Kapil Khandelwal

List of Publications by Year
in descending order

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64 papers	1,958 citations	236833 25 h-index	254106 43 g-index
64 all docs	64 docs citations	64 times ranked	1250 citing authors

#	Article	IF	Citations
1	Finite strain FE2 analysis with data-driven homogenization using deep neural networks. Computers and Structures, 2022, 263, 106742.	2.4	12
2	Gursonâ€“Tvergaardâ€“Needleman model guided fractureâ€resistant structural designs under finiteÂdeformations. International Journal for Numerical Methods in Engineering, 2022, 123, 3344-3388.	1.5	2
3	On the performance evaluation of stochastic finite elements in linear and nonlinear problems. Computers and Structures, 2021, 243, 106408.	2.4	7
4	A computational framework for homogenization and multiscale stability analyses of nonlinear periodic materials. International Journal for Numerical Methods in Engineering, 2021, 122, 6527-6575.	1.5	5
5	Topology Optimization of Energy-Dissipating Plastic Structures with Shear Modified Gursonâ€“Tvergaardâ€“Needleman Model. Journal of Structural Engineering, 2020, 146, .	1.7	5
6	Topology optimization of dissipative metamaterials at finite strains based on nonlinear homogenization. Structural and Multidisciplinary Optimization, 2020, 62, 1419-1455.	1.7	8
7	Optimized bi-material layouts for energy dissipating composites under finite deformations. International Journal of Solids and Structures, 2020, 193-194, 152-171.	1.3	9
8	Computational design of finite strain auxetic metamaterials via topology optimization and nonlinear homogenization. Computer Methods in Applied Mechanics and Engineering, 2019, 356, 490-527.	3.4	40
9	Bi-material topology optimization for energy dissipation with inertia and material rate effects under finite deformations. Finite Elements in Analysis and Design, 2019, 164, 18-41.	1.7	14
10	Design of dissipative multimaterial viscoelasticâ€hyperelastic systems at finite strains via topology optimization. International Journal for Numerical Methods in Engineering, 2019, 119, 1037-1068.	1.5	10
11	Design of periodic elastoplastic energy dissipating microstructures. Structural and Multidisciplinary Optimization, 2019, 59, 461-483.	1.7	21
12	A unified framework for nonlinear pathâ€dependent sensitivity analysis in topology optimization. International Journal for Numerical Methods in Engineering, 2018, 115, 1-56.	1.5	39
13	On the application of multipoint Root-Solvers for improving global convergence of fracture problems. Engineering Fracture Mechanics, 2018, 193, 77-95.	2.0	4
14	Failure resistant topology optimization of structures using nonlocal elastoplastic-damage model. Structural and Multidisciplinary Optimization, 2018, 58, 1589-1618.	1.7	30
15	On the locking free isogeometric formulations for 3-D curved Timoshenko beams. Finite Elements in Analysis and Design, 2018, 143, 46-65.	1.7	22
16	A framework for implementation of RVEâ€based multiscale models in computational homogenization using isogeometric analysis. International Journal for Numerical Methods in Engineering, 2018, 114, 1018-1051.	1.5	21
17	An isogeometric approach for analysis of phononic crystals and elastic metamaterials with complex geometries. Computational Mechanics, 2018, 62, 285-307.	2.2	10
18	Topology optimization with incompressible materials under small and finite deformations using mixed u/p elements. International Journal for Numerical Methods in Engineering, 2018, 115, 1015-1052.	1.5	13

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19	Topology optimization of energy absorbing structures with maximum damage constraint. International Journal for Numerical Methods in Engineering, 2017, 112, 737-775.	1.5	55
20	Design of energy dissipating elastoplastic structures under cyclic loads using topology optimization. Structural and Multidisciplinary Optimization, 2017, 56, 391-412.	1.7	27
21	Topology optimization of pressure dependent elastoplastic energy absorbing structures with material damage constraints. Finite Elements in Analysis and Design, 2017, 133, 42-61.	1.7	28
22	Topology optimization of structures with gradient elastic material. Structural and Multidisciplinary Optimization, 2017, 56, 371-390.	1.7	10
23	Topology optimization of structures with anisotropic plastic materials using enhanced assumed strain elements. Structural and Multidisciplinary Optimization, 2017, 55, 1965-1988.	1.7	32
24	Closure to â€œComplex Perturbation Method for Sensitivity Analysis of Nonlinear Trussesâ€•by Ravi Kiran, Lei Li, and Kapil Khandelwal. Journal of Structural Engineering, 2017, 143, 07017006.	1.7	0
25	Design of fracture resistant energy absorbing structures using elastoplastic topology optimization. Structural and Multidisciplinary Optimization, 2017, 56, 1447-1475.	1.7	29
26	Topology optimization of geometrically nonlinear trusses with spurious eigenmodes control. Engineering Structures, 2017, 131, 324-344.	2.6	18
27	Complex Perturbation Method for Sensitivity Analysis of Nonlinear Trusses. Journal of Structural Engineering, 2017, 143, .	1.7	16
28	Analysis of three-dimensional curved beams using isogeometric approach. Engineering Structures, 2016, 117, 560-574.	2.6	48
29	Modeling of nonlocal damage-plasticity in beams using isogeometric analysis. Computers and Structures, 2016, 165, 76-95.	2.4	20
30	Topology optimization of structures with length-scale effects using elasticity with microstructure theory. Computers and Structures, 2015, 157, 165-177.	2.4	17
31	Volume preserving projection filters and continuation methods in topology optimization. Engineering Structures, 2015, 85, 144-161.	2.6	62
32	An adaptive quadratic approximation for structural and topology optimization. Computers and Structures, 2015, 151, 130-147.	2.4	13
33	A coupled microvoid elongation and dilation based ductile fracture model for structural steels. Engineering Fracture Mechanics, 2015, 145, 15-42.	2.0	18
34	Connection topology optimization of steel moment frames using metaheuristic algorithms. Engineering Structures, 2015, 100, 276-292.	2.6	18
35	Automatic implementation of finite strain anisotropic hyperelastic models using hyper-dual numbers. Computational Mechanics, 2015, 55, 229-248.	2.2	15
36	Performance of cubic convergent methods for implementing nonlinear constitutive models. Computers and Structures, 2015, 156, 83-100.	2.4	14

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37	Comparison of robustness of metaheuristic algorithms for steel frame optimization. Engineering Structures, 2015, 102, 40-60.	2.6	43
38	A micromechanical cyclic void growth model for ultra-low cycle fatigue. International Journal of Fatigue, 2015, 70, 24-37.	2.8	40
39	A triaxiality and Lode parameter dependent ductile fracture criterion. Engineering Fracture Mechanics, 2014, 128, 121-138.	2.0	101
40	Gurson model parameters for ductile fracture simulation in ASTM A992 steels. Fatigue and Fracture of Engineering Materials and Structures, 2014, 37, 171-183.	1.7	60
41	A finite strain continuum damage model for simulating ductile fracture in steels. Engineering Fracture Mechanics, 2014, 116, 172-189.	2.0	24
42	Two-point gradient-based MMA (TGMMA) algorithm for topology optimization. Computers and Structures, 2014, 131, 34-45.	2.4	26
43	Modeling of high temperature creep in ASTM A992 structural steels. Engineering Structures, 2014, 80, 426-434.	2.6	32
44	Computational Models for Ductile Fracture Prediction in Structural Engineering Applications. , 2014, 3, 1947-1955.		7
45	Fast-to-Compute Weakly Coupled Ductile Fracture Model for Structural Steels. Journal of Structural Engineering, 2014, 140, .	1.7	19
46	Numerically approximated Cauchy integral (NACI) for implementation of constitutive models. Finite Elements in Analysis and Design, 2014, 89, 33-51.	1.7	8
47	Design-driven harmony search (DDHS) in steel frame optimization. Engineering Structures, 2014, 59, 798-808.	2.6	34
48	Complex step derivative approximation for numerical evaluation of tangent moduli. Computers and Structures, 2014, 140, 1-13.	2.4	32
49	Experimental Studies and Models for Ductile Fracture in ASTM A992 Steels at High Triaxiality. Journal of Structural Engineering, 2014, 140, .	1.7	44
50	Optimization of Large Steel Frames Using a Design-Driven Harmony Search. , 2013, , .		0
51	A micromechanical model for ductile fracture prediction in ASTM A992 steels. Engineering Fracture Mechanics, 2013, 102, 101-117.	2.0	55
52	Topology optimization for minimum compliance using a control strategy. Engineering Structures, 2013, 48, 674-682.	2.6	19
53	Performance evaluation of sandwich panel systems for blast mitigation. Engineering Structures, 2013, 56, 2119-2130.	2.6	46
54	Blast Amelioration Systems: Effect of Topological Parameters on Performance of Layered Metallic-Lattice Sandwich Panels. , 2011, , .		0

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55	Pushdown resistance as a measure of robustness in progressive collapse analysis. Engineering Structures, 2011, 33, 2653-2661.	2.6	138
56	Hybrid Cellular Automaton: A Novel Framework for Non-Linear Topology Optimization. , 2010, , .		3
57	Progressive collapse analysis of seismically designed steel braced frames. Journal of Constructional Steel Research, 2009, 65, 699-708.	1.7	177
58	Macromodel-Based Simulation of Progressive Collapse: Steel Frame Structures. Journal of Structural Engineering, 2008, 134, 1070-1078.	1.7	120
59	Assessment of Progressive Collapse Residual Capacity Using Pushdown Analysis. , 2008, , .		14
60	Macro Models for Progressive Collapse Analysis of Steel Moment Frame Buildings. , 2007, , .		5
61	Collapse Behavior of Steel Special Moment Resisting Frame Connections. Journal of Structural Engineering, 2007, 133, 646-655.	1.7	130
62	Catenary Action during Collapse of Steel MRF Buildings. , 2006, , 1.		3
63	Ductile Web Fracture Initiation in Steel Shear Links. Journal of Structural Engineering, 2006, 132, 1192-1200.	1.7	58
64	Progressive Collapse of Moment Resisting Steel Frame Buildings. , 2005, , 1.		8