

# Ali Kaveh

## List of Publications by Year in descending order

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559  
papers

16,495  
citations

28274

55  
h-index

30087

103  
g-index

598  
all docs

598  
docs citations

598  
times ranked

4836  
citing authors

#	ARTICLE	IF	CITATIONS
1	A novel heuristic optimization method: charged system search. Acta Mechanica, 2010, 213, 267-289.	2.1	1,063
2	A new meta-heuristic method: Ray Optimization. Computers and Structures, 2012, 112-113, 283-294.	4.4	624
3	Colliding bodies optimization: A novel meta-heuristic method. Computers and Structures, 2014, 139, 18-27.	4.4	504
4	A novel meta-heuristic optimization algorithm: Thermal exchange optimization. Advances in Engineering Software, 2017, 110, 69-84.	3.8	438
5	Particle swarm optimizer, ant colony strategy and harmony search scheme hybridized for optimization of truss structures. Computers and Structures, 2009, 87, 267-283.	4.4	407
6	A new optimization method: Dolphin echolocation. Advances in Engineering Software, 2013, 59, 53-70.	3.8	397
7	Size optimization of space trusses using Big Bang-“Big Crunch algorithm. Computers and Structures, 2009, 87, 1129-1140.	4.4	317
8	An improved ant colony optimization for constrained engineering design problems. Engineering Computations, 2010, 27, 155-182.	1.4	275
9	Water Evaporation Optimization: A novel physically inspired optimization algorithm. Computers and Structures, 2016, 167, 69-85.	4.4	263
10	Optimum design of skeletal structures using imperialist competitive algorithm. Computers and Structures, 2010, 88, 1220-1229.	4.4	240
11	A particle swarm ant colony optimization for truss structures with discrete variables. Journal of Constructional Steel Research, 2009, 65, 1558-1568.	3.9	204
12	Optimal design of skeletal structures via the charged system search algorithm. Structural and Multidisciplinary Optimization, 2010, 41, 893-911.	3.5	192
13	Enhanced colliding bodies optimization for design problems with continuous and discrete variables. Advances in Engineering Software, 2014, 77, 66-75.	3.8	182
14	Democratic PSO for truss layout and size optimization with frequency constraints. Computers and Structures, 2014, 130, 10-21.	4.4	170
15	Enhanced whale optimization algorithm for sizing optimization of skeletal structures. Mechanics Based Design of Structures and Machines, 2017, 45, 345-362.	4.7	168
16	Optimal Design of Transmission Towers Using Genetic Algorithm and Neural Networks. International Journal of Space Structures, 2008, 23, 1-19.	1.0	153
17	Sizing, geometry and topology optimization of trusses via force method and genetic algorithm. Engineering Structures, 2008, 30, 2360-2369.	5.3	147
18	Truss optimization with natural frequency constraints using a hybridized CSS-BBBC algorithm with trap recognition capability. Computers and Structures, 2012, 102-103, 14-27.	4.4	147

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19	Charged system search for optimal design of frame structures. Applied Soft Computing Journal, 2012, 12, 382-393.	7.2	137
20	Advances in Metaheuristic Algorithms for Optimal Design of Structures. , 2014, , .		134
21	Chaotic swarming of particles: A new method for size optimization of truss structures. Advances in Engineering Software, 2014, 67, 136-147.	3.8	133
22	Colliding Bodies Optimization method for optimum design of truss structures with continuous variables. Advances in Engineering Software, 2014, 70, 1-12.	3.8	131
23	Comparative Study of Backpropagation and Improved Counterpropagation Neural Nets in Structural Analysis and Optimization. International Journal of Space Structures, 1998, 13, 177-185.	1.0	122
24	Structural topology optimization using ant colony methodology. Engineering Structures, 2008, 30, 2559-2565.	5.3	122
25	Design of double layer grids using backpropagation neural networks. Computers and Structures, 2001, 79, 1561-1568.	4.4	119
26	Ray optimization for size and shape optimization of truss structures. Computers and Structures, 2013, 117, 82-94.	4.4	118
27	Water strider algorithm: A new metaheuristic and applications. Structures, 2020, 25, 520-541.	3.6	112
28	Machine learning regression approaches for predicting the ultimate buckling load of variable-stiffness composite cylinders. Acta Mechanica, 2021, 232, 921-931.	2.1	106
29	Applications of Metaheuristic Optimization Algorithms in Civil Engineering. , 2017, , .		105
30	An improved CSS for damage detection of truss structures using changes in natural frequencies and mode shapes. Advances in Engineering Software, 2015, 80, 93-100.	3.8	104
31	Magnetic charged system search: a new meta-heuristic algorithm for optimization. Acta Mechanica, 2013, 224, 85-107.	2.1	102
32	Colliding Bodies Optimization method for optimum discrete design of truss structures. Computers and Structures, 2014, 139, 43-53.	4.4	101
33	An improved ant colony optimization for the design of planar steel frames. Engineering Structures, 2010, 32, 864-873.	5.3	100
34	Vibrating particles system algorithm for truss optimization with multiple natural frequency constraints. Acta Mechanica, 2017, 228, 307-322.	2.1	99
35	An efficient hybrid Particle Swarm and Swallow Swarm Optimization algorithm. Computers and Structures, 2014, 143, 40-59.	4.4	98
36	Performance-based seismic design of steel frames using ant colony optimization. Journal of Constructional Steel Research, 2010, 66, 566-574.	3.9	97

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37	Optimum design of steel frames using Cuckoo Search algorithm with Lévy flights. Structural Design of Tall and Special Buildings, 2013, 22, 1023-1036.	1.9	96
38	Optimal design of Schwedler and ribbed domes via hybrid Big Bang–Big Crunch algorithm. Journal of Constructional Steel Research, 2010, 66, 412-419.	3.9	89
39	Ant Colony Optimization for Design of Space Trusses. International Journal of Space Structures, 2008, 23, 167-181.	1.0	87
40	Shuffled shepherd optimization method: a new Meta-heuristic algorithm. Engineering Computations, 2020, 37, 2357-2389.	1.4	87
41	Topology optimization of trusses using genetic algorithm, force method and graph theory. International Journal for Numerical Methods in Engineering, 2003, 58, 771-791.	2.8	83
42	Advances in Metaheuristic Algorithms for Optimal Design of Structures. , 2017, , .		83
43	Improved GWO algorithm for optimal design of truss structures. Engineering With Computers, 2018, 34, 685-707.	6.1	83
44	Constructability optimal design of reinforced concrete retaining walls using a multi-objective genetic algorithm. Structural Engineering and Mechanics, 2013, 47, 227-245.	1.0	82
45	Optimal Analysis of Structures by Concepts of Symmetry and Regularity. , 2013, , .		79
46	Performance-based multi-objective optimization of large steel structures. Acta Mechanica, 2012, 223, 355-369.	2.1	76
47	Hybridized optimization algorithms for design of trusses with multiple natural frequency constraints. Advances in Engineering Software, 2015, 79, 137-147.	3.8	76
48	Optimal design of planar RC frames considering CO2 emissions using ECBO, EVPS and PSO metaheuristic algorithms. Journal of Building Engineering, 2020, 28, 101014.	3.4	76
49	A novel hybrid charge system search and particle swarm optimization method for multi-objective optimization. Expert Systems With Applications, 2011, 38, 15475-15488.	7.6	72
50	A comparative study of CBO and ECBO for optimal design of skeletal structures. Computers and Structures, 2015, 153, 137-147.	4.4	72
51	Structural damage identification using an enhanced thermal exchange optimization algorithm. Engineering Optimization, 2018, 50, 430-451.	2.6	71
52	A new metaheuristic for continuous structural optimization: water evaporation optimization. Structural and Multidisciplinary Optimization, 2016, 54, 23-43.	3.5	70
53	Optimal design of skeletal structures using ant colony optimization. International Journal for Numerical Methods in Engineering, 2007, 70, 563-581.	2.8	66
54	Parameter identification of Bouc-Wen model for MR fluid dampers using adaptive charged system search optimization. Journal of Mechanical Science and Technology, 2012, 26, 2523-2534.	1.5	66

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55	Metaheuristics: Outlines, MATLAB Codes and Examples. , 2019, , .		66
56	Nondominated Archiving Multicolony Ant Algorithm in Timeâ€‘Cost Trade-Off Optimization. Journal of Construction Engineering and Management - ASCE, 2009, 135, 668-674.	3.8	65
57	Cost optimization of a composite floor system using an improved harmony search algorithm. Journal of Constructional Steel Research, 2010, 66, 664-669.	3.9	65
58	Shape and size optimization of trusses with multiple frequency constraints using harmony search and ray optimizer for enhancing the particle swarm optimization algorithm. Acta Mechanica, 2014, 225, 1595-1605.	2.1	65
59	Billiards-inspired optimization algorithm; a new meta-heuristic method. Structures, 2020, 27, 1722-1739.	3.6	64
60	Topology optimization of trusses considering static and dynamic constraints using the CSS. Applied Soft Computing Journal, 2013, 13, 2727-2734.	7.2	63
61	Charged system search for optimum grillage system design using the LRFD-AISC code. Journal of Constructional Steel Research, 2010, 66, 767-771.	3.9	59
62	An enhanced charged system search for configuration optimization using the concept of fields of forces. Structural and Multidisciplinary Optimization, 2011, 43, 339-351.	3.5	59
63	Computational Structural Analysis and Finite Element Methods. , 2014, , .		59
64	Statistical seismic performance assessment of tuned mass damper inerter. Structural Control and Health Monitoring, 2020, 27, e2602.	4.0	59
65	Damage detection based on MCSS and PSO using modal data. Smart Structures and Systems, 2015, 15, 1253-1270.	1.9	57
66	Genetic algorithm for discrete-sizing optimal design of trusses using the force method. International Journal for Numerical Methods in Engineering, 2002, 55, 55-72.	2.8	55
67	Geometry and topology optimization of geodesic domes using charged system search. Structural and Multidisciplinary Optimization, 2011, 43, 215-229.	3.5	55
68	Chaotic imperialist competitive algorithm for optimum design of truss structures. Structural and Multidisciplinary Optimization, 2012, 46, 355-367.	3.5	55
69	A hybrid CBOâ€‘PSO algorithm for optimal design of truss structures with dynamic constraints. Applied Soft Computing Journal, 2015, 34, 260-273.	7.2	55
70	Improved cycle bases for the flexibility analysis of structures. Computer Methods in Applied Mechanics and Engineering, 1976, 9, 267-272.	6.6	54
71	Chaos-based firefly algorithms for optimization of cyclically large-size braced steel domes with multiple frequency constraints. Computers and Structures, 2019, 214, 28-39.	4.4	54
72	Stochastic paint optimizer: theory and application in civil engineering. Engineering With Computers, 2022, 38, 1921-1952.	6.1	53

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73	Comparison of nine meta-heuristic algorithms for optimal design of truss structures with frequency constraints. <i>Advances in Engineering Software</i> , 2014, 76, 9-30.	3.8	52
74	Colliding Bodies Optimization. , 2015, , .		52
75	Block diagonalization of adjacency and Laplacian matrices for graph product; applications in structural mechanics. <i>International Journal for Numerical Methods in Engineering</i> , 2006, 68, 33-63.	2.8	51
76	Performance-based seismic design of steel frames utilizing charged system search optimization. <i>Applied Soft Computing Journal</i> , 2014, 22, 213-221.	7.2	51
77	Meta-heuristic Algorithms for Optimal Design of Real-Size Structures. , 2018, , .		51
78	An efficient method for decomposition of regular structures using graph products. <i>International Journal for Numerical Methods in Engineering</i> , 2004, 61, 1797-1808.	2.8	50
79	Hybrid charged system search and particle swarm optimization for engineering design problems. <i>Engineering Computations</i> , 2011, 28, 423-440.	1.4	50
80	Economic dispatch of power systems using an adaptive charged system search algorithm. <i>Applied Soft Computing Journal</i> , 2018, 73, 607-622.	7.2	50
81	An improved magnetic charged system search for optimization of truss structures with continuous and discrete variables. <i>Applied Soft Computing Journal</i> , 2015, 28, 400-410.	7.2	49
82	Improved arithmetic optimization algorithm and its application to discrete structural optimization. <i>Structures</i> , 2022, 35, 748-764.	3.6	49
83	Size/geometry optimization of trusses by the force method and genetic algorithm. <i>ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik</i> , 2004, 84, 347-357.	1.6	48
84	Hybrid Algorithm of Harmony Search, Particle Swarm and Ant Colony for Structural Design Optimization. <i>Studies in Computational Intelligence</i> , 2009, , 159-198.	0.9	47
85	A combinatorial optimization problem; optimal generalized cycle bases. <i>Computer Methods in Applied Mechanics and Engineering</i> , 1979, 20, 39-51.	6.6	46
86	Seismic optimal design of 3D steel frames using cuckoo search algorithm. <i>Structural Design of Tall and Special Buildings</i> , 2015, 24, 210-227.	1.9	46
87	Cyclical Parthenogenesis Algorithm for guided modal strain energy based structural damage detection. <i>Applied Soft Computing Journal</i> , 2017, 57, 250-264.	7.2	46
88	Structural optimization by gradient-based neural networks. <i>International Journal for Numerical Methods in Engineering</i> , 1999, 46, 297-311.	2.8	44
89	Discrete cost optimization of composite floor system using social harmony search model. <i>Applied Soft Computing Journal</i> , 2012, 12, 372-381.	7.2	44
90	Optimal design of dome truss structures with dynamic frequency constraints. <i>Structural and Multidisciplinary Optimization</i> , 2016, 53, 605-621.	3.5	44

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91	Robust optimum design of a tuned mass damper inerter. <i>Acta Mechanica</i> , 2020, 231, 3871-3896.	2.1	44
92	Block circulant matrices and applications in free vibration analysis of cyclically repetitive structures. <i>Acta Mechanica</i> , 2011, 217, 51-62.	2.1	43
93	Charged System Search Algorithm for the Optimum Cost Design of Reinforced Concrete Cantilever Retaining Walls. <i>Arabian Journal for Science and Engineering</i> , 2013, 38, 563-570.	1.1	43
94	Optimal structural control of tall buildings using tuned mass dampers via chaotic optimization algorithm. <i>Structures</i> , 2020, 28, 2704-2713.	3.6	43
95	Optimal design of planar steel frame structures utilizing meta-heuristic optimization algorithms. <i>Structures</i> , 2020, 25, 335-346.	3.6	43
96	Optimal design of large-scale space steel frames using cascade enhanced colliding body optimization. <i>Structural and Multidisciplinary Optimization</i> , 2017, 55, 237-256.	3.5	42
97	Recent Developments in the Force Method of Structural Analysis. <i>Applied Mechanics Reviews</i> , 1992, 45, 401-418.	10.1	41
98	Eigensolutions for matrices of special structures. <i>Communications in Numerical Methods in Engineering</i> , 2002, 19, 125-136.	1.3	41
99	A new multi-swarm multi-objective optimization method for structural design. <i>Advances in Engineering Software</i> , 2013, 58, 54-69.	3.8	41
100	A new hybrid meta-heuristic algorithm for optimal design of large-scale dome structures. <i>Engineering Optimization</i> , 2018, 50, 235-252.	2.6	41
101	Graph products for configuration processing of space structures. <i>Computers and Structures</i> , 2008, 86, 1219-1231.	4.4	40
102	Optimal seismic design of Reinforced Concrete shear wall-frame structures. <i>KSCE Journal of Civil Engineering</i> , 2014, 18, 2181-2190.	1.9	40
103	Advances in Metaheuristic Algorithms for Optimal Design of Structures. , 2021, , .		40
104	Nonlinear analysis and optimal design of structures via force method and genetic algorithm. <i>Computers and Structures</i> , 2006, 84, 770-778.	4.4	39
105	Optimal design of steel frames under seismic loading using two meta-heuristic algorithms. <i>Journal of Constructional Steel Research</i> , 2013, 82, 111-130.	3.9	39
106	Improved Shuffled Jaya algorithm for sizing optimization of skeletal structures with discrete variables. <i>Structures</i> , 2021, 29, 107-128.	3.6	38
107	Eigensolution of symmetric frames using graph factorization. <i>Communications in Numerical Methods in Engineering</i> , 2004, 20, 889-910.	1.3	37
108	Analysis, design and optimization of structures using force method and genetic algorithm. <i>International Journal for Numerical Methods in Engineering</i> , 2006, 65, 1570-1584.	2.8	37

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109	Optimal Design of Scissor-Link Foldable Structures Using Ant Colony Optimization Algorithm. Computer-Aided Civil and Infrastructure Engineering, 2007, 22, 56-64.	9.8	37
110	An improved ray optimization algorithm for design of truss structures. Periodica Polytechnica: Civil Engineering, 2013, 57, 97.	0.6	37
111	Cycle bases for the flexibility analysis of structures. International Journal for Numerical Methods in Engineering, 1974, 8, 521-528.	2.8	36
112	Cost optimization of a composite floor system, one-way waffle slab, and concrete slab formwork using a charged system search algorithm. Scientia Iranica, 2012, 19, 410-416.	0.4	36
113	Plasma generation optimization: a new physically-based metaheuristic algorithm for solving constrained optimization problems. Engineering Computations, 2021, 38, 1554-1606.	1.4	36
114	Efficient buckling and free vibration analysis of cyclically repeated space truss structures. Finite Elements in Analysis and Design, 2010, 46, 943-948.	3.2	35
115	Multi-objective colliding bodies optimization algorithm for design of trusses. Journal of Computational Design and Engineering, 2019, 6, 49-59.	3.1	35
116	Ordering for bandwidth reduction. Computers and Structures, 1986, 24, 413-420.	4.4	34
117	Graph symmetry and dynamic systems. Computers and Structures, 2004, 82, 2229-2240.	4.4	34
118	An efficient analysis of repetitive structures generated by graph products. International Journal for Numerical Methods in Engineering, 2010, 84, 108-126.	2.8	33
119	A hybrid evolutionary graph-based multi-objective algorithm for layout optimization of truss structures. Acta Mechanica, 2013, 224, 343-364.	2.1	33
120	Two-dimensional colliding bodies algorithm for optimal design of truss structures. Advances in Engineering Software, 2015, 83, 70-79.	3.8	33
121	Optimal design of large-scale frames with an advanced charged system search algorithm using box-shaped sections. Engineering With Computers, 2021, 37, 2521-2541.	6.1	33
122	Robust design optimization of laminated plates under uncertain bounded buckling loads. Structural and Multidisciplinary Optimization, 2019, 59, 877-891.	3.5	32
123	An efficient hybrid approach based on Harris Hawks optimization and imperialist competitive algorithm for structural optimization. Engineering With Computers, 2022, 38, 1555-1583.	6.1	32
124	An efficient program for generating subminimal cycle bases for the flexibility analysis of structures. Communications in Applied Numerical Methods, 1986, 2, 339-344.	0.5	31
125	Eigensolutions for factorable matrices of special patterns. Communications in Numerical Methods in Engineering, 2003, 20, 133-146.	1.3	31
126	Compound matrix block diagonalization for efficient solution of eigenproblems in structural mechanics. Acta Mechanica, 2007, 188, 155-166.	2.1	31



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127	Improved group-theoretical method for eigenvalue problems of special symmetric structures, using graph theory. <i>Advances in Engineering Software</i> , 2010, 41, 22-31.	3.8	31
128	Life-cycle cost optimization of steel moment-frame structures: performance-based seismic design approach. <i>Earthquake and Structures</i> , 2014, 7, 271-294.	1.0	31
129	Analysis of pantograph foldable structures. <i>Computers and Structures</i> , 1996, 59, 131-140.	4.4	30
130	An accelerated water evaporation optimization formulation for discrete optimization of skeletal structures. <i>Computers and Structures</i> , 2016, 177, 218-228.	4.4	30
131	Cyclical parthenogenesis algorithm for layout optimization of truss structures with frequency constraints. <i>Engineering Optimization</i> , 2017, 49, 1317-1334.	2.6	30
132	Wavefront reduction using graphs, neural networks and genetic algorithm. <i>International Journal for Numerical Methods in Engineering</i> , 2004, 60, 1803-1815.	2.8	29
133	Guided Modal Strain Energy-Based Approach for Structural Damage Identification Using Tug-of-War Optimization Algorithm. <i>Journal of Computing in Civil Engineering</i> , 2017, 31, .	4.7	29
134	A hybrid CSS and PSO algorithm for optimal design of structures. <i>Structural Engineering and Mechanics</i> , 2012, 42, 783-797.	1.0	29
135	A new VPS-based algorithm for multi-objective optimization problems. <i>Engineering With Computers</i> , 2020, 36, 1029-1040.	6.1	28
136	A set theoretical shuffled shepherd optimization algorithm for optimal design of cantilever retaining wall structures. <i>Engineering With Computers</i> , 2020, 37, 3265.	6.1	28
137	Hybrid Invasive Weed Optimization-Shuffled Frog-Leaping Algorithm for Optimal Design of Truss Structures. <i>Iranian Journal of Science and Technology - Transactions of Civil Engineering</i> , 2020, 44, 405-420.	1.9	27
138	Optimum design of laterally-supported castellated beams using CBO algorithm. <i>Steel and Composite Structures</i> , 2015, 18, 305-324.	1.3	27
139	Graphs and structures. <i>Computers and Structures</i> , 1991, 40, 893-901.	4.4	26
140	Spectral bisection of adaptive finite element meshes for parallel processing. <i>Computers and Structures</i> , 1999, 70, 315-323.	4.4	26
141	Approximate eigensolution of locally modified regular structures using a substructuring technique. <i>Computers and Structures</i> , 2011, 89, 529-537.	4.4	26
142	Engineering design optimization using chaotic enhanced charged system search algorithms. <i>Acta Mechanica</i> , 2012, 223, 2269-2285.	2.1	26
143	Particle Swarm Optimization. , 2014, , 9-40.		26
144	Enhanced Colliding Bodies Algorithm for Truss Optimization with Frequency Constraints. <i>Journal of Computing in Civil Engineering</i> , 2015, 29, .	4.7	26

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145	An efficient two-stage method for optimal sensor placement using graph-theoretical partitioning and evolutionary algorithms. <i>Structural Control and Health Monitoring</i> , 2019, 26, e2325.	4.0	26
146	Colliding bodies optimization for size and topology optimization of truss structures. <i>Structural Engineering and Mechanics</i> , 2015, 53, 847-865.	1.0	26
147	A Multistage Algorithm for Blood Banking Supply Chain Allocation Problem. <i>International Journal of Civil Engineering</i> , 2017, 15, 103-112.	2.0	25
148	Optimal design of cyclically symmetric trusses with frequency constraints using cyclical parthenogenesis algorithm. <i>Advances in Structural Engineering</i> , 2018, 21, 739-755.	2.4	25
149	Emergency management systems after disastrous earthquakes using optimization methods: A comprehensive review. <i>Advances in Engineering Software</i> , 2020, 149, 102885.	3.8	25
150	Comparative study of finite element nodal ordering methods. <i>Engineering Structures</i> , 1998, 20, 86-96.	5.3	24
151	Stability analysis of hyper symmetric skeletal structures using group theory. <i>Acta Mechanica</i> , 2008, 200, 177-197.	2.1	24
152	Analysis of structures convertible to repeated structures using graph products. <i>Computers and Structures</i> , 2013, 125, 153-163.	4.4	24
153	Metaheuristic Optimization Algorithms in Civil Engineering: New Applications. <i>Studies in Computational Intelligence</i> , 2020, , .	0.9	24
154	Design optimization of jacket offshore platform considering fatigue damage using Genetic Algorithm. <i>Ocean Engineering</i> , 2021, 227, 108869.	4.3	24
155	Decomposition of symmetric mass-spring vibrating systems using groups, graphs and linear algebra. <i>Communications in Numerical Methods in Engineering</i> , 2006, 23, 639-664.	1.3	23
156	Block diagonalization of Laplacian matrices of symmetric graphs via group theory. <i>International Journal for Numerical Methods in Engineering</i> , 2007, 69, 908-947.	2.8	23
157	Plastic limit analysis of frames using ant colony systems. <i>Computers and Structures</i> , 2008, 86, 1152-1163.	4.4	23
158	Nodal ordering for bandwidth reduction using ant system algorithm. <i>Engineering Computations</i> , 2009, 26, 313-323.	1.4	23
159	Vibration analysis of regular structures by graph products: Cable networks. <i>Computers and Structures</i> , 2010, 88, 588-601.	4.4	23
160	Colliding-Bodies Optimization for Truss Optimization with Multiple Frequency Constraints. <i>Journal of Computing in Civil Engineering</i> , 2015, 29, .	4.7	23
161	Construction Site Layout Planning Problem Using Two New Meta-heuristic Algorithms. <i>Iranian Journal of Science and Technology - Transactions of Civil Engineering</i> , 2016, 40, 263-275.	1.9	23
162	A new method for modification of ground motions using wavelet transform and enhanced colliding bodies optimization. <i>Applied Soft Computing Journal</i> , 2016, 47, 357-369.	7.2	23

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163	Derivation of New Equations for Prediction of Principal Ground-Motion Parameters using M5â€² Algorithm. Journal of Earthquake Engineering, 2016, 20, 910-930.	2.5	23
164	Optimum stacking sequence design of composite laminates for maximum buckling load capacity using parameter-less optimization algorithms. Engineering With Computers, 2019, 35, 813-832.	6.1	23
165	Optimum design of large steel skeletal structures using chaotic firefly optimization algorithm based on the Gaussian map. Structural and Multidisciplinary Optimization, 2019, 60, 879-894.	3.5	23
166	Optimum design of three-dimensional steel frames with prismatic and non-prismatic elements. Engineering With Computers, 2020, 36, 1011-1027.	6.1	23
167	Black Hole Mechanics Optimization: a novel meta-heuristic algorithm. Asian Journal of Civil Engineering, 2020, 21, 1129-1149.	1.6	23
168	An enhanced Forensic-Based Investigation algorithm and its application to optimal design of frequency-constrained dome structures. Computers and Structures, 2021, 256, 106643.	4.4	23
169	Sizing, geometry and topology optimization of trusses using force method and supervised charged system search. Structural Engineering and Mechanics, 2014, 50, 365-382.	1.0	23
170	A new PSRO algorithm for frequency constraint truss shape and size optimization. Structural Engineering and Mechanics, 2014, 52, 445-468.	1.0	23
171	Optimum topology design of geometrically nonlinear suspended domes using ECBO. Structural Engineering and Mechanics, 2015, 56, 667-694.	1.0	23
172	Optimum design of steel floor system: effect of floor division number, deck thickness and castellated beams. Structural Engineering and Mechanics, 2016, 59, 933-950.	1.0	23
173	Detection of damage in truss structures using Simplified Dolphin Echolocation algorithm based on modal data. Smart Structures and Systems, 2016, 18, 983-1004.	1.9	23
174	An efficient flexibility analysis of structures. Computers and Structures, 1986, 22, 973-977.	4.4	22
175	Improved group theoretic method using graph products for the analysis of symmetric-regular structures. Acta Mechanica, 2010, 210, 265-289.	2.1	22
176	Solving the conditional and unconditional -center problem with modified harmony search: A real case study. Scientia Iranica, 2011, 18, 867-877.	0.4	22
177	Hypotrochoid spiral optimization approach for sizing and layout optimization of truss structures with multiple frequency constraints. Engineering With Computers, 2019, 35, 1443-1462.	6.1	22
178	A multi-level finite element nodal ordering using algebraic graph theory. Finite Elements in Analysis and Design, 2002, 38, 245-261.	3.2	21
179	A unified method for eigendecomposition of graph products. Communications in Numerical Methods in Engineering, 2005, 21, 377-388.	1.3	21
180	Factorization for efficient solution of eigenproblems of adjacency and Laplacian matrices for graph products. International Journal for Numerical Methods in Engineering, 2008, 75, 58-82.	2.8	21

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181	Improved slime mould algorithm with elitist strategy and its application to structural optimization with natural frequency constraints. <i>Computers and Structures</i> , 2022, 264, 106760.	4.4	21
182	A unified approach to parameter selection in meta-heuristic algorithms for layout optimization. <i>Journal of Constructional Steel Research</i> , 2011, 67, 1453-1462.	3.9	20
183	Chaotic biogeography algorithm for size and shape optimization of truss structures with frequency constraints. <i>Periodica Polytechnica: Civil Engineering</i> , 2014, 58, 397-422.	0.6	20
184	New developments in the optimal analysis of regular and near-regular structures: decomposition, graph products, force method. <i>Acta Mechanica</i> , 2015, 226, 665-681.	2.1	20
185	Dolphin monitoring for enhancing metaheuristic algorithms: Layout optimization of braced frames. <i>Computers and Structures</i> , 2016, 165, 1-9.	4.4	20
186	Optimum seismic design of steel frames considering the connection types. <i>Journal of Constructional Steel Research</i> , 2017, 130, 79-87.	3.9	20
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