

Il Yong Kim

List of Publications by Year in descending order

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132
papers

4,130
citations

147726

31
h-index

128225

60
g-index

133
all docs

133
docs citations

133
times ranked

3153
citing authors

#	ARTICLE	IF	CITATIONS
1	Adaptive weighted-sum method for bi-objective optimization: Pareto front generation. <i>Structural and Multidisciplinary Optimization</i> , 2005, 29, 149-158.	1.7	481
2	Design optimization of electric vehicle battery cooling plates for thermal performance. <i>Journal of Power Sources</i> , 2011, 196, 10359-10368.	4.0	422
3	Adaptive weighted sum method for multiobjective optimization: a new method for Pareto front generation. <i>Structural and Multidisciplinary Optimization</i> , 2006, 31, 105-116.	1.7	339
4	Remaining useful life estimation using a bidirectional recurrent neural network based autoencoder scheme. <i>Mechanical Systems and Signal Processing</i> , 2019, 129, 764-780.	4.4	236
5	Influence of operating conditions on the optimum design of electric vehicle battery cooling plates. <i>Journal of Power Sources</i> , 2014, 245, 644-655.	4.0	198
6	An improved similarity-based prognostic algorithm for RUL estimation using an RNN autoencoder scheme. <i>Reliability Engineering and System Safety</i> , 2020, 199, 106926.	5.1	151
7	Computational study of Wolff's law with trabecular architecture in the human proximal femur using topology optimization. <i>Journal of Biomechanics</i> , 2008, 41, 2353-2361.	0.9	124
8	Three-dimensional micro-level computational study of Wolff's law via trabecular bone remodeling in the human proximal femur using design space topology optimization. <i>Journal of Biomechanics</i> , 2011, 44, 935-942.	0.9	112
9	Conceptual and detailed design of an automotive engine cradle by using topology, shape, and size optimization. <i>Structural and Multidisciplinary Optimization</i> , 2015, 51, 547-564.	1.7	94
10	Variable chromosome length genetic algorithm for progressive refinement in topology optimization. <i>Structural and Multidisciplinary Optimization</i> , 2005, 29, 445-456.	1.7	93
11	Multi-material topology optimization for practical lightweight design. <i>Structural and Multidisciplinary Optimization</i> , 2018, 58, 1081-1094.	1.7	79
12	Design space optimization using a numerical design continuation method. <i>International Journal for Numerical Methods in Engineering</i> , 2002, 53, 1979-2002.	1.5	78
13	Hybrid data-driven physics-based model fusion framework for tool wear prediction. <i>International Journal of Advanced Manufacturing Technology</i> , 2019, 101, 2861-2872.	1.5	78
14	Comparison of different hip prosthesis shapes considering micro-level bone remodeling and stress-shielding criteria using three-dimensional design space topology optimization. <i>Journal of Biomechanics</i> , 2011, 44, 1722-1728.	0.9	76
15	Optimal damping layout in a shell structure using topology optimization. <i>Journal of Sound and Vibration</i> , 2013, 332, 2873-2883.	2.1	72
16	Analysis of different RNN autoencoder variants for time series classification and machine prognostics. <i>Mechanical Systems and Signal Processing</i> , 2021, 149, 107322.	4.4	69
17	Computational simulation of simultaneous cortical and trabecular bone change in human proximal femur during bone remodeling. <i>Journal of Biomechanics</i> , 2010, 43, 294-301.	0.9	55
18	Greenhouse gases emitted in manufacturing a product – A new economic model. <i>CIRP Annals - Manufacturing Technology</i> , 2011, 60, 53-56.	1.7	53

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19	Design optimization of aircraft landing gear assembly under dynamic loading. Structural and Multidisciplinary Optimization, 2018, 57, 1357-1375.	1.7	49
20	Multi-material topology optimization for automotive design problems. Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering, 2018, 232, 1950-1969.	1.1	49
21	Analogy of Strain Energy Density Based Bone-Remodeling Algorithm and Structural Topology Optimization. Journal of Biomechanical Engineering, 2009, 131, 011012.	0.6	48
22	Flexible platform component design under uncertainty. Journal of Intelligent Manufacturing, 2007, 18, 115-126.	4.4	47
23	Three dimensional shape optimization of total knee replacements for reduced wear. Structural and Multidisciplinary Optimization, 2009, 38, 405-414.	1.7	47
24	Topology, size and shape optimization of an automotive cross car beam. Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering, 2015, 229, 1361-1378.	1.1	45
25	A nonlinear-drift-driven Wiener process model for remaining useful life estimation considering three sources of variability. Reliability Engineering and System Safety, 2021, 212, 107631.	5.1	42
26	Design optimization of a total knee replacement for improved constraint and flexion kinematics. Journal of Biomechanics, 2011, 44, 1014-1020.	0.9	40
27	Additive manufacturing infill optimization for automotive 3D-printed ABS components. Rapid Prototyping Journal, 2020, 26, 89-99.	1.6	39
28	A holistic numerical model to predict strain hardening and damage of UHMWPE under multiple total knee replacement kinematics and experimental validation. Journal of Biomechanics, 2009, 42, 2520-2527.	0.9	38
29	A new efficient convergence criterion for reducing computational expense in topology optimization: reducible design variable method. International Journal for Numerical Methods in Engineering, 2012, 90, 752-783.	1.5	37
30	Stress rupture predictions of pressure vessels exposed to fully engulfing and local impingement accidental fire heat loads. Engineering Failure Analysis, 2009, 16, 1141-1152.	1.8	33
31	Application of design space optimization to bone remodeling simulation of trabecular architecture in human proximal femur for higher computational efficiency. Finite Elements in Analysis and Design, 2010, 46, 311-319.	1.7	33
32	Computational simulation of trabecular adaptation progress in human proximal femur during growth. Journal of Biomechanics, 2009, 42, 573-580.	0.9	32
33	Multimaterial multijoint topology optimization. International Journal for Numerical Methods in Engineering, 2018, 115, 1552-1579.	1.5	32
34	An analytical study of the plasticity of sandwich honeycomb panels subjected to low-velocity impact. Composites Part B: Engineering, 2019, 168, 121-128.	5.9	32
35	Design Optimization of a Total Hip Prosthesis for Wear Reduction. Journal of Biomechanical Engineering, 2009, 131, 051003.	0.6	30
36	A multiobjective topology optimization approach for cost and time minimization in additive manufacturing. International Journal for Numerical Methods in Engineering, 2019, 118, 371-394.	1.5	29

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37	3D topology optimization for cost and time minimization in additive manufacturing. Structural and Multidisciplinary Optimization, 2020, 61, 731-748.	1.7	28
38	Total Hip Wear Assessment: A Comparison Between Computational and In Vitro Wear Assessment Techniques Using ISO 14242 Loading and Kinematics. Journal of Biomechanical Engineering, 2009, 131, 041011.	0.6	27
39	3D multi-material and multi-joint topology optimization with tooling accessibility constraints. Structural and Multidisciplinary Optimization, 2019, 60, 2531-2558.	1.7	27
40	Modified element stacking method for multi-material topology optimization with anisotropic materials. Structural and Multidisciplinary Optimization, 2020, 61, 525-541.	1.7	26
41	A time-space Kriging-based sequential metamodeling approach for multi-objective crashworthiness optimization. Applied Mathematical Modelling, 2019, 69, 378-404.	2.2	24
42	Surface and honeycomb core damage in adhesively bonded aluminum sandwich panels subjected to low-velocity impact. Composites Part B: Engineering, 2022, 230, 109506.	5.9	22
43	Structural Shape Optimization Considering Both Performance and Manufacturing Cost. , 2004, , .		21
44	Hybrid sequential fault estimation for multi-mode diagnosis of gas turbine engines. Mechanical Systems and Signal Processing, 2019, 115, 255-268.	4.4	21
45	Computational study on the effect of loading alteration caused by disc degeneration on the trabecular architecture in human lumbar spine. Journal of Biomechanics, 2010, 43, 492-499.	0.9	19
46	Quantifying the competing relationship between durability and kinematics of total knee replacements using multiobjective design optimization and validated computational models. Journal of Biomechanics, 2012, 45, 141-147.	0.9	18
47	Multi-Material Topology Optimization: A Practical Approach and Application. , 0, , .		17
48	Simultaneous single-loop multimaterial and multijoint topology optimization. International Journal for Numerical Methods in Engineering, 2020, 121, 1558-1594.	1.5	15
49	Simultaneous isotropic and anisotropic multi-material topology optimization for conceptual-level design of aerospace components. Structural and Multidisciplinary Optimization, 2021, 64, 441-456.	1.7	15
50	Topology optimization of a pre-stiffened aircraft bulkhead. Structural and Multidisciplinary Optimization, 2019, 60, 1667-1685.	1.7	14
51	Uniaxial high-temperature creep property predictions made by CDM and MPC omega techniques for ASME SA 455 steel. Engineering Failure Analysis, 2009, 16, 1303-1313.	1.8	13
52	Multi-Material Topology Optimization Considering Manufacturing Constraints. , 0, , .		13
53	Concurrent topology and stacking sequence optimization of composite laminate plates using lamination parameters. Composite Structures, 2021, 276, 114556.	3.1	12
54	Motorcycle Chassis Design Utilizing Multi-Material Topology Optimization. SAE International Journal of Advances and Current Practices in Mobility, 0, 2, 1905-1912.	2.0	12

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55	Variable Chromosome Length Genetic Algorithm for Structural Topology Design Optimization. , 2004, ,		11
56	Multidisciplinary design optimization of a zero-emission vehicle chassis considering crashworthiness and hydroformability. Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering, 2007, 221, 511-526.	1.1	11
57	Coupled Multi-Material and Joint Topology Optimization: A Proof of Concept. , 2018, , .		11
58	Simultaneous topology and build orientation optimization for minimization of additive manufacturing cost and time. International Journal for Numerical Methods in Engineering, 2020, 121, 3442-3481.	1.5	11
59	Multi-Material Topology Optimization: A Practical Method for Efficient Material Selection and Design. , 0, , .		11
60	Multi-Material Topology Optimization as a Concept Generation and Design Tool. , 0, , .		11
61	The effect of scan path on thermal gradient during selective laser melting. International Journal of Advanced Manufacturing Technology, 2020, 110, 1261-1274.	1.5	10
62	Multidisciplinary Structural Truss Topology Optimization for Reconfigurability. , 2004, , .		9
63	Design for additive manufacturing: 3D simultaneous topology and build orientation optimization. Structural and Multidisciplinary Optimization, 2020, 62, 1989-2009.	1.7	9
64	Material interface control in multi-material topology optimization using pseudo-cost domain method. International Journal for Numerical Methods in Engineering, 2021, 122, 455-482.	1.5	9
65	Identifying optimal features for cutting tool condition monitoring using recurrent neural networks. Advances in Mechanical Engineering, 2020, 12, 168781402098438.	0.8	9
66	Influences of the uneven contact pressure and the initial temperature on the hot judder behavior in a multi-disc clutch. Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, 2020, 234, 500-514.	1.0	8
67	Spatial gradient interface detection in topology optimization for an unstructured mesh. Structural and Multidisciplinary Optimization, 2021, 63, 515-522.	1.7	8
68	Multi-material topology optimization considering isotropic and anisotropic materials combination. Structural and Multidisciplinary Optimization, 2021, 64, 1567-1583.	1.7	8
69	Design for Flexibility: Performance and Economic Optimization of Product Platform Components. , 2004, , .		7
70	Improvement in robustness and computational efficiency of material models for finite element analysis of metal powder compaction and experimental validation. International Journal of Advanced Manufacturing Technology, 2013, 68, 1785-1795.	1.5	7
71	Lightweight Optimal Design of a Rear Bumper System Based on Surrogate Models. , 0, , .		7
72	Experimental investigation of adhesive fillet size on barely visible impact damage in metallic honeycomb sandwich panels. Composites Part B: Engineering, 2020, 184, 107723.	5.9	7

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73	Void region restriction for additive manufacturing via a diffusion physics approach. International Journal for Numerical Methods in Engineering, 2020, 121, 4347-4373.	1.5	7
74	A topology optimization implementation for depth-of-focus extension of binary phase filters. Structural and Multidisciplinary Optimization, 2020, 62, 2731-2748.	1.7	7
75	Single variable-based multi-material structural optimization considering interface behavior. Computer Methods in Applied Mechanics and Engineering, 2020, 367, 113114.	3.4	7
76	Multi-material topology optimization considering natural frequency constraint. Engineering Computations, 2022, 39, 2604-2629.	0.7	7
77	A Comparison of Lightweight Design Concepts of a Passenger Aircraft Seat Using Topology and CFRP Laminate Optimization. , 0, , .		6
78	Multi-Material Topology Optimization and Multi-Material Selection in Design. , 0, , .		6
79	The development, calibration and validation of a numerical total knee replacement kinematics simulator considering laxity and unconstrained flexion motions. Computer Methods in Biomechanics and Biomedical Engineering, 2012, 15, 585-593.	0.9	5
80	Design optimization of a business aircraft seat considering static and dynamic certification loading and manufacturability. Structural and Multidisciplinary Optimization, 2020, 62, 3457-3476.	1.7	5
81	Cutting Tool Wear Estimation Using a Genetic Algorithm Based Long Short-Term Memory Neural Network. , 2018, , .		4
82	Substructuring verification of a rear fuselage mounted twin-engine aircraft. Aerospace Science and Technology, 2019, 93, 105305.	2.5	4
83	Assembly Level Topology Optimization Towards a Part Consolidation Algorithm for Additive Manufacturing. , 2020, , .		4
84	Multi-Material Topology Optimization Considering Draw Direction Constraints. , 0, , .		4
85	Packaging optimization using the dynamic vector fields method. International Journal for Numerical Methods in Engineering, 2019, 120, 860-879.	1.5	3
86	Automotive Hood Panel Design Utilizing Anisotropic Multi-Material Topology Optimization. SAE International Journal of Advances and Current Practices in Mobility, 0, 3, 2658-2665.	2.0	3
87	Part consolidation for additive manufacturing: A multilayered topology optimization approach. International Journal for Numerical Methods in Engineering, 2021, 122, 4987-5027.	1.5	3
88	Shape optimization of an Un-cemented Total Hip Replacement Prosthesis Considering Volumetric Wear. , 2006, , .		2
89	Effect of Stiffener Configuration on Bulkhead Modal Parameters. , 2018, , .		2
90	Advanced Primal-Dual Interior-Point Method for the Method of Moving Asymptotes. , 2018, , .		2

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91	Predictive Compressor Wash Optimization for Economic Operation of Gas Turbine. Journal of Engineering for Gas Turbines and Power, 2018, 140, .	0.5	2
92	Multi-Objective Model Updating Optimization Considering Orthogonality. Journal of Computational and Nonlinear Dynamics, 2019, 14, .	0.7	2
93	Structural design of a morphing serpentine inlet using a multi-material topology optimization methodology. Structural and Multidisciplinary Optimization, 2021, 64, 389-422.	1.7	2
94	Multi-Joint Topology Optimization: A Method for Considering Joining in Multi-Material Design. , 0, , .		2
95	Additive Manufacturing Experimental Infill Testing and Optimization for Automotive Lightweighting. , 0, , .		2
96	Integrated topology and packaging optimization using coupled material and component pseudo-densities. Structural and Multidisciplinary Optimization, 2021, 64, 3345-3380.	1.7	2
97	Blurring effect analysis of an x-ray mask for synchrotron radiation lithography. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 1998, 16, 1992.	1.6	1
98	Optimization and Numerical Flow Analysis of a Valveless Micropump. JSME International Journal Series C-Mechanical Systems Machine Elements and Manufacturing, 2003, 46, 772-778.	0.3	1
99	Continuum Topology Optimization. , 2004, , .		1
100	Design Optimization of an Automotive Universal Joint as an Assembly. , 2006, , .		1
101	Multi-objective shape optimisation of an automotive universal joint assembly. International Journal of Heavy Vehicle Systems, 2009, 16, 271.	0.1	1
102	Computational Modal Analysis of a Twin-Engine Rear Fuselage Mounted Aircraft Support Frame. , 2017, , .		1
103	Minimization of Cost and Print Time of Additive Manufacturing via Topology Optimization. , 2018, , .		1
104	Advanced Finite Element Analysis of a Lightweight Nanometal-Polymer Hybrid Component with Experimental Validation, and Its Applications to Vehicle Lightweighting. , 2018, , .		1
105	Advancements to commercial 2D infill for lightweighting of structural FDM components. Progress in Additive Manufacturing, 0, , 1.	2.5	1
106	Control Arm Design Utilizing Multi-Material Topology Optimization. , 0, , .		1
107	A novel method for concurrent thickness and material optimization of non-laminate structures. Structural and Multidisciplinary Optimization, 2021, 64, 1421-1437.	1.7	1
108	Topology optimization for infill in MEx. Rapid Prototyping Journal, 2021, 27, 1580-1590.	1.6	1

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109	Topology, size and shape optimization of an automotive cross car beam. , 0, .		1
110	Effect of Bulkhead Pressurization on the Vibro-Acoustic Properties of an Aft-Fuselage-Mounted Twin-Engine Aircraft. Journal of Vibration and Acoustics, Transactions of the ASME, 2020, 142, .	1.0	1
111	Damping of Powder Metal Rings. SAE International Journal of Vehicle Dynamics, Stability, and NVH, 0, 4, .	0.5	1
112	A Generalized Consolidated Topology Optimization and DfAM Design Approach and its Application for Assembly Design. , 0, , .		1
113	Integrated topology and packaging optimization for multi-phase multi-component problems. Structural and Multidisciplinary Optimization, 2022, 65, 1.	1.7	1
114	Novel x-ray mask structure with low out-of-plane distortion. , 1998, 3331, 511.		0
115	An Evolutionary Method of Topology Optimal Design by Increasing and Decreasing the Number of Design Variables. , 2002, , .		0
116	Multiobjective Design Optimization of Total Knee Replacements Considering UHMWPE Damage and Kinematics. , 2008, , .		0
117	Computational Simulation for Trabecular Adaptation in Human Proximal Femur Using Design Space Optimization. , 2008, , .		0
118	Computational Simulation of Bone Remodeling using Design Space Topology Optimization. Proceedings in Applied Mathematics and Mechanics, 2011, 11, 97-98.	0.2	0
119	Topology Optimization of Large Scale Turbine Engine Bracket Assembly with Additive Manufacturing Considerations. , 2018, , 1211-1223.		0
120	Damage Assessment on the Surface and Honeycomb Core of the Aluminum Sandwich Panel Subjected to Low-Velocity Impact. , 2018, , .		0
121	A Novel Adaptive Topology Optimization Method Considering Unnecessary Element Removal and Progressive Mesh Refinement. , 2018, , .		0
122	Displacement Controlled 2D Compliant Mechanisms for use in Morphing Structures. , 2020, , .		0
123	Aircraft Wing Design Through Concurrent Thickness and Material Optimization. , 2021, , .		0
124	Multi-Material Topology Optimization for Conceptual-Level Aircraft Seat Design. , 2021, , .		0
125	Topology Optimization of a Section of a Morphing Serpentine Aircraft Inlet. , 2021, , .		0
126	Topology and Cost Optimization Applied to Develop New Designs for a Monorail Structure. , 2018, , 1143-1155.		0

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127	Influence of the Initial Temperature on the Clutch Hot Judder. , 2018, , .		0
128	System Level Design Optimization Method for Lightweight Manufacturable Design. , 2018, , .		0
129	Schmittâ€™Kim additive manufacturing evaluation tree: a guide for new users. Progress in Additive Manufacturing, 2022, 7, 375-397.	2.5	0
130	Validation of a Low Fidelity Catenary Model Developed Using a Novel Optimization Algorithm. , 0, , .		0
131	An Optimization Method to Find the Initial Catenary Configuration by Using a Gradient-Based Algorithm. , 0, , .		0
132	Simultaneous Free-Size, Gauge, and Composite Optimization for Automotive Chassis Design. , 0, , .		0