Asif S Usmani

List of Publications by Year
in descending order

120 papers	3,453 citations	126907 33 h-index	168389 53 g-index
124 all docs	124 docs citations	124 times ranked	1625 citing authors

#	Article	IF	Citations
1	Fundamental principles of structural behaviour under thermal effects. Fire Safety Journal, 2001, 36, 721-744.	3.1	218
2	Finite element modelling of the pelvis: Inclusion of muscular and ligamentous boundary conditions. Medical Engineering and Physics, 2007, 29, 739-748.	1.7	207
3	How did the WTC towers collapse: a new theory. Fire Safety Journal, 2003, 38, 501-533.	3.1	158
4	TECHNIQUES TO IMPROVE THE SHEAR STRENGTH OF IMPACTED BONE GRAFT. Journal of Bone and Joint Surgery - Series A, 2003, 85, 639-646.	3.0	125
5	Mechanical considerations in impaction bone grafting. Journal of Bone and Joint Surgery: British Volume, 1999, 81, 118-124.	3.4	104
6	Behaviour of concrete structures in fire. Thermal Science, 2007, 11, 37-52.	1.1	93
7	FireGrid: An e-infrastructure for next-generation emergency response support. Journal of Parallel and Distributed Computing, 2010, 70, 1128-1141.	4.1	86
8	Smart Detection of Fire Source in Tunnel Based on the Numerical Database and Artificial Intelligence. Fire Technology, 2021, 57, 657-682.	3.0	81
9	A structural analysis of the first Cardington test. Journal of Constructional Steel Research, 2001, 57, 581-601.	3.9	73
10	An application of the PEER performance based earthquake engineering framework to structures in fire. Engineering Structures, 2014, 66, 100-115.	5.3	73
11	A finite element model for the simulations of mould filling in metal casting and the associated heat transfer. International Journal for Numerical Methods in Engineering, 1992, 35, 787-806.	2.8	68
12	Tall building collapse mechanisms initiated by fire: Mechanisms and design methodology. Engineering Structures, 2012, 36, 90-103.	5.3	65
13	hâ€adaptive finite element solution of high Rayleigh number thermally driven cavity problem. International Journal of Numerical Methods for Heat and Fluid Flow, 2000, 10, 598-615.	2.8	63
14	A structural analysis of the Cardington British Steel Corner Test. Journal of Constructional Steel Research, 2002, 58, 427-442.	3.9	63
15	Finite element analysis of heat transfer and flow problems using adaptive remeshing including application to solidification problems. International Journal for Numerical Methods in Engineering, 1991, 32, 767-781.	2.8	62
16	Modeling of steel frame structures in fire using OpenSees. Computers and Structures, 2013, 118, 90-99.	4.4	60
17	Finite Element Analysis for Heat Transfer. , 1994, , .		59
18	Efficient mould filling simulation in castings by an explicit finite element method. International Journal for Numerical Methods in Fluids, 1995, 20, 493-506.	1.6	59

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19	A critical review of â€œtravelling fireâ€•scenarios for performance-based structural engineering. Fire Safety Journal, 2017, 91, 568-578.	3.1	58
20	Heat transfer analysis of the composite slab in the Cardington frame fire tests. Fire Safety Journal, 2001, 36, 815-839.	3.1	55
21	Simulating the behavior of restrained steel beams to flame impingement from localized-fires. Journal of Constructional Steel Research, 2013, 83, 156-165.	3.9	53
22	Behaviour of a small composite steel frame structure in a â€œlong-coolâ€•and a â€œshort-hotâ€•fire. Fire Safety Journal, 2004, 39, 327-357.	3.1	51
23	Modelling of heated composite floor slabs with reference to the Cardington experiments. Fire Safety Journal, 2001, 36, 745-767.	3.1	49
24	Full-scale fire test on an earthquake-damaged reinforced concrete frame. Fire Safety Journal, 2015, 73, 1-19.	3.1	49
25	Stability of the World Trade Center Twin Towers Structural Frame in Multiple Floor Fires. Journal of Engineering Mechanics - ASCE, 2005, 131, 654-657.	2.9	45
26	OpenSees Software Architecture for the Analysis of Structures in Fire. Journal of Computing in Civil Engineering, 2015, 29, .	4.7	44
27	Progressive collapse mechanisms investigation of planar steel moment frames under localized fire. Journal of Constructional Steel Research, 2015, 115, 160-168.	3.9	43
28	A real-time forecast of tunnel fire based on numerical database and artificial intelligence. Building Simulation, 2022, 15, 511-524.	5.6	43
29	An intelligent tunnel firefighting system and small-scale demonstration. Tunnelling and Underground Space Technology, 2022, 120, 104301.	6.2	41
30	Perspectives of big experimental database and artificial intelligence in tunnel fire research. Tunnelling and Underground Space Technology, 2021, 108, 103691.	6.2	39
31	Finite element modelling of natural-convection-controlled change of phase. International Journal for Numerical Methods in Fluids, 1992, 14, 1019-1036.	1.6	37
32	Effect of Bracing Systems on Fire-Induced Progressive Collapse of Steel Structures Using OpenSees. Fire Technology, 2015, 51, 1249-1273.	3.0	37
33	Behavior of Structures in Fire and Real Design - A Case Study. Journal of Fire Protection Engineering, 2006, 16, 5-35.	0.8	35
34	Progressive Collapse Mechanisms of Steel Frames Exposed to Fire. Advances in Structural Engineering, 2014, 17, 381-398.	2.4	35
35	Structural Response of Tall Buildings to Multiple Floor Fires. Journal of Structural Engineering, 2007, 133, 1719-1732.	3.4	32
36	Assessment of the Structural Response of Masonry Cross Vaults. Strain, 2002, 38, 119-127.	2.4	31

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37	Limit capacity of laterally restrained reinforced concrete floor slabs in fire. Cement and Concrete Composites, 2004, 26, 127-140.	10.7	31
38	An extended travelling fire method framework for performanceâ€based structural design. Fire and Materials, 2020, 44, 437-457.	2.0	30
39	The World Trade Center 9/11 Disaster and Progressive Collapse of Tall Buildings. Fire Technology, 2013, 49, 741-765.	3.0	28
40	Case Study of the Failure of a Cross Vault: Church of Holyrood Abbey. Journal of Architectural Engineering, 2003, 9, 109-117.	1.6	27
41	Bonded Fibre Reinforced Polymer Strengthening in a Real Fire. Advances in Structural Engineering, 2009, 12, 867-878.	2.4	27
42	Heat transfer principles in thermal calculation of structures in fire. Fire Safety Journal, 2015, 78, 85-95.	3.1	27
43	Evolution of fire models for estimating structural fire-resistance. Fire Safety Journal, 2021, 124, 103367.	3.1	27
44	Using Opensees for Structures in Fire. Journal of Structural Fire Engineering, 2012, 3, 57-70.	0.8	26
45	Structural behaviour in fire compartment under different heating regimes â€" Part 1 (slab thermal) Tj ETQq1 1 0.784314 rgBT /Overlo	3.1	25
46	Constitutive models for impacted morsellised cortico-cancellous bone. Biomaterials, 2006, 27, 2162-2170.	11.4	24
47	Preference-driven Kriging-based multiobjective optimization method with a novel multipoint infill criterion and application to airfoil shape design. Aerospace Science and Technology, 2020, 96, 105555.	4.8	23
48	Aspects of adaptive mesh generation based on domain decomposition and Delaunay triangulation. Finite Elements in Analysis and Design, 1995, 20, 47-70.	3.2	22
49	Accuracy of NDE in bridge assessment. Engineering Structures, 1998, 20, 979-984.	5.3	22
50	The effect of acetabular cup size on the short-term stability of revision hip arthroplasty: A finite element investigation. Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine, 2004, 218, 239-249.	1.8	22
51	Full-scale testing of a damaged reinforced concrete frame in fire. Proceedings of the Institution of Civil Engineers: Structures and Buildings, 2012, 165, 335-346.	0.8	22
52	Analysis of restrained composite beams exposed to fire using a hybrid simulation approach. Engineering Structures, 2018, 172, 956-966.	5.3	22
53	Modelling of Steel-Concrete Composite Structures in Fire Using OpenSees. Advances in Structural Engineering, 2014, 17, 249-264.	2.4	21
54	Modelling concrete slabs subjected to fires using nonlinear layered shell elements and concrete damage-plasticity material. Engineering Structures, 2021, 234, 111977.	5.3	21

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55	Composite steel-framed structures in fire with protected and unprotected edge beams. Journal of Constructional Steel Research, 2007, 63, 1138-1150.	3.9	20
56	Managing dynamic enterprise and urgent workloads on clouds using layered queuing and historical performance models. Simulation Modelling Practice and Theory, 2011, 19, 1479-1495.	3.8	20
57	Computational performance of beam-column elements in modelling structural members subjected to localised fire. Engineering Structures, 2018, 156, 490-502.	5.3	20
58	Towards scenario fires â€“ modelling structural response to fire using an integrated computational tool. Advances in Structural Engineering, 2018, 21, 2056-2067.	2.4	18
59	Bridge fires in the 21st century: A literature review. Fire Safety Journal, 2021, 126, 103487.	3.1	18
60	Resource management of enterprise cloud systems using layered queuing and historical performance models. , 2010, , .		16
61	The analysis of mould filling in castings using the finite element method. Journal of Materials Processing Technology, 1993, 38, 291-302.	6.3	14
62	Finite element solution of incompressible flows using an explicit segregated approach. Archives of Computational Methods in Engineering, 1995, 2, 69-93.	10.2	14
63	The elastic properties of morsellised cortico-cancellous bone graft are dependent on its prior loading. Journal of Biomechanics, 2006, 39, 1517-1526.	2.1	13
64	Facade Fire Hazards of Bench-Scale Aluminum Composite Panel with Flame-Retardant Core. Fire Technology, 2023, 59, 5-28.	3.0	13
65	An Architecture for an Integrated Fire Emergency Response System for the Built Environment. Fire Safety Science, 2008, 9, 427-438.	0.3	13
66	Effect of elevated temperatures on the shear-friction behaviour of concrete: Experimental and analytical study. Engineering Structures, 2020, 225, 111305.	5.3	13
67	Effect of fire on composite long span truss floor systems. Journal of Constructional Steel Research, 2006, 62, 303-315.	3.9	12
68	A very simple method for assessing tall building safety in major fires. International Journal of Steel Structures, 2009, 9, 17-28.	1.3	12
69	Fire safety assessment of super tall buildings: A case study on Shanghai Tower. Case Studies in Fire Safety, 2015, 4, 28-38.	1.0	12
70	Fire resistance of composite steel & concrete highway bridges. Journal of Constructional Steel Research, 2018, 148, 707-719.	3.9	12
71	Thermal Analysis Infrastructure in OpenSees for Fire and its Smart Application Interface Towards Natural Fire Modelling. Fire Technology, 2021, 57, 2955-2980.	3.0	12
72	hâ€adaptive finite element solution of unsteady thermally driven cavity problem. International Journal of Numerical Methods for Heat and Fluid Flow, 2001, 11, 172-195.	2.8	11

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73	Bending and membrane action in concrete slabs. Fire and Materials, 2004, 28, 139-157.	2.0	11
74	Feasibility of dimensionally reduced heat transfer analysis for structural members subjected to localised fire. Advances in Structural Engineering, 2018, 21, 1708-1722.	2.4	11
75	Framework for fire risk assessment of bridges. Structures, 2021, 33, 523-532.	3.6	11
76	Structural behaviour in fire compartment under different heating regimes â€" part 2: (slab mean) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 6	3.1	10
77	3D non-linear analysis of the acetabular construct following impaction grafting. Computer Methods in Biomechanics and Biomedical Engineering, 2006, 9, 125-133.	1.6	10
78	Solidification in castings by finite element method. Materials Science and Technology, 1990, 6, 482-490.	1.6	9
79	Damage mechanisms in cementitious coatings on steel members under axial loading. Construction and Building Materials, 2015, 90, 18-35.	7.2	9
80	Damage investigation of cementitious fire resistive coatings under complex loading. Construction and Building Materials, 2019, 204, 659-674.	7.2	9
81	Modeling the collapse of the Plasco Building. Part I: Reconstruction of fire. Building Simulation, 2022, 15, 583-596.	5.6	9
82	Influence of fire scenarios on progressive collapse mechanisms of steel framed structures. Steel Construction, 2014, 7, 169-172.	0.8	8
83	Evaluating the potential of simulation assisted energy management systems: A case for electrical heating optimisation. Energy and Buildings, 2018, 174, 579-586.	6.7	8
84	Remaining fire resistance of steel frames following a moderate earthquake â€" A case study. Journal of Constructional Steel Research, 2020, 164, 105754.	3.9	8
85	OpenFIRE: An Open Computational Framework for Structural Response to Real Fires. Fire Technology, 2022, 58, 1011-1038.	3.0	8
86	Integrated nonlinear structural simulation of composite buildings in fire. Engineering Structures, 2022, 252, 113593.	5.3	8
87	Numerical Investigation of Thermal Responses of a Composite Structure in Horizontally Travelling fires Using OpenSees. Procedia Engineering, 2013, 62, 736-744.	1.2	7
88	Damage mechanisms in cementitious coatings on steel members in bending. Proceedings of the Institution of Civil Engineers: Structures and Buildings, 2015, 168, 351-369.	0.8	6
89	An h-adaptive SUPG-FEM solution of the pure advection equation. Applied Numerical Mathematics, 1998, 26, 193-202.	2.1	5
90	Possible â€˜panel instabilityâ€™ in composite deck floor systems under fire. Journal of Constructional Steel Research, 2003, 59, 1397-1433.	3.9	5

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91	An analytical study of the nonlinear thermo-mechanical behaviour of thin isotropic rectangular plates. Computers and Structures, 2014, 141, 1-8.	4.4	5
92	Analysis of Composite Steel-concrete Beams Exposed to Fire using OpenSees. Journal of Structural Fire Engineering, 2015, 6, 1-20.	0.8	5
93	Virtual hybrid simulation of beams with web openings in fire. Journal of Structural Fire Engineering, 2019, 11, 118-134.	0.8	5
94	Analysis of Restrained Composite Perforated Beams during Fire Using a Hybrid Simulation Approach. Journal of Structural Engineering, 2020, 146, 04020002.	3.4	5
95	Isogeometric analysis-based design of post-tensioned concrete beam towards construction-oriented topology optimization. Structural and Multidisciplinary Optimization, 2021, 64, 4237-4253.	3.5	5
96	A computational approach for modelling composite slabs in fire within OpenSees framework. Engineering Structures, 2022, 255, 113909.	5.3	5
97	Model characterisation of localised burning impact from localised fire tests to travelling fire scenarios. Journal of Building Engineering, 2022, 54, 104601.	3.4	5
98	Perspectives of Using Artificial Intelligence in Building Fire Safety. , 2022, , 139-159.		5
99	h -ADAPTIVITY AND "HONEST" GFEM FOR ADVECTION-DOMINATED TRANSPORT. Numerical Heat Transfer, Part B: Fundamentals, 2002, 41, 339-359.	0.9	4
100	Innovative Structural Engineering for Tall Buildings in Fire. Structural Engineering International: Journal of the International Association for Bridge and Structural Engineering (IABSE), 2006, 16, 142-147.	0.8	4
101	Modeling fire-induced radiative heat transfer in smoke-filled structural cavities. International Journal of Thermal Sciences, 2013, 66, 24-33.	4.9	4
102	Progressive Collapse Resistance of Braced Steel Frames Exposed to Fire. , 2014, , .		4
103	Testing of Full-scale RC Frame under Simulated Fire Following Earthquake. Journal of Structural Fire Engineering, 2014, 5, 215-228.	0.8	4
104	Temperature-dependent nonlinear behaviour of thin rectangular plates exposed to through-depth thermal gradients. Composite Structures, 2015, 132, 652-664.	5.8	4
105	Prima Facie Evidence of the Fast Impact of a Lightning Stroke on the Lower Ionosphere. Geophysical Research Letters, 2020, 47, e2020GL090274.	4.0	4
106	The Collapse of World Trade Center 7: Revisited. Fire Technology, 0, , 1.	3.0	4
107	BIM Integrated Workflow Management and Monitoring System for Modular Buildings. International Journal of 3-D Information Modeling, 2013, 2, 17-28.	0.2	3
108	On thermo-mechanical nonlinear behaviour of shallow shells. International Journal of Non-Linear Mechanics, 2016, 82, 114-123.	2.6	3

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109	A thermo-mechanical analysis of stainless steel structures in fire. Engineering Structures, 2020, 210, 110091.	5.3	3
110	An Adaptive Finite Element Solution for Cohesive Sediment Transport. Proceedings in Marine Science, 2002, , 627-641.	0.1	2
111	Nonlinear stress analysis of plates under thermo-mechanical loads. Journal of Physics: Conference Series, 2012, 382, 012022.	0.4	2
112	Mechanical Properties of Undamaged and Damaged Steel Rebars at Elevated Temperatures. Journal of Structural Fire Engineering, 2014, 5, 251-260.	0.8	2
113	Temperature-dependent nonlinear analysis of shallow shells: A theoretical approach. Composite Structures, 2016, 141, 1-13.	5.8	2
114	Analytical model for the composite effect of coupled beams with discrete shear connectors. Structural Engineering and Mechanics, 2014, 52, 369-389.	1.0	2
115	Response of restrained stainless steel corrugated web beams at elevated temperature. Structures, 2022, 41, 668-683.	3.6	2
116	SOLUTION OF ADVECTION PROBLEMS USING h-ADAPTIVE FEM WITH DISCONTINUITY CAPTURING SUPG METHOD. , 1997, , .		1
117	Collapse of tall buildings in multi-storey fires. Fire Safety Science, 2008, 9, 1291-1302.	0.3	0
118	Safety of Structures in Fire. Lecture Notes in Civil Engineering, 2020, , 1153-1160.	0.4	0
119	Modelling concrete slabs subjected to localised fire action with OpenSees. Journal of Structural Fire Engineering, 2022, ahead-of-print, .	0.8	0
120	A Review on Structural Fire Tests of Two-Way Composite Floors. Fire Technology, 0, , .	3.0	0