Mahendra Kumar Samal

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

124
papers904
citations16
h-index25
g-index132
ext. papers1,081
ext. citations2.4
avg, IF4.53
L-index

#	Paper	IF	Citations
124	An atomistic analysis of the effect of grain boundary and the associated deformation mechanisms during plain strain compression of a Cu bicrystal. <i>Computational Materials Science</i> , 2022 , 202, 110953	3.2	Ο
123	Crystal Plasticity Modelling of Neutron Irradiation Effects on The Flow and Damage Behaviour of Zircaloy-4. Lecture Notes in Mechanical Engineering, 2022, 255-265	0.4	
122	Multiaxial Cyclic Test Response of Low C-Mn Steel Under Proportional/Non-proportional Conditions and Constitutive Material Equations Aspects. <i>Lecture Notes in Mechanical Engineering</i> , 2022 , 329-341	0.4	
121	Molecular Dynamics Simulations of Dislocation Nucleation from a Pristine and Damaged Grain Boundary in Nickel and Quantification of Associated Activation Energy Parameters. <i>Lecture Notes in Mechanical Engineering</i> , 2022 , 21-26	0.4	
120	Modified Cowper-Symonds Model for Predicting the StressBtrain Behavior of SA516 Gr. 70 Carbon Steel. <i>Lecture Notes in Mechanical Engineering</i> , 2022 , 65-72	0.4	
119	Probing grain boundary dependence of damage evolution under shock loading in a variety of FCC metals. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2022 , 436, 128091	2.3	
118	Assessment of Cyclic Plasticity Behaviour of Primary Piping Material of Indian PHWRs Under Multiaxial Loading Scenario. <i>Lecture Notes in Mechanical Engineering</i> , 2021 , 227-247	0.4	O
117	Multiaxial fatigue tests under variable strain paths and asynchronous loading and assessment of fatigue life using critical plane models. <i>International Journal of Fatigue</i> , 2021 , 145, 106049	5	2
116	Experimental investigation of scatter in fracture toughness data of SA516Gr.70 steel in the ductile-to-brittle transition regime for high rate of loading using split Hopkinson pressure bar test setup. <i>Engineering Failure Analysis</i> , 2021 , 122, 105288	3.2	1
115	Atomistically informed crystal plasticity analysis of deformation behavior of alloy 690 including grain boundary effects. <i>Materialia</i> , 2021 , 16, 101053	3.2	4
114	A New Procedure to Evaluate Parameters of Johnson@ook ElasticPlastic Material Model from Varying Strain Rate Split Hopkinson Pressure Bar Tests. <i>Journal of Materials Engineering and Performance</i> , 2021 , 30, 8500	1.6	3
113	Study of plastically deformed region underneath the ball in indentation tests and evaluation of mechanical properties of materials through finite element simulation and a hybrid algorithm. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering	1.3	0
112	Experimental Investigation of Strain-Rate- and Temperature-Dependent Mechanical Properties of SA516Gr.70 Steel and Development of an Appropriate Material Model. <i>Journal of Materials Engineering and Performance</i> , 2021 , 30, 116-130	1.6	2
111	Proposing an improved cyclic plasticity material model for assessment of multiaxial response of low C-Mn steel. <i>International Journal of Fatigue</i> , 2021 , 142, 105888	5	1
110	Simulation of Hall P etch effect in alloy 690 using crystal plasticity model considering effect of grain boundaries. <i>Materials Letters</i> , 2021 , 297, 129915	3.3	O
109	Effect of shear localisation on yield surface for porous metals containing ellipsoidal voids. Engineering Fracture Mechanics, 2021 , 255, 107932	4.2	0
108	Effect of texture on crack initiation toughness and the corresponding anisotropy in ductile fracture resistance of thin Zircaloy-4 sheets of Indian PHWR core component. <i>Journal of Nuclear Materials</i> , 2020 , 535, 152189	3.3	3

107	Validating generality of recently developed critical plane model for fatigue life assessments using multiaxial test database on seventeen different materials. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2020 , 43, 1327-1352	3	3	
106	Development of correlation for natural convection heat transfer for large horizontal calandria vessel for in-calandria retention of corium in PHWRs. <i>Nuclear Engineering and Design</i> , 2020 , 360, 110517	, 1.8		
105	Harnessing atomistic simulations to quantify activation parameters for dislocation nucleation from a grain boundary in Nickel. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2020 , 384, 126501	2.3	2	
104	Simulation of bicrystal deformation including grain boundary effects: Atomistic computations and crystal plasticity finite element analysis. <i>Computational Materials Science</i> , 2020 , 179, 109641	3.2	4	
103	Experimental evaluation of orientation and temperature dependent material stress-strain curves of Zr2.5%Nb Indian pressure tube material and development of a suitable anisotropic material model. <i>Journal of Nuclear Materials</i> , 2020 , 530, 151970	3.3	3	
102	Fracture toughness evaluation of axially-cracked tubular thin-walled specimens of Zircaloy-4 and its implications for integrity analysis of nuclear fuel clad. <i>Theoretical and Applied Fracture Mechanics</i> , 2020 , 106, 102449	3.7	2	
101	Study of effect of loading rate on fracture toughness of SA516Gr.70 steel for nuclear pressure vessel and piping in DBTT regime and evaluation of shift in reference transition temperature. <i>Theoretical and Applied Fracture Mechanics</i> , 2020, 110, 102814	3.7	3	
100	Evolution of shape and size of voids under shear dominated loading conditions in ductile materials. <i>Engineering Fracture Mechanics</i> , 2020 , 236, 107208	4.2	2	
99	Development of new critical plane model for assessment of fatigue life under multi-axial loading conditions. <i>International Journal of Fatigue</i> , 2019 , 129, 105209	5	13	
98	Dislocation nucleation from damaged grain boundaries in face centered cubic metals An atomistic study. <i>Materialia</i> , 2019 , 8, 100497	3.2	7	
97	Identification of constitutive parameters for high temperature deformation of pressure tube of Indian PHWR considering multi-axial state of stress. <i>Nuclear Engineering and Design</i> , 2018 , 327, 286-298	1.8	0	
96	Stress Analysis for Integrity Assessment of High-Energy Hot Reheat Pipe Bends of 210 MW Coal-Fired Unit 2018 , 369-382			
95	Void growth in single crystal Copper-an atomistic modeling and statistical analysis study. <i>Philosophical Magazine</i> , 2018 , 98, 577-604	1.6	11	
94	Deformation behavior of Nickel-based superalloy Su-263: Experimental characterization and crystal plasticity finite element modeling. <i>Materials Science & Description of Structural Materials: Properties, Microstructure and Processing</i> , 2018 , 735, 19-30	5.3	7	
93	Hierarchical multiscale modeling of plasticity in copper: From single crystals to polycrystalline aggregates. <i>International Journal of Plasticity</i> , 2018 , 101, 188-212	7.6	32	
92	Development of a model for simulation of micro-twin and corresponding asymmetry in high temperature deformation behavior of nickel-based superalloy single crystals using crystal plasticity-based framework. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of	1.3	1	
91	An atomistic insight into the fracture behavior of bicrystal aluminum containing twist grain boundaries. <i>Computational Materials Science</i> , 2017 , 130, 268-281	3.2	17	
90	An approach to eliminate stepped features in multistage incremental sheet forming process: Experimental and FEA analysis. <i>Journal of Mechanical Science and Technology</i> , 2017 , 31, 599-604	1.6	14	

89	Modeling the Mechanical Behavior of Dynamically Deformed Cu using the Theories of Crystal Plasticity. <i>Procedia Engineering</i> , 2017 , 173, 1203-1208		1
88	Simulation of Anisotropic Deformation Behavior of Pressure Tubes During High Temperature Loading Conditions. <i>Procedia Engineering</i> , 2017 , 173, 859-866		1
87	A novel approach based on flexible supports for forming non-axisymmetric parts in SPISF. <i>International Journal of Advanced Manufacturing Technology</i> , 2017 , 92, 2463-2477	3.2	9
86	An atomistic modelling and statistical analysis study of crackWoid interaction in Aluminum. <i>Philosophical Magazine Letters</i> , 2017 , 97, 504-514	1	4
85	Prevention of Corrosion in Austenitic Stainless Steel through a Predictive Numerical Model Simulating Grain Boundary Chromium Depletion. <i>Advances in Civil and Industrial Engineering Book Series</i> , 2017 , 374-389	0.5	
84	Numerical Simulation of High Temperature Deformation Behavior of Nickel-Based Superalloys Using Crystal Plasticity Models and Finite Element Method 2017 , 341-373		
83	Experiments on a Ring Tension Setup and FE Analysis to Evaluate Transverse Mechanical Properties of Tubular Components. <i>Advances in Civil and Industrial Engineering Book Series</i> , 2017 , 91-115	0.5	
82	FE Analysis and Experimental Investigation of Cracked and Un-Cracked Thin-Walled Tubular Components to Evaluate Mechanical and Fracture Properties. <i>Advances in Civil and Industrial Engineering Book Series</i> , 2017 , 266-293	0.5	
81	Development of a Material Constitutive Model and Simulation Technique to Predict Nonlinearities in Piezoelectric Materials under Weak Electric Fields. <i>Advances in Mechatronics and Mechanical Engineering</i> , 2017 , 271-303	0.5	
80	Numerical Simulation of High Temperature Deformation Behavior of Nickel-Based Superalloys Using Crystal Plasticity Models and Finite Element Method. <i>Advances in Mechatronics and Mechanical Engineering</i> , 2017 , 414-446	0.5	
79	Simulation of Material StressBtrain Curve and Creep Deformation Response of Nickel Based Superalloys Using Crystal Plasticity Based Finite Element Models. <i>Transactions of the Indian Institute of Metals</i> , 2016 , 69, 949-960	1.2	4
78	Evaluation of Fracture Resistance Behavior of Zircaloy Fuel Clad Tubes of Indian PHWRs Using Experiments on Ring Specimens and Continuum Damage Mechanics Models. <i>Transactions of the Indian Institute of Metals</i> , 2016 , 69, 1687-1698	1.2	
77	Single Point Incremental Forming Using Flexible Die. Lecture Notes in Mechanical Engineering, 2016, 747	1-7349	
76	Design Aspects of a Ring Tension Test Setup and Evaluation of Transverse Material Stress-Strain Curve of Tubular Components Using FE Analysis. <i>Journal of Testing and Evaluation</i> , 2016 , 44, 20140010	1	1
75	Experimental and Numerical Investigation of a Ring Tensile Test for Evaluation of Mechanical and Fracture Properties of Thin-Walled Fuel-Clad Tubes. <i>Journal of Testing and Evaluation</i> , 2016 , 44, 201403	34 ¹ 1	
74	Study of the Effects of Various Geometrical and Loading Parameters on the Fracture Resistance Behaviour of a Reactor-Grade Pressure Vessel Steel in the Upper Shelf as Well as DBTT Regime. <i>Journal of Testing and Evaluation</i> , 2016 , 44, 20140340	1	
73	A nonlocal damage-mechanics-based approach suitable for failure assessment and remaining life estimation of critical industrial components 2016 , 277-309		
72	Edge cracks in nickel and aluminium single crystals: A molecular dynamics study 2016 ,		1

(2013-2016)

71	Molecular dynamics simulations of crack growth behavior in Al in the presence of vacancies. <i>Computational Materials Science</i> , 2016 , 117, 518-526	3.2	24
70	An atomistic study of resistance offered by twist grain boundaries to incoming edge dislocation in FCC metals. <i>Materials Letters</i> , 2016 , 180, 11-14	3.3	7
69	Interaction of run-in edge dislocations with twist grain boundaries in Al-a molecular dynamics study. <i>Philosophical Magazine</i> , 2016 , 96, 1809-1831	1.6	8
68	A Practical Approach to Evaluate StressBtrain Behavior of Remotely Handled Pressure Tubes of Nuclear Reactors Using Ring Tension Test. <i>Transactions of the Indian Institute of Metals</i> , 2015 , 68, 299-3	10 ^{.2}	1
67	Fracture toughness evaluation of 20MnMoNi55 pressure vessel steel in the ductile to brittle transition regime: Experiment & numerical simulations. <i>Journal of Nuclear Materials</i> , 2015 , 465, 424-432	₂ 3.3	14
66	Shell Element Formulation Based Finite Element Modeling, Analysis and Experimental Validation of Incremental Sheet Forming Process 2015 ,		5
65	Effect of Tool Shape on Surface Finish of Components Formed Through Incremental Sheet Forming Process 2015 ,		4
64	Atomistic simulations of interaction of edge dislocation with twist grain boundaries in Al-effect of temperature and boundary misorientation. <i>Materials Science & Dislocation A: Structural Materials: Properties, Microstructure and Processing</i> , 2015 , 646, 25-32	5.3	20
63	Multiscale modeling of plasticity in a copper single crystal deformed at high strain rates 2015, 1,		3
62	A geometry-dependent generalized shape function for calculation of stress intensity factor for axially cracked thin-walled tubes. <i>International Journal of Advanced Structural Engineering</i> , 2014 , 6, 1-11	2	2
61	Suitability of Miniature Tensile Specimens for Estimating the Mechanical Property Data of Pressure Tubes: An Assessment. <i>Transactions of the Indian Institute of Metals</i> , 2014 , 67, 47-55	1.2	3
60	Investigation of Deformation Behavior of Ring-Tensile Specimens Machined from Pressure Tubes of Indian PHWR. <i>Transactions of the Indian Institute of Metals</i> , 2014 , 67, 167-176	1.2	7
59	Prediction of Temperature Dependence and Scatter in Fracture Toughness of Pressure Vessel Steel using Nonlocal Damage Models. <i>Procedia Engineering</i> , 2013 , 55, 780-785		
58	Estimation of transverse tensile behavior of Zircaloy pressure tubes using ring-tensile test and finite element analysis. <i>Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science</i> , 2013 , 227, 1177-1186	1.3	8
57	A Generalized Geometric Shape Function for Evaluation of SIF Values of Thin-Walled Axially-Cracked Fuel Pin Specimens. <i>Procedia Engineering</i> , 2013 , 55, 367-373		O
56	A Comparative Assessment of Local and Nonlocal Damage Models for Prediction of Fracture Behavior during Mixed-Mode Loading. <i>Procedia Engineering</i> , 2013 , 55, 493-498		5
55	On the Application of Rousselier Q Damage Model to Predict Fracture Resistance Behavior of Zircaloy Fuel Pin Specimens. <i>Procedia Engineering</i> , 2013 , 55, 710-715		3
54	Investigation of Fracture Behavior of Steam Generator Tubes of Indian PHWR using PLT Specimens. <i>Procedia Engineering</i> , 2013 , 55, 578-584		6

53	Evaluation of Creep Deformation and Mechanical Properties of Nickel-based Superalloys through FE Analysis Based on Crystal Plasticity Models. <i>Procedia Engineering</i> , 2013 , 55, 342-347		4
52	Real-Time Monitoring of High Temperature Components. <i>Procedia Engineering</i> , 2013 , 55, 421-427		3
51	Deformation Mechanisms Coupled with Phase Field and Crystal Plasticity Modeling in a High-Temperature Polycrystalline Ni-Based Superalloy 2012 , 25-33		3
50	Fracture behavior of thin-walled Zircaloy fuel clad tubes of Indian pressurized heavy water reactor. <i>International Journal of Fracture</i> , 2012 , 173, 175-188	2.3	11
49	A load-separation technique to evaluate crack growth and fracture resistance behaviour of thin-walled axially cracked tubular specimens. <i>Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science</i> , 2012 , 226, 1447-1461	1.3	8
48	Helicopter flight control using inverse optimal control and backstepping 2012,		6
47	Robust altitude control for a small helicopter by considering the ground effect compensation 2012,		6
46	Neural Network Based Model Predictive Controller for Simplified Heave Model of an Unmanned Helicopter. <i>Lecture Notes in Computer Science</i> , 2012 , 356-363	0.9	2
45	Dwell fatigue crack nucleation model based on crystal plasticity finite element simulations of polycrystalline titanium alloys. <i>Journal of the Mechanics and Physics of Solids</i> , 2011 , 59, 2157-2176	5	125
44	On critical assessment of the use of local and nonlocal damage models for prediction of ductile crack growth and crack path in various loading and boundary conditions. <i>International Journal of Solids and Structures</i> , 2011 , 48, 3365-3381	3.1	32
43	Investigation of failure behavior of two different types of Zircaloy clad tubes used as nuclear reactor fuel pins. <i>Engineering Failure Analysis</i> , 2011 , 18, 2042-2053	3.2	22
42	Evaluation of fracture toughness and its scatter in the DBTT region of different types of pressure vessel steels. <i>Engineering Failure Analysis</i> , 2011 , 18, 172-185	3.2	8
41	Prediction of JR curves of thin-walled fuel pin specimens in a PLT setup. <i>Engineering Fracture Mechanics</i> , 2011 , 78, 1029-1043	4.2	12
40	Planar trajectory tracking controller for a small-sized helicopter considering servos and delay constraints 2011 ,		2
39	Model predictive attitude control of vario unmanned helicopter 2011,		2
38	Investigation of failure behavior of ferritic ustenitic type of dissimilar steel welded joints. Engineering Failure Analysis, 2011, 18, 999-1008	3.2	56
37	A new model for the prediction of chromium depletion near grain boundaries and corresponding sensitization in austenitic stainless steels. <i>Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science</i> , 2011 , 225, 809-815	1.3	3
36	An experimental and numerical study of the fracture behaviour of tubular specimens in a pin-loading-tension set-up. <i>Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science</i> 2010 224 1-12	1.3	22

35	A computationally efficient approach for NN based system identification of a rotary wing UAV. <i>International Journal of Control, Automation and Systems</i> , 2010 , 8, 727-734	2.9	2
34	Creep damage evaluation of a power plant header using combined FEM analysis and quantitative metallography. <i>Transactions of the Indian Institute of Metals</i> , 2010 , 63, 411-416	1.2	3
33	Consumed creep life fraction assessment of critical locations of an in-service super heater outlet header under surveillance programme. <i>Transactions of the Indian Institute of Metals</i> , 2010 , 63, 423-429	1.2	2
32	A probabilistic approach to evaluate creep and fatigue damage in critical components. <i>Transactions of the Indian Institute of Metals</i> , 2010 , 63, 595-600	1.2	
31	A coupled damage model for creep. <i>Transactions of the Indian Institute of Metals</i> , 2010 , 63, 641-645	1.2	1
30	Estimation of fracture behavior of thin walled nuclear reactor fuel pins using Pin-Loading-Tension (PLT) test. <i>Nuclear Engineering and Design</i> , 2010 , 240, 4043-4050	1.8	13
29	Entwicklung eines nichtlokalen Schläigungsmodells*. <i>Materialpruefung/Materials Testing</i> , 2010 , 52, 36-4	11.9	
28	Real-time validation of a dual neural network controller for a low-cost UAV 2009 ,		2
27	An experimental and numerical investigation of fracture resistance behaviour of a dissimilar metal welded joint. <i>Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science</i> , 2009 , 223, 1507-1523	1.3	31
26	A new mesh-independent Rousselier@damage model: Finite element implementation and experimental verification. <i>International Journal of Mechanical Sciences</i> , 2009 , 51, 619-630	5.5	24
25	Analytical solution in 2D domain for nonlinear response of piezoelectric slabs under weak electric fields. <i>Communications in Nonlinear Science and Numerical Simulation</i> , 2009 , 14, 2817-2826	3.7	
24	A finite element program for on-line life assessment of critical plant components. <i>Engineering Failure Analysis</i> , 2009 , 16, 85-111	3.2	11
23	A mesh-independent GursonIIvergaardNeedleman damage model and its application in simulating ductile fracture behaviour. <i>Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science</i> , 2009 , 223, 283-292	1.3	4
22	Real-time Neural Network based Identification of a Rotary-Wing UAV dynamics for autonomous flight 2009 ,		4
21	On the non-linear response of piezoelectric slabs under weak electric fields: Experimental and analytical modelling. <i>Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science</i> , 2009 , 223, 1493-1506	1.3	
20	A mathematical model in three-dimensional piezoelectric continuum to predict non-linear responses of piezoceramic materials. <i>Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science</i> , 2008 , 222, 2251-2268	1.3	4
19	A Mesh Independent GTN Damage Model and Its Application in Simulation of Ductile Fracture Behaviour 2008 ,		2
18	Finite element formulation of a new nonlocal damage model. <i>Finite Elements in Analysis and Design</i> , 2008 , 44, 358-371	2.2	46

17	A phenomenological form of the q2 parameter in the Gurson model. <i>International Journal of Pressure Vessels and Piping</i> , 2008 , 85, 199-210	2.4	25
16	Experimental and numerical investigation of ductile-to-brittle transition in a pressure vessel steel. <i>Materials Science & Amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2008 , 496, 25-35	5.3	22
15	An analytical formulation in 3D domain for the nonlinear response of piezoelectric slabs under weak electric fields. <i>International Journal of Solids and Structures</i> , 2007 , 44, 4656-4672	3.1	10
14	Nonlinear behaviour of piezoceramics under weak electric fields. Part-II: Numerical results and validation with experiments. <i>International Journal of Solids and Structures</i> , 2006 , 43, 1437-1458	3.1	11
13	Nonlinear behaviour of piezoceramics under weak electric fields. <i>International Journal of Solids and Structures</i> , 2006 , 43, 1422-1436	3.1	14
12	Transferability of fracture parameters from specimens to component level. <i>International Journal of Pressure Vessels and Piping</i> , 2005 , 82, 386-399	2.4	26
11	A finite element model for nonlinear behaviour of piezoceramics under weak electric fields. <i>Finite Elements in Analysis and Design</i> , 2005 , 41, 1464-1480	2.2	23
10	On-Line Remaining Life Assessment of Hot Reheat Pipe Bend 2005 , 39		
9	Analytical Determination of Material JR and Fracture Toughness Transition Curves Using Micro-Mechanical Modelling 2004 , 257		
8	A study on ductile fracture initiation in the PHT piping material of an Indian PHWR using local approach. <i>International Journal of Pressure Vessels and Piping</i> , 1999 , 76, 319-330	2.4	3
7	CP-VIOLATION IN EPR-LIKE NEUTRINO OSCILLATIONS. <i>Modern Physics Letters A</i> , 1998 , 13, 533-539	1.3	
6	RANK-ONE MASS MATRIX AND PHENOMENOLOGICAL CONSTRAINTS. <i>Modern Physics Letters A</i> , 1992 , 07, 757-762	1.3	
5	Symmetric Cabibbo-Kobayashi-Maskawa matrix and quark mass matrices. <i>Physical Review D</i> , 1992 , 45, 2421-2426	4.9	4
4	17 keV nondegenerate Majorana neutrino and neutrino mixing. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 1991 , 267, 243-248	4.2	5
3	Top-quark mass and a symmetric Cabibbo-Kobayashi-Maskawa matrix. <i>Physical Review D</i> , 1991 , 44, 2860	-2863	7
2	Application of Split Hopkinson Pressure Bar Test Setup for Determination of Fracture Toughness KC at High Strain Rate Loading1		
1	Study of variation of activation energy barrier with grain boundary misorientations associated with dislocation nucleation from different grain boundaries in Ni. <i>Philosophical Magazine</i> ,1-27	1.6	