Networks. <i>Scientific Reports</i> , 2014, 4, 4141.	1.6	36
148	A Biologically Inspired Network Design Model. <i>Scientific Reports</i> , 2015, 5, 10794.	1.6	23
149	DeFiNe: an optimisation-based method for robust disentangling of filamentous networks. <i>Scientific Reports</i> , 2015, 5, 18267.	1.6	14
150	Why closing an Airport May not Matter â€œ The Impact of the Relocation of TXL Airport on the Bus Network of Berlin. <i>Procedia Computer Science</i> , 2015, 52, 896-901.	1.2	3
151	Migratory behaviour of <i>Physarum polycephalum</i> microplasmidia. <i>European Physical Journal: Special Topics</i> , 2015, 224, 1199-1214.	1.2	25
152	Basic Transitions of <i>Physarum Polycephalum</i> . , 2015, , .		1
153	Conductivity patterning with <i>Physarum polycephalum</i> : natural growth and deflecting. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2015, 12, 197-201.	0.8	7

#	ARTICLE	IF	CITATIONS
154	Local cost minimization in ant transport networks: from small-scale data to large-scale trade-offs. <i>Journal of the Royal Society Interface</i> , 2015, 12, 20150780.	1.5	14
155	Knowing power grids and understanding complexity science. <i>International Journal of Critical Infrastructures</i> , 2015, 11, 4.	0.1	20
156	Plant hairy root cultures as plasmodium modulators of the slime mold emergent computing substrate <i>Physarum polycephalum</i> . <i>Frontiers in Microbiology</i> , 2015, 6, 720.	1.5	13
157	Elements of the cellular metabolic structure. <i>Frontiers in Molecular Biosciences</i> , 2015, 2, 16.	1.6	33
158	Decreasing-Rate Pruning Optimizes the Construction of Efficient and Robust Distributed Networks. <i>PLoS Computational Biology</i> , 2015, 11, e1004347.	1.5	43
159	Construction of living cellular automata using the <i>Physarum</i> plasmodium. <i>International Journal of General Systems</i> , 2015, 44, 292-304.	1.2	18
160	From Pattern Formation to Material Computation. <i>Emergence, Complexity and Computation</i> , 2015, , .	0.2	22
161	Computational Intelligence, Medicine and Biology. <i>Studies in Computational Intelligence</i> , 2015, , .	0.7	0
162	Advances in Swarm and Computational Intelligence. <i>Lecture Notes in Computer Science</i> , 2015, , .	1.0	3
163	Cellular automaton model of crowd evacuation inspired by slime mould. <i>International Journal of General Systems</i> , 2015, 44, 354-391.	1.2	37
164	Amoeba-inspired nanoarchitectonic computing implemented using electrical Brownian ratchets. <i>Nanotechnology</i> , 2015, 26, 234001.	1.3	31
165	Enhancing adaptability of amoeboid robot by synergetically coupling two decentralized controllers inspired by true slime mold. <i>Adaptive Behavior</i> , 2015, 23, 109-121.	1.1	3
166	On the role of the plasmodial cytoskeleton in facilitating intelligent behavior in slime mold <i>Physarum polycephalum</i> . <i>Communicative and Integrative Biology</i> , 2015, 8, e1059007.	0.6	21
167	On the Efficiency of Nature-Inspired Algorithms for Generation of Fault-Tolerant Graphs. , 2015, , .		7
168	A Logistic Distribution Routes Solving Strategy Based on the <i>Physarum</i> Network and Ant Colony Optimization Algorithm. , 2015, , .		1
169	Toward a Methodology for Systematically Generating Energy- and Materials-Efficient Concepts Using Biological Analogies. <i>Journal of Mechanical Design, Transactions of the ASME</i> , 2015, 137, .	1.7	7
170	Ants build transportation networks that optimize cost and efficiency at the expense of robustness. <i>Behavioral Ecology</i> , 2015, 26, 223-231.	1.0	25
171	Self-organization of complex networks as a dynamical system. <i>Physical Review E</i> , 2015, 91, 012908.	0.8	12

#	ARTICLE	IF	CITATIONS
172	Correlation between electric potential and peristaltic behavior in Physarum polycephalum. BioSystems, 2015, 132-133, 13-19.	0.9	4
173	Sender-receiver systems and applying information theory for quantitative synthetic biology. Current Opinion in Biotechnology, 2015, 31, 101-107.	3.3	26
174	Structuring precedes extension in percolating Physarum polycephalum networks. Nano Communication Networks, 2015, 6, 87-95.	1.6	14
175	Brainless but Multi-Headed: Decision Making by the Acellular Slime Mould Physarum polycephalum. Journal of Molecular Biology, 2015, 427, 3734-3743.	2.0	65
177	Feedback-Induced Phase Transitions in Active Heterogeneous Conductors. Physical Review Letters, 2015, 114, 134501.	2.9	7
178	Patterns of cell thickness oscillations during directional migration of Physarum polycephalum. European Biophysics Journal, 2015, 44, 349-358.	1.2	24
179	Robustness of spatial micronetworks. Physical Review E, 2015, 91, 042813.	0.8	11
180	Distributed information processing in biological and computational systems. Communications of the ACM, 2015, 58, 94-102.	3.3	68
181	Towards a slime Mould-FPGA interface. Biomedical Engineering Letters, 2015, 5, 51-57.	2.1	19
182	Physarum-Inspired Applications in Graph-Optimization Problems. Parallel Processing Letters, 2015, 25, 1540005.	0.4	9
183	A physical perspective on cytoplasmic streaming. Interface Focus, 2015, 5, 20150030.	1.5	127
184	An anticipation mechanism for the shortest path problem based on Physarum polycephalum. International Journal of General Systems, 2015, 44, 326-340.	1.2	6
185	Slime moulds use heuristics based on within-patch experience to decide when to leave. Journal of Experimental Biology, 2015, 218, 1175-9.	0.8	18
186	Hardware Acceleration of Cellular Automata <i>Physarum polycephalum</i> Model. Parallel Processing Letters, 2015, 25, 1540006.	0.4	27
187	Review of nature-inspired methods for wake-up scheduling in wireless sensor networks. Swarm and Evolutionary Computation, 2015, 25, 100-118.	4.5	30
188	Real-time and turn-based biology online experimentation. , 2015, , .		3
189	Spatial networks evolving to reduce length. Journal of Complex Networks, 2015, 3, 411-430.	1.1	0
190	Interactive Cloud Experimentation for Biology. , 2015, , .		30

#	ARTICLE	IF	CITATIONS
191	Physarum plasmodium perceives ambiguous stimulus as either attractant or repellent. AIP Conference Proceedings, 2015, , .	0.3	1
192	Survey and evaluation of neural computation models for bio-integrated systems. Nano Communication Networks, 2015, 6, 155-165.	1.6	5
193	Information integration and multiattribute decision making in non-neuronal organisms. Animal Behaviour, 2015, 100, 44-50.	0.8	52
194	Physarum Optimization: A Biology-Inspired Algorithm for the Steiner Tree Problem in Networks. IEEE Transactions on Computers, 2015, 64, 818-831.	2.4	139
195	A new model to imitate the foraging behavior of Physarum polycephalum on a nutrient-poor substrate. Neurocomputing, 2015, 148, 63-69.	3.5	9
196	Host diversity affects the abundance of the extraradical arbuscular mycorrhizal network. New Phytologist, 2015, 205, 1485-1491.	3.5	23
197	Nonlinearity in cytoplasm viscosity can generate an essential symmetry breaking in cellular behaviors. Journal of Theoretical Biology, 2015, 364, 260-265.	0.8	2
198	Functional fusion of living systems with synthetic electrode interfaces. Beilstein Journal of Nanotechnology, 2016, 7, 296-301.	1.5	9
199	Mesoscale analyses of fungal networks as an approach for quantifying phenotypic traits. Journal of Complex Networks, 2016, , cnv034.	1.1	11
200	Synthetic biology routes to bio-artificial intelligence. Essays in Biochemistry, 2016, 60, 381-391.	2.1	34
201	1/ noise analyses of urbanization effects on streamflow characteristics. Hydrological Processes, 2016, 30, 1651-1664.	1.1	7
202	Stochastic cycle selection in active flow networks. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 8200-8205.	3.3	23
203	Optimal trajectory planning for multiple asteroid tour mission by means of an incremental bio-inspired tree search algorithm. , 2016, , .		1
204	From Cellular Attractor Selection to Adaptive Signal Control for Traffic Networks. Scientific Reports, 2016, 6, 23048.	1.6	10
205	Direct transfer of learned behaviour via cell fusion in non-neural organisms. Proceedings of the Royal Society B: Biological Sciences, 2016, 283, 20162382.	1.2	50
206	On the quality of graphs generated by swarm algorithms. , 2016, , .		1
207	Ideality & Bio-Inspired Based Collaborative Bibliographic Search Method. Procedia CIRP, 2016, 39, 138-143.	1.0	0
208	A Physarum-inspired approach to supply chain network design. Science China Information Sciences, 2016, 59, 1.	2.7	25

#	ARTICLE	IF	CITATIONS
209	A biologically inspired immunization strategy for network epidemiology. <i>Journal of Theoretical Biology</i> , 2016, 400, 92-102.	0.8	14
210	Control principles of complex systems. <i>Reviews of Modern Physics</i> , 2016, 88, .	16.4	452
211	Global Optimization, Local Adaptation, and the Role of Growth in Distribution Networks. <i>Physical Review Letters</i> , 2016, 117, 138301.	2.9	94
212	Collective behaviour and swarm intelligence in slime moulds. <i>FEMS Microbiology Reviews</i> , 2016, 40, 798-806.	3.9	53
213	Study on network structure of leaf venation. <i>Transactions of the JSME (in Japanese)</i> , 2016, 82, 15-00386-15-00386.	0.1	0
214	Pruning to Increase Taylor Dispersion in <i>Physarum polycephalum</i> Networks. <i>Physical Review Letters</i> , 2016, 117, 178103.	2.9	37
215	BIO-MIMETIC DESIGN FOR OPTIMAL SHAPE AND STRUCTURE BASED ON THE ADAPTABILITY OF USE-AND-GROWTH RULE IN A PRIMITIVE ORGANISM OF <i>PHYSARUM</i> . <i>Journal of Japan Society of Civil Engineers Ser A2 (Applied Mechanics (AM))</i> , 2016, 72, I_3-I_11.	0.1	0
216	Extracting Hidden Hierarchies in 3D Distribution Networks. <i>Physical Review X</i> , 2016, 6, .	2.8	7
217	Decision-making ability of <i>Physarum polycephalum</i> enhanced by its coordinated spatiotemporal oscillatory dynamics. <i>Bioinspiration and Biomimetics</i> , 2016, 11, 036001.	1.5	10
218	Decision-making without a brain: how an amoeboid organism solves the two-armed bandit. <i>Journal of the Royal Society Interface</i> , 2016, 13, 20160030.	1.5	73
219	Biomimetics in production organization – A literature study and framework. <i>Journal of Bionic Engineering</i> , 2016, 13, 200-212.	2.7	11
220	Notes on a PDE system for biological network formation. <i>Nonlinear Analysis: Theory, Methods &amp; Applications</i> , 2016, 138, 127-155.	0.6	30
221	Spatially self-organized resilient networks by a distributed cooperative mechanism. <i>Physica A: Statistical Mechanics and Its Applications</i> , 2016, 457, 255-269.	1.2	4
222	<i>Physarum</i> Learner: A Slime Mold Inspired Structural Learning Approach. <i>Emergence, Complexity and Computation</i> , 2016, , 489-517.	0.2	0
223	Slime Mould Inspired Applications on Graph-Optimization Problems. <i>Emergence, Complexity and Computation</i> , 2016, , 519-562.	0.2	7
224	Cellular Automata Models Simulating Slime Mould Computing. <i>Emergence, Complexity and Computation</i> , 2016, , 563-594.	0.2	6
225	Memristive and Memcapacitive Models of <i>Physarum</i> Learning. <i>Emergence, Complexity and Computation</i> , 2016, , 413-422.	0.2	2
226	Decision-Making at the Cellular Level: The <i>Physarum</i> Paradigm. <i>Emergence, Complexity and Computation</i> , 2016, , 705-721.	0.2	0

#	ARTICLE	IF	CITATIONS
227	Oscillations and uniaxial mechanochemical waves in a model of an active poroelastic medium: Application to deformation patterns in protoplasmic droplets of <i>Physarum polycephalum</i> . <i>Physica D: Nonlinear Phenomena</i> , 2016, 318-319, 58-69.	1.3	21
228	<i>Physarum</i> -Inspired Electronic and Nanoelectronic Computing Systems. <i>Emergence, Complexity and Computation</i> , 2016, , 109-132.	0.2	0
229	Parallel computation with molecular-motor-propelled agents in nanofabricated networks. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 2591-2596.	3.3	116
230	The <i>Physarum polycephalum</i> Genome Reveals Extensive Use of Prokaryotic Two-Component and Metazoan-Type Tyrosine Kinase Signaling. <i>Genome Biology and Evolution</i> , 2016, 8, 109-125.	1.1	87
231	Applications of multi-agent slime mould computing. <i>International Journal of Parallel, Emergent and Distributed Systems</i> , 2016, 31, 420-449.	0.7	10
232	Evaluation of French motorway network in relation to slime mould transport networks. <i>Environment and Planning B: Urban Analytics and City Science</i> , 2017, 44, 364-383.	1.0	5
233	The art of imitating life: The potential contribution of biomimicry in shaping the future of our cities. <i>Environment and Planning B: Urban Analytics and City Science</i> , 2017, 44, 120-140.	1.0	22
234	Solving NP-Hard Problems with <i>Physarum</i> -Based Ant Colony System. <i>IEEE/ACM Transactions on Computational Biology and Bioinformatics</i> , 2017, 14, 108-120.	1.9	66
235	A new multi-agent system to simulate the foraging behaviors of <i>Physarum</i> . <i>Natural Computing</i> , 2017, 16, 15-29.	1.8	27
236	An intelligent <i>physarum</i> solver for supply chain network design under profit maximization and oligopolistic competition. <i>International Journal of Production Research</i> , 2017, 55, 244-263.	4.9	39
237	Materials learning from life: concepts for active, adaptive and autonomous molecular systems. <i>Chemical Society Reviews</i> , 2017, 46, 5588-5619.	18.7	375
238	Experience-Oriented Intelligence for Internet of Things. <i>Cybernetics and Systems</i> , 2017, 48, 162-181.	1.6	7
239	Experimental models for Murray's law. <i>Journal Physics D: Applied Physics</i> , 2017, 50, 024001.	1.3	18
241	Continuum Modeling of Biological Network Formation. <i>Modeling and Simulation in Science, Engineering and Technology</i> , 2017, , 1-48.	0.4	9
242	An adaptive amoeba algorithm for shortest path tree computation in dynamic graphs. <i>Information Sciences</i> , 2017, 405, 123-140.	4.0	13
243	Characterizing networks formed by <i>P. polycephalum</i> . <i>Journal Physics D: Applied Physics</i> , 2017, 50, 224002.	1.3	9
244	A <i>Physarum</i> -Inspired Ant Colony Optimization for Community Mining. <i>Lecture Notes in Computer Science</i> , 2017, , 737-749.	1.0	2
245	Active matter logic for autonomous microfluidics. <i>Nature Communications</i> , 2017, 8, 15169.	5.8	43

#	ARTICLE	IF	CITATIONS
246	Mechanism of signal propagation in <i>Physarum polycephalum</i> . Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 5136-5141.	3.3	73
247	Role of mechanics in the appearance of oscillatory instability and standing waves of the mechanochemical activity in the <i>Physarum polycephalum</i> plasmodium. Journal Physics D: Applied Physics, 2017, 50, 213002.	1.3	18
248	Transition from isotropic to digitated growth modulates network formation in <i>Physarum polycephalum</i> . Journal Physics D: Applied Physics, 2017, 50, 014002.	1.3	9
249	Of Makerspaces and Hacklabs: Emergence, Experiment and Ontological Theatre at the Edinburgh Hacklab, Scotland. Scottish Geographical Journal, 2017, 133, 130-154.	0.4	12
250	The Mycelium as a Network. Microbiology Spectrum, 2017, 5, .	1.2	57
251	Response to various periods of mechanical stimuli in <i>Physarum</i> plasmodium. Journal Physics D: Applied Physics, 2017, 50, 254002.	1.3	3
252	Automated analysis of <i>Physarum</i> network structure and dynamics. Journal Physics D: Applied Physics, 2017, 50, 254005.	1.3	19
253	Energy-saving with low dimensional network in <i>Physarum</i> plasmodium. Journal Physics D: Applied Physics, 2017, 50, 154003.	1.3	10
254	The Emergence MAC (E-MAC) protocol for wireless sensor networks. Engineering Applications of Artificial Intelligence, 2017, 62, 17-25.	4.3	8
255	Modeling <i>Physarum</i> space exploration using memristors. Journal Physics D: Applied Physics, 2017, 50, 174004.	1.3	18
256	<i>Physarum</i> solver: a bio-inspired method for sustainable supply chain network design problem. Annals of Operations Research, 2017, 254, 533-552.	2.6	16
257	Spatial mapping reveals multi-step pattern of wound healing in <i>Physarum polycephalum</i> . Journal Physics D: Applied Physics, 2017, 50, 434005.	1.3	18
258	Balancing building and maintenance costs in growing transport networks. Physical Review E, 2017, 96, 032316.	0.8	7
259	A hybrid evolutionary algorithm for community detection. , 2017, , .		3
260	HÅnsel, Gretel and the slime mouldâ€”how an external spatial memory aids navigation in complex environments. Journal Physics D: Applied Physics, 2017, 50, 414003.	1.3	12
261	<i>Physarum polycephalum</i> â€”a new take on a classic model system. Journal Physics D: Applied Physics, 2017, 50, 413001.	1.3	37
262	Current reinforcement model reproduces centerâ€”center vein trajectory of <i>Physarum polycephalum</i> . Development Growth and Differentiation, 2017, 59, 465-470.	0.6	3
264	Mode Selection in Compressible Active Flow Networks. Physical Review Letters, 2017, 119, 028102.	2.9	9

#	ARTICLE	IF	CITATIONS
265	High-Resolution Laser Scanning Reveals Plant Architectures that Reflect Universal Network Design Principles. <i>Cell Systems</i> , 2017, 5, 53-62.e3.	2.9	44
266	A Physarum-inspired optimization algorithm for load-shedding problem. <i>Applied Soft Computing Journal</i> , 2017, 61, 239-255.	4.1	28
267	Network-based approaches to quantify multicellular development. <i>Journal of the Royal Society Interface</i> , 2017, 14, 20170484.	1.5	23
268	Bifurcation in the chemotactic behavior of <i>Physarum plasmodium</i> . <i>AIP Conference Proceedings</i> , 2017, , .	0.3	0
269	Design and Syntheses of Molecules for Nonlinear and Nonsymmetric Single-Molecule Electric Properties. <i>Advances in Atom and Single Molecule Machines</i> , 2017, , 419-437.	0.0	0
270	Organic Memristor Based Elements for Bio-inspired Computing. <i>Emergence, Complexity and Computation</i> , 2017, , 469-496.	0.2	10
271	Oscillation-Based Slime Mould Electronic Circuit Model for Maze-Solving Computations. <i>IEEE Transactions on Circuits and Systems I: Regular Papers</i> , 2017, 64, 1552-1563.	3.5	30
272	A revised model of fluid transport optimization in <i>Physarum polycephalum</i> . <i>Journal of Mathematical Biology</i> , 2017, 74, 567-581.	0.8	7
273	Organization and scaling in water supply networks. <i>Physical Review E</i> , 2017, 96, 062317.	0.8	8
274	Physarum-energy optimization algorithm. <i>Soft Computing</i> , 2019, 23, 871.	2.1	6
276	Molecular Techniques and Current Research Approaches. , 2017, , 145-173.		4
277	Prompt decision method for ground-state searches of natural computing architecture using 2D Ising spin model. , 2017, , .		7
278	Searching strategy of slime mold and its mathematical model. , 2017, , .		0
279	A bio-inspired algorithm for solving bi-objective shortest-path problem. <i>International Journal of Information and Communication Technology</i> , 2017, 10, 406.	0.1	0
280	The Mycelium as a Network. , 0, , 335-367.		15
281	Transitions from Trees to Cycles in Adaptive Flow Networks. <i>Frontiers in Physics</i> , 2017, 5, .	1.0	13
282	The role of noise in self-organized decision making by the true slime mold <i>Physarum polycephalum</i> . <i>PLoS ONE</i> , 2017, 12, e0172933.	1.1	23
283	Short-term activity cycles impede information transmission in ant colonies. <i>PLoS Computational Biology</i> , 2017, 13, e1005527.	1.5	17

#	ARTICLE	IF	CITATIONS
284	A new computing architecture using Ising spin model implemented on FPGA for solving combinatorial optimization problems. , 2017, , .		8
285	Multiscale Dynamical Network Mechanisms Underlying Aging from Birth to Death. SSRN Electronic Journal, 0, , .	0.4	0
286	Introducing the slime mold graph repository. Journal Physics D: Applied Physics, 2017, 50, 264001.	1.3	8
287	Physarum-inspired multi-parameter adaptive routing protocol for coal mine hybrid wireless mesh networks. International Journal of Distributed Sensor Networks, 2018, 14, 155014771875921.	1.3	0
288	Analysis of dynamically stable patterns in a maze-like corridor using the Wasserstein metric. Scientific Reports, 2018, 8, 6367.	1.6	4
289	Fluid flows shaping organism morphology. Philosophical Transactions of the Royal Society B: Biological Sciences, 2018, 373, 20170112.	1.8	26
290	Biologicalisation: Biological transformation in manufacturing. CIRP Journal of Manufacturing Science and Technology, 2018, 21, 1-32.	2.3	130
291	Numerical approximation of nonhomogeneous boundary conditions on networks for a hyperbolic system of chemotaxis modeling the Physarum dynamics. Journal of Computational Methods in Sciences and Engineering, 2018, 18, 85-115.	0.1	8
292	Indentation analysis of active viscoelastic microplasmodia of <i>P. polycephalum</i> . Journal Physics D: Applied Physics, 2018, 51, 024005.	1.3	10
293	Slime mould: The fundamental mechanisms of biological cognition. BioSystems, 2018, 165, 57-70.	0.9	67
294	Cyber-Physical Laboratories in Engineering and Science Education. , 2018, , .		21
295	Slime Mould Inspired Models for Path Planning: Collective and Structural Approaches. Emergence, Complexity and Computation, 2018, , 293-327.	0.2	1
296	Towards a Stationary Monge-Kantorovich Dynamics: The Physarum Polycephalum Experience. SIAM Journal on Applied Mathematics, 2018, 78, 651-676.	0.8	24
297	Physarum-Inspired Solutions to Network Optimization Problems. Emergence, Complexity and Computation, 2018, , 329-363.	0.2	1
298	When the Path Is Never Shortest: A Reality Check on Shortest Path Biocomputation. Emergence, Complexity and Computation, 2018, , 379-399.	0.2	0
299	Network Community Detection Based on the <i>Physarum</i> -Inspired Computational Framework. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2018, 15, 1916-1928.	1.9	38
300	A Bio-Inspired Approach to Traffic Network Equilibrium Assignment Problem. IEEE Transactions on Cybernetics, 2018, 48, 1304-1315.	6.2	31
301	Pioneering topological methods for network-based drug target prediction by exploiting a brain-network self-organization theory. Briefings in Bioinformatics, 2018, 19, 1183-1202.	3.2	46

#	ARTICLE	IF	CITATIONS
302	Adapting principles of developmental biology and agent-based modelling for automated urban residential layout design. <i>Environment and Planning B: Urban Analytics and City Science</i> , 2018, 45, 973-993.	1.0	2
303	Optimal route selection based on Monte Carlo method and adaptive amoeba algorithm under uncertain environment. <i>International Journal of Parallel, Emergent and Distributed Systems</i> , 2018, 33, 157-171.	0.7	0
304	Physarum polycephalum assignment: a new attempt for fuzzy user equilibrium. <i>Soft Computing</i> , 2018, 22, 3711-3720.	2.1	2
305	A modified Physarum-inspired model for the user equilibrium traffic assignment problem. <i>Applied Mathematical Modelling</i> , 2018, 55, 340-353.	2.2	48
306	Smart perception and autonomic optimization: A novel bio-inspired hybrid routing protocol for MANETs. <i>Future Generation Computer Systems</i> , 2018, 81, 505-513.	4.9	40
307	Network Design and the Brain. <i>Trends in Cognitive Sciences</i> , 2018, 22, 64-78.	4.0	30
308	Physarum-inspired routing protocol for energy harvesting wireless sensor networks. <i>Telecommunication Systems</i> , 2018, 67, 745-762.	1.6	23
309	Nature-Based Hybrid Computational Geometry System for Optimizing Component Structure. , 2018, , 167-176.		9
310	The geomorphic cell: a basis for studying connectivity. <i>Earth Surface Processes and Landforms</i> , 2018, 43, 1155-1159.	1.2	22
311	Coarsening dynamics of ferromagnetic granular networks—experimental results and simulations. <i>Soft Matter</i> , 2018, 14, 1001-1015.	1.2	9
312	Multi-modeling the morphogenesis of transportation networks. , 2018, , .		4
313	A Bio-Inspired Deployment Method for Data Collection Networks in Wide White Areas. , 2018, , .		2
314	Remarkable problem-solving ability of unicellular amoeboid organism and its mechanism. <i>Royal Society Open Science</i> , 2018, 5, 180396.	1.1	24
315	Biomimetic Design for a Bioengineered World. , 0, , .		1
316	An Accessibility Driven Evolutionary Transit Network Design Approach in the Multi-agent Simulation Environment. <i>Procedia Computer Science</i> , 2018, 136, 499-510.	1.2	2
317	Connectivity and complex systems: learning from a multi-disciplinary perspective. <i>Applied Network Science</i> , 2018, 3, 11.	0.8	101
318	Optimization of Branched Water Distribution Systems by Means of a Physarum-Inspired Algorithm. <i>Proceedings (mdpi)</i> , 2018, 2, 598.	0.2	1
319	Towards fungal computer. <i>Interface Focus</i> , 2018, 8, 20180029.	1.5	34

#	ARTICLE	IF	CITATIONS
320	Individual-level evolutions manifest population-level scaling in complex supply networks. <i>Physical Review E</i> , 2018, 98, .	0.8	3
321	Nature's order? Questioning causality in the modelling of transport networks. <i>Geoforum</i> , 2018, 97, 324-334.	1.4	5
322	Ionic decision-maker created as novel, solid-state devices. <i>Science Advances</i> , 2018, 4, eaau2057.	4.7	28
323	Toward biology-inspired solutions for routing problems of wireless sensor networks with mobile sink. <i>Soft Computing</i> , 2018, 22, 7847-7855.	2.1	8
324	Comparing two classes of biological distribution systems using network analysis. <i>PLoS Computational Biology</i> , 2018, 14, e1006428.	1.5	15
325	Hardware Implementation of a Biomimicking Hybrid CA. <i>Lecture Notes in Computer Science</i> , 2018, , 80-91.	1.0	0
326	Network Analysis as a Grand Unifier in Biomedical Data Science. <i>Annual Review of Biomedical Data Science</i> , 2018, 1, 153-180.	2.8	32
327	The Case for an Expanded Concept of Trained Immunity. <i>MBio</i> , 2018, 9, .	1.8	31
328	Minimal Transport Networks with General Boundary Conditions. <i>SIAM Journal on Applied Mathematics</i> , 2018, 78, 1511-1535.	0.8	3
329	Life-Science Experiments Online: Technological Frameworks and Educational Use Cases. , 2018, , 271-304.		3
331	Multiscale dynamical network mechanisms underlying aging of an online organism from birth to death. <i>Scientific Reports</i> , 2018, 8, 3552.	1.6	4
332	A novel growth mode of <i>Physarum polycephalum</i> during starvation. <i>Journal Physics D: Applied Physics</i> , 2018, 51, 244002.	1.3	8
333	Flow rate of transport network controls uniform metabolite supply to tissue. <i>Journal of the Royal Society Interface</i> , 2018, 15, 20180075.	1.5	17
334	The Mycosphere as a Hotspot for the Biotransformation of Contaminants in Soil. , 2018, , 315-324.		1
335	Differential Effects of Quercetin and Two of Its Derivatives, Isorhamnetin and Isorhamnetin-3-glucuronide, in Inhibiting the Proliferation of Human Breast-Cancer MCF-7 Cells. <i>Journal of Agricultural and Food Chemistry</i> , 2018, 66, 7181-7189.	2.4	62
336	A distributed algorithm to maintain and repair the trail networks of arboreal ants. <i>Scientific Reports</i> , 2018, 8, 9297.	1.6	16
337	Does being multi-headed make you better at solving problems? A survey of <i>Physarum</i> -based models and computations. <i>Physics of Life Reviews</i> , 2019, 29, 1-26.	1.5	48
338	Non-local impact of link failures in linear flow networks. <i>New Journal of Physics</i> , 2019, 21, 053009.	1.2	22

#	ARTICLE	IF	CITATIONS
339	Exploiting spatial heterogeneity and response characterization in non-uniform architected materials inspired by slime mould growth. <i>Bioinspiration and Biomimetics</i> , 2019, 14, 064001.	1.5	1
340	Information Transfer During Food Choice in the Slime Mold <i>Physarum polycephalum</i> . <i>Frontiers in Ecology and Evolution</i> , 2019, 7, .	1.1	24
341	Nonlinearity and distance of ancient routes in the Aztec Empire. <i>PLoS ONE</i> , 2019, 14, e0218593.	1.1	4
342	Can't see the colony for the bees: behavioural perspectives of biological individuality. <i>Biological Reviews</i> , 2019, 94, 1935-1946.	4.7	6
343	The Semantic Librarian: A search engine built from vector-space models of semantics. <i>Behavior Research Methods</i> , 2019, 51, 2405-2418.	2.3	4
344	Effect of fiber suspension jet stability on alignment quality of discontinuous carbon fiber tapes. <i>International Journal of Multiphase Flow</i> , 2019, 120, 103102.	1.6	2
345	Clustering Networks Based on <i>Physarum</i> Optimization for Seismic Catalogs Analysis. , 2019, , .		2
346	Optimizing biologically inspired transport networks by control. <i>Physical Review E</i> , 2019, 100, 032309.	0.8	4
347	How Does Biologically Inspired Design Cope with Multi-Functionality?. <i>Proceedings of the Design Society International Conference on Engineering Design</i> , 2019, 1, 349-358.	0.6	6
348	Chimera states of neuron networks with adaptive coupling. <i>Nonlinear Dynamics</i> , 2019, 96, 75-86.	2.7	22
349	Large-scale Coherent Ising Machine. <i>Journal of the Physical Society of Japan</i> , 2019, 88, 061014.	0.7	17
350	Intracellular mechanisms of fungal space searching in microenvironments. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 13543-13552.	3.3	36
351	Adjustment in tumbling rates improves bacterial chemotaxis on obstacle-laden terrains. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 11770-11775.	3.3	12
352	A New Evolutionary Multiobjective Model for Traveling Salesman Problem. <i>IEEE Access</i> , 2019, 7, 66964-66979.	2.6	30
353	Increasing access to microfluidics for studying fungi and other branched biological structures. <i>Fungal Biology and Biotechnology</i> , 2019, 6, 1.	2.5	17
354	Optimal geometry of transportation networks. <i>Physical Review E</i> , 2019, 99, 052303.	0.8	14
355	Self-assembly of biological networks via adaptive patterning revealed by avian intradermal muscle network formation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 10858-10867.	3.3	5
357	Memory inception and preservation in slime moulds: the quest for a common mechanism. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2019, 374, 20180368.	1.8	43

#	ARTICLE	IF	CITATIONS
358	Efficiency and shrinking in evolving networks. <i>Journal of the Royal Society Interface</i> , 2019, 16, 20190101.	1.5	6
359	Phenotypic variability predicts decision accuracy in unicellular organisms. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2019, 286, 20182825.	1.2	17
360	An Urban Morphogenesis Model Capturing Interactions Between Networks and Territories. <i>Modeling and Simulation in Science, Engineering and Technology</i> , 2019, , 383-409.	0.4	5
362	Simulating Transport Networks With a <i>Physarum</i> Foraging Model. <i>IEEE Access</i> , 2019, 7, 23725-23739.	2.6	3
363	Inspiration of the biological behavior of <i>Physarum polycephalum</i> on mathematical modeling. <i>Physics of Life Reviews</i> , 2019, 29, 38-40.	1.5	1
364	The Response of Litter-Associated Myxomycetes to Long-Term Nutrient Addition in a Lowland Tropical Forest. <i>Journal of Eukaryotic Microbiology</i> , 2019, 66, 757-770.	0.8	7
365	What can AI learn from bionic algorithms?. <i>Physics of Life Reviews</i> , 2019, 29, 41-43.	1.5	3
366	A Decentralized Solution for Transmission Expansion Planning: Getting Inspiration from Nature. <i>Energies</i> , 2019, 12, 4427.	1.6	0
367	Calculation Behavior of 2D Ising Spin Computing with Different Spin Decision Logics. , 2019, , .		4
368	“Ant community” Community complex sustainable design based on design bionics” Case study of the Can Batlló community in Barcelona. <i>IOP Conference Series: Earth and Environmental Science</i> , 2019, 376, 012038.	0.2	0
369	A LSTM Based Bus Arrival Time Prediction Method. , 2019, , .		3
370	Substrate composition directs slime molds behavior. <i>Scientific Reports</i> , 2019, 9, 15444.	1.6	7
371	The role of active movement in fungal ecology and community assembly. <i>Movement Ecology</i> , 2019, 7, 36.	1.3	18
372	Frontiers in Microfluidics, a Teaching Resource Review. <i>Bioengineering</i> , 2019, 6, 109.	1.6	19
373	Benchmarking based search framework. <i>Cluster Computing</i> , 2019, 22, 929-951.	3.5	0
374	Mycofluidics: The Fluid Mechanics of Fungal Adaptation. <i>Annual Review of Fluid Mechanics</i> , 2019, 51, 511-538.	10.8	13
375	A concise survey of advancements in recovery strategies for resilient complex networks. <i>Journal of Complex Networks</i> , 2019, 7, 393-420.	1.1	14
376	Design of slime-mold-inspired multi-layered single-electron circuit. <i>International Journal of Parallel, Emergent and Distributed Systems</i> , 2019, 34, 400-411.	0.7	5

#	ARTICLE	IF	CITATIONS
377	An Accelerated <i>Physarum</i> Solver for Network Optimization. <i>IEEE Transactions on Cybernetics</i> , 2020, 50, 765-776.	6.2	13
378	Who needs a brain? Slime moulds, behavioural ecology and minimal cognition. <i>Adaptive Behavior</i> , 2020, 28, 465-478.	1.1	19
379	Lessons from a virtual slime: marginal mechanisms, minimal cognition and radical enactivism. <i>Adaptive Behavior</i> , 2020, 28, 453-464.	1.1	1
380	Mycoremediation of polycyclic aromatic hydrocarbons. , 2020, , 127-149.		22
381	PORA: A <i>Physarum</i> -inspired obstacle-avoiding routing algorithm for integrated circuit design. <i>Applied Mathematical Modelling</i> , 2020, 78, 268-286.	2.2	20
382	Ecological memory and relocation decisions in fungal mycelial networks: responses to quantity and location of new resources. <i>ISME Journal</i> , 2020, 14, 380-388.	4.4	24
383	On the Convergence Time of a Natural Dynamics for Linear Programming. <i>Algorithmica</i> , 2020, 82, 300-315.	1.0	0
384	Optimal transport from a point-like source. <i>Continuum Mechanics and Thermodynamics</i> , 2020, 32, 1325-1335.	1.4	1
385	Flow-Driven Branching in a Frangible Porous Medium. <i>Physical Review Letters</i> , 2020, 125, 158002.	2.9	15
386	Phase-field modeling of constrained interactive fungal networks. <i>Journal of the Mechanics and Physics of Solids</i> , 2020, 145, 104160.	2.3	9
387	Application of Biomimetics to Architectural and Urban Design: A Review across Scales. <i>Sustainability</i> , 2020, 12, 9813.	1.6	18
388	Optimistic and pessimistic solutions of the fuzzy shortest path problem by <i>Physarum polycephalum</i> approach. <i>International Journal of Computer Aided Engineering and Technology</i> , 2020, 12, 423.	0.1	1
389	A Two-Way Parallel Slime Mold Algorithm by Flow and Distance for the Travelling Salesman Problem. <i>Applied Sciences (Switzerland)</i> , 2020, 10, 6180.	1.3	8
390	<i>Physarum</i> -Inspired Autonomous Optimized Routing Protocol for Coal Mine MANET. <i>Wireless Communications and Mobile Computing</i> , 2020, 2020, 1-14.	0.8	3
391	Monte Carlo <i>Physarum</i> Machine: An Agent-based Model for Reconstructing Complex 3D Transport Networks. , 2020, , .		1
392	Slime mould foraging: an inspiration for algorithmic design. <i>International Journal of Innovative Computing and Applications</i> , 2020, 11, 30.	0.2	7
393	Slime Mold Inspired Distribution Network Initial Solution. <i>Energies</i> , 2020, 13, 6278.	1.6	4
394	Gene-inspired Development of Innovative Design: Principles and Algorithm. <i>Procedia CIRP</i> , 2020, 91, 838-843.	1.0	4

#	ARTICLE	IF	CITATIONS
395	Amoeba-inspired analog electronic computing system integrating resistance crossbar for solving the travelling salesman problem. <i>Scientific Reports</i> , 2020, 10, 20772.	1.6	8
396	Explosive Higher-Order Kuramoto Dynamics on Simplicial Complexes. <i>Physical Review Letters</i> , 2020, 124, 218301.	2.9	146
397	Evolutionary Markov Dynamics for Network Community Detection. <i>IEEE Transactions on Knowledge and Data Engineering</i> , 2022, 34, 1206-1220.	4.0	52
398	An adaptive population control framework for ACO-based community detection. <i>Chaos, Solitons and Fractals</i> , 2020, 138, 109886.	2.5	8
399	Bio-inspired routing algorithm for MANETs based on fungi networks. <i>Ad Hoc Networks</i> , 2020, 107, 102248.	3.4	15
400	Stress signalling in acellular slime moulds and its detection by conspecifics. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2020, 375, 20190470.	1.8	10
401	In Sync. <i>Understanding Complex Systems</i> , 2020, , .	0.3	23
402	Trajectories toward maximum power and inequality in resource distribution networks. <i>PLoS ONE</i> , 2020, 15, e0229956.	1.1	2
403	Revealing the Dark Threads of the Cosmic Web. <i>Astrophysical Journal Letters</i> , 2020, 891, L35.	3.0	25
404	A Physarum-Inspired Algorithm for Minimum-Cost Relay Node Placement in Wireless Sensor Networks. <i>IEEE/ACM Transactions on Networking</i> , 2020, 28, 681-694.	2.6	13
405	Animals in Virtual Environments. <i>IEEE Transactions on Visualization and Computer Graphics</i> , 2020, 26, 2073-2083.	2.9	26
406	Simplicial complexes: higher-order spectral dimension and dynamics. <i>Journal of Physics Complexity</i> , 2020, 1, 015002.	0.9	47
407	Capturing the Signature of Topological Evolution from the Snapshots of Road Networks. <i>Complexity</i> , 2020, 2020, 1-14.	0.9	8
408	Resilience of three-dimensional sinusoidal networks in liver tissue. <i>PLoS Computational Biology</i> , 2020, 16, e1007965.	1.5	12
409	Chromosomal origin of replication coordinates logically distinct types of bacterial genetic regulation. <i>Npj Systems Biology and Applications</i> , 2020, 6, 5.	1.4	18
410	A Node Selecting Approach for Traffic Network Based on Artificial Slime Mold. <i>IEEE Access</i> , 2020, 8, 8436-8448.	2.6	10
411	Materials design by synthetic biology. <i>Nature Reviews Materials</i> , 2021, 6, 332-350.	23.3	190
412	Leben erfindet immer neue Ebenen der Sprache. , 2021, , 189-214.		0

#	ARTICLE	IF	CITATIONS
413	Adaptive behaviour and learning in slime moulds: the role of oscillations. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2021, 376, 20190757.	1.8	31
414	Plant Philosophy and Interpretation: Making Sense of Contemporary Plant Intelligence Debates. <i>Environmental Values</i> , 2022, 31, 253-276.	0.7	7
415	A Novel Physarum-Based Optimization Algorithm for Shortest Path. <i>Lecture Notes in Computer Science</i> , 2021, , 94-105.	1.0	0
416	Filamentous Fungi Growth as Metaphor for Mobile Communication Networks Routing. <i>Advances in Electrical and Computer Engineering</i> , 2021, 21, 59-66.	0.5	1
418	Optimal Mixing in Transport Networks: Numerical Optimization and Analysis. <i>SIAM Journal on Applied Mathematics</i> , 2021, 81, 741-764.	0.8	2
419	A Slime Mold Fractional-Order Ant Colony Optimization Algorithm for Travelling Salesman Problems. <i>Lecture Notes in Computer Science</i> , 2021, , 322-332.	1.0	4
420	K�nstliche Intelligenz/Maschinelles Lernen. , 2021, , 424-428.		3
421	Color-Patterns to Architecture Conversion through Conditional Generative Adversarial Networks. <i>Biomimetics</i> , 2021, 6, 16.	1.5	3
422	Polyphorm: Structural Analysis of Cosmological Datasets via Interactive Physarum Polycephalum Visualization. <i>IEEE Transactions on Visualization and Computer Graphics</i> , 2021, 27, 806-816.	2.9	6
423	Encoding memory in tube diameter hierarchy of living flow network. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	3.3	45
424	Effect of asymmetric deformation dynamics in amoeboid organism on its search ability. <i>Bioinspiration and Biomimetics</i> , 2021, 16, 036003.	1.5	0
425	Distributed information fusion in tangle networks. <i>Automatica</i> , 2021, 125, 109417.	3.0	1
426	Application of hybrid swarming algorithm on flexible job shop scheduling problems. <i>Concurrency Computation Practice and Experience</i> , 2021, 33, e6348.	1.4	0
427	From foraging trails to transport networks: how the quality-distance trade-off shapes network structure. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2021, 288, 20210430.	1.2	10
428	Statistical analysis and optimality of neural systems. <i>Neuron</i> , 2021, 109, 1227-1241.e5.	3.8	17
429	Collective colony growth is optimized by branching pattern formation in <i>Pseudomonas aeruginosa</i> . <i>Molecular Systems Biology</i> , 2021, 17, e10089.	3.2	20
430	Nest choice in arboreal ants is an emergent consequence of network creation under spatial constraints. <i>Swarm Intelligence</i> , 2021, 15, 7-30.	1.3	4
431	Research trends in combinatorial optimization. <i>International Transactions in Operational Research</i> , 2022, 29, 667-705.	1.8	11

#	ARTICLE	IF	CITATIONS
433	Swarm Robot Exploration Strategy for Path Formation Tasks Inspired by Physarum polycephalum. Complexity, 2021, 2021, 1-17.	0.9	2
434	Self-Organization and Information Processing: From Basic Enzymatic Activities to Complex Adaptive Cellular Behavior. Frontiers in Genetics, 2021, 12, 644615.	1.1	10
435	Network permeability changes according to a quadratic power law upon removal of a single edge. Europhysics Letters, 2021, 134, 64002.	0.7	0
437	Optimal Transport in Multilayer Networks for Traffic Flow Optimization. Algorithms, 2021, 14, 189.	1.2	15
438	Learning in single cell organisms. Biochemical and Biophysical Research Communications, 2021, 564, 92-102.	1.0	26
439	A new nature-inspired optimization for community discovery in complex networks. European Physical Journal B, 2021, 94, 1.	0.6	2
440	A Physarum-based Boost Algorithm for Network Optimization in Dense Wireless Sensor Networks. , 2021, , .		1
441	Physical intelligence as a new paradigm. Extreme Mechanics Letters, 2021, 46, 101340.	2.0	114
442	A Physarum-inspired algorithm for logistics optimization: From the perspective of effective distance. Swarm and Evolutionary Computation, 2021, 64, 100890.	4.5	8
443	An Entropic Gradient Structure in the Network Dynamics of a Slime Mold. Symmetry, 2021, 13, 1385.	1.1	0
444	Physarum-Inspired Bicycle Lane Network Design in a Congested Megacity. Applied Sciences (Switzerland), 2021, 11, 6958.	1.3	4
445	Principled network extraction from images. Royal Society Open Science, 2021, 8, 210025.	1.1	9
446	A Survey of Path Planning Algorithms for Mobile Robots. Vehicles, 2021, 3, 448-468.	1.7	113
447	Potential-driven random walks on interconnected systems. Physical Review E, 2021, 104, 024120.	0.8	4
448	Integrated biology of Physarum polycephalum: cell biology, biophysics, and behavior of plasmodial networks. , 2022, , 453-492.		0
449	Molecular techniques and current research approaches. , 2022, , 195-229.		1
450	Data Fusion Based Transmission in Multimedia Sensor Networks. Advances in Computer Science and Technology, 2021, , 85-143.	0.0	0
451	Substrate and cell fusion influence on slime mold network dynamics. Scientific Reports, 2021, 11, 1498.	1.6	7

#	ARTICLE	IF	CITATIONS
452	LÃ©vy Walk in Swarm Models Based on Bayesian and Inverse Bayesian Inference. Computational and Structural Biotechnology Journal, 2021, 19, 247-260.	1.9	11
453	Adaptive Evolution of Teaching Practices in Biologically Inspired Design. , 2014, , 153-199.		23
455	Biomimicry of Crowd Evacuation with a Slime Mould Cellular Automaton Model. Studies in Computational Intelligence, 2015, , 123-151.	0.7	5
456	A Physarum-Inspired Vacant-Particle Model with Shrinkage for Transport Network Design. Lecture Notes in Computer Science, 2015, , 74-81.	1.0	3
457	Parallel Acceleration of Slime Mould Discrete Models. Emergence, Complexity and Computation, 2016, , 595-617.	0.2	2
458	Translating Slime Mould Responses: A Novel Way to Present Data to the Public. Emergence, Complexity and Computation, 2016, , 777-788.	0.2	2
459	An Enhanced Particle Swarm Optimization Based on Physarum Model for Community Detection. Lecture Notes in Computer Science, 2017, , 99-108.	1.0	2
460	Microplasmidium Dynamics of Physarum Polycephalum. IFMBE Proceedings, 2010, , 1133-1136.	0.2	13
461	Slime Mold Inspired Path Formation Protocol for Wireless Sensor Networks. Lecture Notes in Computer Science, 2010, , 299-311.	1.0	14
462	Towards Physarum Robots. Studies in Computational Intelligence, 2011, , 215-251.	0.7	5
463	Bio-Inspired Dynamic Composition and Reconfiguration of Service-Oriented Internetware Systems. Lecture Notes in Computer Science, 2011, , 364-373.	1.0	6
464	Physical Internet Enabled Open Hub Network Design for Distributed Networked Operations. Studies in Computational Intelligence, 2012, , 279-292.	0.7	29
466	The Price of Evolution in Incremental Network Design (The Case of Ring Networks). Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2012, , 1-15.	0.2	2
468	Physarum-Inspired Self-biased Walkers for Distributed Clustering. Lecture Notes in Computer Science, 2012, , 315-329.	1.0	4
469	A Comparison of Network Characteristics in Metabolic and Manufacturing Systems. Lecture Notes in Logistics, 2013, , 141-150.	0.6	3
470	Adaptive Path-Finding and Transport Network Formation by the Amoeba-Like Organism Physarum. Proceedings in Information and Communications Technology, 2013, , 14-29.	0.2	8
471	Diffusive limit of a two-dimensional well-balanced approximation to a kinetic model of chemotaxis. SN Partial Differential Equations and Applications, 2021, 2, .	0.3	1
472	Effective mixing due to oscillatory laminar flow in tubular networks of plasmodial slime moulds. New Journal of Physics, 2020, 22, 053007.	1.2	2



#	ARTICLE	IF	CITATIONS
496	Better tired than lost: Turtle ant trail networks favor coherence over short edges. PLoS Computational Biology, 2021, 17, e1009523.	1.5	5
497	Correspondence insights into the role of genes in cell functionality. Comments on "The gene: An appraisal" by K. Baverstock. Progress in Biophysics and Molecular Biology, 2021, 167, 152-160.	1.4	2
498	An Autonomy-Oriented Computing Mechanism for Modeling the Formation of Energy Distribution Networks: Crude Oil Distribution in U.S. and Canada. Lecture Notes in Computer Science, 2010, , 410-420.	1.0	0
499	Carriers and Repositories of Thought. , 2011, , 101-155.		0
500	Smart Network of True Slime Mold. Seibutsu Butsuri, 2011, 51, 178-181.	0.0	0
501	The Interconnected Network of Tubes Constructed by a Mass of Amoebae Provides Clues Regarding the Natural Design of Structures for Optimal Transportation. JPSJ News and Comments, 2011, 8, 10.	0.2	0
503	Conception des réseaux par biomimétisme : application au transport des déchets. Déchets Sciences Et Techniques, 2012, , .	0.1	0
504	Honor speech. Japanese Journal of Physiological Psychology and Psychophysiology, 2012, 30, 103-104.	0.0	0
505	Challenges for Software Agents Supporting Decision-Makers in Trading Flowers Worldwide. Lecture Notes in Business Information Processing, 2012, , 32-39.	0.8	0
506	Allometric Scaling Laws in the Exploratory Behavior of the Physarum Plasmodium. International Journal of Artificial Life Research, 2012, 3, 22-33.	0.1	1
507	Evaluation of a Self-organizing Heuristic for Interdependent Distributed Search Spaces. , 2013, , .		8
508	A Novel Route Selection Method Considering Reliability Factors Using Amoeba Algorithm. Journal of Information and Computational Science, 2013, 10, 3677-3684.	0.1	0
509	A Novel Approach to Multi-criteria Route Selection Problem Based on Fuzzy AHP and Amoeba Algorithm. Journal of Information and Computational Science, 2013, 10, 5217-5224.	0.1	0
510	Biologically Inspired Optimization of Building District Heating Networks. TELKOMNIKA Indonesian Journal of Electrical Engineering, 2013, 11, .	0.1	0
511	Models and Applications of Organism Transportation. Mathematics for Industry, 2014, , 141-150.	0.4	1
512	COHDA: A Combinatorial Optimization Heuristic for Distributed Agents. Communications in Computer and Information Science, 2014, , 23-39.	0.4	11
513	Optimization in Path Searching of True Slime Mold. Journal of the Robotics Society of Japan, 2014, 32, 530-535.	0.0	0
514	Ranking Influential Nodes in Transportation Networks Based on an Amoeba-like Organism. Journal of Information and Computational Science, 2014, 11, 1163-1169.	0.1	0

#	ARTICLE	IF	CITATIONS
516	Biological Prototype Model for Road Abnormal Vehicle Behavior Simulation. Lecture Notes in Computer Science, 2015, , 351-362.	1.0	0
517	Power Laws of the Physarum Plasmodium. Emergence, Complexity and Computation, 2016, , 373-394.	0.2	0
518	Adaptive dynamics for shape optimization inspired by the use-and-growth rule in a simple organism of slime mold. , 2016, , .		0
519	Physarum, Quo Vadis?. Emergence, Complexity and Computation, 2016, , 23-35.	0.2	0
520	Multi-agent Slime Mould Computing: Mechanisms, Applications and Advances. Emergence, Complexity and Computation, 2016, , 423-463.	0.2	1
521	Efficient mixing of protoplasm in tubular network of the slime mould Physarum polycephalum. , 2016, , .		0
522	Motifs of Growth and Fusion Govern Physarum polycephalum Network Formation. , 2016, , .		0
523	Behavior of the Artificial Slime Mould Model and Its Application. Journal of Signal Processing, 2016, 20, 149-152.	0.2	0
524	A Physarum-Based General Computational Framework for Community Mining. Lecture Notes in Computer Science, 2016, , 141-149.	1.0	0
525	Overview of Cellular Computing-Basic Principles and Applications. Advances in Computational Intelligence and Robotics Book Series, 2016, , 637-662.	0.4	0
526	Bionic Optimization Based Stability and Congestion Aware Routing Algorithm for Airborne Highly Dynamic Network. International Journal of Distributed Sensor Networks, 2016, 12, 8242497.	1.3	0
527	Discrete Biochemistry of DNA: Arithmetic DNA Molecules for Binary Additions, Naturally Found Genetic Logic Circuits for Plant Sensing, and DNA-Based Animation. Journal of Advanced Computational Intelligence and Intelligent Informatics, 2016, 20, 671-680.	0.5	1
528	Constructing lifestyles. , 2017, , 184-208.		0
529	Emerging Computations on Nano-Electronic Circuits and Devices. Advances in Atom and Single Molecule Machines, 2017, , 135-163.	0.0	2
530	An Enhanced Markov Clustering Algorithm Based on Physarum. Lecture Notes in Computer Science, 2017, , 486-498.	1.0	1
531	The Mycosphere as a Hotspot for the Biotransformation of Contaminants in Soil. , 2017, , 1-10.		0
533	Intelligence, a New Concept?. , 2017, , 137-162.		0
535	Concluding Remarks“Looking to the Future. , 2018, , 323-352.		1

#	ARTICLE	IF	CITATIONS
536	Multimodal Transportation Network Design Using Physarum Polycephalum-Inspired Multi-agent Computation Methods. Lecture Notes in Computer Science, 2018, , 105-116.	1.0	1
537	Fungi Ethics. , 2018, , 1-5.		0
538	Nature-Inspired Computational Model for Solving Bi-objective Traveling Salesman Problems. Lecture Notes in Computer Science, 2018, , 219-227.	1.0	1
540	A biologically inspired solution for allocation problems of branch-cuts. , 2018, , .		0
541	Intelligenz â€œ ein neues Konzept?. , 2019, , 163-192.		0
542	Self-locked Adiabatic Lasers Solve a Global Optimization Problem. , 2019, , .		0
543	Mimicking Physarum Space Exploration with Networks of Memristive Oscillators. , 2019, , 1241-1274.		1
544	Slime Molds. , 2019, , 1-5.		0
545	Fungi Ethics. , 2019, , 1392-1396.		0
546	Adaptive Load Balancing Ad Hoc Routing Scheme Inspired by True Slime Mold. Journal of Telecommunications and Information Technology, 2019, 1, 14-22.	0.3	2
547	A Variety of Functional Devices Realized by Ionic Nanoarchitectonics, Complementing Electronics Components. Advanced Electronic Materials, 2022, 8, 2100645.	2.6	22
548	Single-cell systems analysis: decision geometry in outliers. Bioinformatics, 2021, 37, 1747-1755.	1.8	0
549	Complex and Surprising Dynamics in Gene Regulatory Networks. , 2020, , 147-187.		0
550	A Physical Insight of Biofilms. , 2020, , 37-46.		2
551	Smart Embedded Systems with Decisional DNA Knowledge Representation. Intelligent Systems Reference Library, 2020, , 127-150.	1.0	0
553	Overview of Cellular Computing-Basic Principles and Applications. , 2020, , 1895-1920.		0
554	Balancing efficiency and homogeneity of biomaterial transport in networks. Europhysics Letters, 2021, 135, 58001.	0.7	0
555	Ionic Decision-maker for Solving Multi-armed Bandit Problems. Hyomen Gijutsu/Journal of the Surface Finishing Society of Japan, 2020, 71, 453-458.	0.1	0

#	ARTICLE	IF	CITATIONS
557	A growth model for water distribution networks with loops. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2021, 477, 20210528.	1.0	3
558	Interplay of periodic dynamics and noise: Insights from a simple adaptive system. Physical Review E, 2021, 104, 054215.	0.8	3
560	Modularity and connectivity of nest structure scale with colony size. Evolution; International Journal of Organic Evolution, 2022, 76, 101-113.	1.1	3
561	Development of A Spatiotemporal Database for Evolution Analysis of the Moscow Backbone Power Grid. Data, 2021, 6, 127.	1.2	2
563	Bio-inspired Network Optimization Based on Semi-Definite Programming*. , 2020, , .		0
564	Neurons learn by predicting future activity. Nature Machine Intelligence, 2022, 4, 62-72.	8.3	33
566	Emergence of behaviour in a self-organized living matter network. ELife, 2022, 11, .	2.8	9
567	Stepwise slime mould growth as a template for urban design. Scientific Reports, 2022, 12, 1322.	1.6	3
568	Predictive Neuronal Adaptation as a Basis for Consciousness. Frontiers in Systems Neuroscience, 2021, 15, 767461.	1.2	6
569	Fungi anaesthesia. Scientific Reports, 2022, 12, 340.	1.6	3
570	A bio-inspired design and space challenges cornerstone project. , 2022, , 41-62.		0
573	Physarum-inspired multi-commodity flow dynamics. Theoretical Computer Science, 2022, , .	0.5	6
574	Intrinsically Disordered Proteins: Critical Components of the Wetware. Chemical Reviews, 2022, 122, 6614-6633.	23.0	48
575	Open quantum dynamics for plant motions. Scientific Reports, 2022, 12, 3042.	1.6	1
576	Logic operations with active topological defects. Science Advances, 2022, 8, eabg9060.	4.7	13
577	Chromatophony: A Potential Application of Living Images in the Pixel Era. Leonardo, 2022, 55, 252-257.	0.2	1
578	Method for constructing cost-effective networks by mimicking human walking track superposition. Journal of Asian Architecture and Building Engineering, 0, , 1-14.	1.2	1
580	Monte Carlo Physarum Machine: Characteristics of Pattern Formation in Continuous Stochastic Transport Networks. Artificial Life, 2022, 28, 22-57.	1.0	7

#	ARTICLE	IF	CITATIONS
581	The economy of chromosomal distances in bacterial gene regulation. <i>Npj Systems Biology and Applications</i> , 2021, 7, 49.	1.4	3
582	Urban medium-voltage distribution network planning under a complete back-up regime. <i>CIREN - Open Access Proceedings Journal</i> , 2020, 2020, 86-89.	0.1	0
583	Cell fusion through slime mould network dynamics. <i>Journal of the Royal Society Interface</i> , 2022, 19, 20220054.	1.5	2
584	Adaptive Hagen-Poiseuille flows on graphs. <i>Physica D: Nonlinear Phenomena</i> , 2022, 436, 133322.	1.3	1
585	Multicommodity routing optimization for engineering networks. <i>Scientific Reports</i> , 2022, 12, 7474.	1.6	8
586	Advances and challenges in programming pattern formation using living cells. <i>Current Opinion in Chemical Biology</i> , 2022, 68, 102147.	2.8	6
588	Interplay of River and Tidal Forcings Promotes Loops in Coastal Channel Networks. <i>Geophysical Research Letters</i> , 2022, 49, .	1.5	11
589	ĐŸŃ€Đ¼Đ±Đ»ĐµĐ¼Đ° Đ,Đ½Ń,ĐµĐ»Đ»ĐµĐ°Ń,Đ° ĐŧĐ,Đ²Đ¼Ń,Đ½Ń<Ń... Đ² Đ°Đ¼Đ½Ń,ĐµĐ°ŃŃ,Đµ ŃŃ,Ń€ŃfĐ°Ń,ŃfŃ€Đ¼Đ¼-Đ		
590	Physical intelligence as a new paradigm.. <i>Extreme Mechanics Letters</i> , 2021, 46, 101340.	2.0	8
591	Slime Molds. , 2022, , 6485-6489.		1
592	From the origin of life to pandemics: emergent phenomena in complex systems. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2022, 380, .	1.6	15
593	A model for simulating emergent patterns of cities and roads on real-world landscapes. <i>Scientific Reports</i> , 2022, 12, .	1.6	0
594	Temporal Evolution of Erosion in Pore Networks: From Homogenization to Instability. <i>Physical Review Letters</i> , 2022, 128, .	2.9	3
595	Dynamic model-based method for the analysis of ship behavior in marine traffic situation. <i>Ocean Engineering</i> , 2022, 257, 111578.	1.9	1
597	Slime Mold and Network Imaginaries: An Experimental Approach to Communication. <i>Leonardo</i> , 0, , 462-467.	0.2	0
598	Self-Organization Emerging from Marangoni and Elastocapillary Effects Directed by Amphiphile Filament Connections. <i>Langmuir</i> , 2022, 38, 10799-10809.	1.6	4
599	A Physarum-inspired approach to the Euclidean Steiner tree problem. <i>Scientific Reports</i> , 2022, 12, .	1.6	3
600	A distributed nanocluster based multi-agent evolutionary network. <i>Nature Communications</i> , 2022, 13, .	5.8	3

#	ARTICLE	IF	CITATIONS
601	Spatial programming of self-organizing chemical systems using sustained physicochemical gradients from reaction, diffusion and hydrodynamics. <i>Physical Chemistry Chemical Physics</i> , 2022, 24, 23980-24001.	1.3	11
602	Amoeba-inspired magnetic microgel assembly assisted by engineered dextran-binding protein for vaccination against life-threatening systemic infection. <i>Nano Research</i> , 2023, 16, 938-950.	5.8	1
603	Demand-driven design of bicycle infrastructure networks for improved urban bikeability. <i>Nature Computational Science</i> , 2022, 2, 655-664.	3.8	6
604	Emergence of biological transportation networks as a self-regulated process. <i>Discrete and Continuous Dynamical Systems</i> , 2022, .	0.5	1
605	Many-Headed: Co-creating with the Collective. , 2022, , 13-37.		0
607	Observation of Autonomous Behavioral Selection in Physarum Plasmodium. <i>Logica Universalis</i> , 2022, 16, 643-653.	0.1	1
608	Design of comb-shaped single-electron slime mold circuit and its application to traveling salesman problem. <i>International Journal of Parallel, Emergent and Distributed Systems</i> , 0, , 1-10.	0.7	0
609	Honey bees find the shortest path: a collective flow-mediated approach. <i>Artificial Life and Robotics</i> , 0, , .	0.7	1
610	Brain and Its Universal Logical Model of Multi-Agent Biological Systems. <i>Logica Universalis</i> , 2022, 16, 671-687.	0.1	3
611	Go with the flow " bulk transport by molecular motors. <i>Journal of Cell Science</i> , 2023, 136, .	1.2	10
612	Intersections of Living and Machine Agencies: Possibilities for Creative AI. <i>Springer Series on Cultural Computing</i> , 2022, , 155-166.	0.4	1
613	Trade-Off of Networks on Weighted Space Analyzed via a Method Mimicking Human Walking Track Superposition. <i>Lecture Notes in Computer Science</i> , 2022, , 247-261.	1.0	0
614	Design a Robust Logistics Network with an Artificial Physarum Swarm Algorithm. <i>Sustainability</i> , 2022, 14, 14930.	1.6	7
616	A survey on physarum polycephalum intelligent foraging behaviour and bio-inspired applications. <i>Artificial Intelligence Review</i> , 2023, 56, 1-26.	9.7	5
619	Intelligence in Biology. , 2023, , 33-50.		0
620	A hybrid algorithm based on state-adaptive slime mold model and fractional-order ant system for the travelling salesman problem. <i>Complex &amp; Intelligent Systems</i> , 2023, 9, 3951-3970.	4.0	31
621	Convergence properties of optimal transport-based temporal hypergraphs. <i>Applied Network Science</i> , 2023, 8, .	0.8	0
622	Bio-inspired robot swarm path formation with local sensor scope. <i>Applied Intelligence</i> , 0, , .	3.3	0

#	ARTICLE	IF	CITATIONS
623	A Distributed-GPU Deep Reinforcement Learning System for Solving Large Graph Optimization Problems. <i>ACM Transactions on Parallel Computing</i> , 2023, 10, 1-23.	1.2	0
624	Assessing the state of biologically inspired design from three perspectives: Academic, public, and practitioners. <i>Bioinspiration and Biomimetics</i> , 0, , .	1.5	0
625	Infrastructure adaptation and emergence of loops in network routing with time-dependent loads. <i>Physical Review E</i> , 2023, 107, .	0.8	1
626	From Bioinspiration to Biomimicry in Architecture: Opportunities and Challenges. <i>Encyclopedia</i> , 2023, 3, 202-223.	2.4	4
627	Orbiting Self-Organization of Filament-Tethered Surface-Active Droplets. <i>Small</i> , 2023, 19, .	5.2	2
628	Behavioural changes in slime moulds over time. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2023, 378, .	1.8	2
629	Finding shortcuts through collective tunnel excavations in a subterranean termite. <i>Behavioral Ecology</i> , 2023, 34, 354-362.	1.0	5
630	Life Invents Ever New Levels of Language. , 2023, , 171-195.		0
632	Learning Without Neurons in Physical Systems. <i>Annual Review of Condensed Matter Physics</i> , 2023, 14, 417-441.	5.2	13
633	Vein fate determined by flow-based but time-delayed integration of network architecture. <i>ELife</i> , 0, 12, .	2.8	6
634	Learning in the Single-Cell Organism <i>Physarum polycephalum</i> : Effect of Propofol. <i>International Journal of Molecular Sciences</i> , 2023, 24, 6287.	1.8	1
635	Memory capacity of adaptive flow networks. <i>Physical Review E</i> , 2023, 107, .	0.8	0
636	Realizing Molecular Machine Learning Through Communications for Biological AI. <i>IEEE Nanotechnology Magazine</i> , 2023, 17, 10-20.	0.9	0
637	Learning by non-interfering feedback chemical signaling in physical networks. <i>Physical Review Research</i> , 2023, 5, .	1.3	3
657	Towards Fungal Computer. <i>Emergence, Complexity and Computation</i> , 2023, , 245-273.	0.2	0
658	Fungi Anaesthesia. <i>Emergence, Complexity and Computation</i> , 2023, , 61-70.	0.2	0
665	Biomimicry. , 2023, , 290-298.		0
668	A Graph-Based Approach for Applying Biologically-Inspired Slime Mold Algorithms for Repairing a Power Transmission Network after an Electromagnetic Pulse Attack. , 2023, , .		0

#	ARTICLE	IF	CITATIONS
681	Incremental Versus Optimal Design of Water Distribution Networks - The Case of Tree Topologies. Studies in Computational Intelligence, 2024, , 251-262.	0.7	0
682	Oligopolistic Markets Employing an Intelligent Physarum Solution for Supply Chain Networks. Advances in Logistics, Operations, and Management Science Book Series, 2024, , 192-207.	0.3	0
685	Flauschige Mathematik. , 2024, , 1-18.		0