

Mohammad Ahmed Khaleel

List of Publications by Year in descending order

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108
papers

4,435
citations

117453

34
h-index

114278

63
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113
all docs

113
docs citations

113
times ranked

4228
citing authors

#	ARTICLE	IF	CITATIONS
1	Predicting failure modes and ductility of dual phase steels using plastic strain localization. International Journal of Plasticity, 2009, 25, 1888-1909.	4.1	309
2	High-Energy, High-Rate, Lithium-Sulfur Batteries: Synergetic Effect of Hollow TiO ₂ -Webbed Carbon Nanotubes and a Dual Functional Carbon-Paper Interlayer. Advanced Energy Materials, 2016, 6, 1501480.	10.2	308
3	Three-dimensional thermo-fluid electrochemical modeling of planar SOFC stacks. Journal of Power Sources, 2003, 113, 109-114.	4.0	286
4	Probing grain boundary sink strength at the nanoscale: Energetics and length scales of vacancy and interstitial absorption by grain boundaries in α -Fe. Physical Review B, 2012, 85, .	1.1	285
5	On key factors influencing ductile fractures of dual phase (DP) steels. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2009, 526, 140-149.	2.6	152
6	Effects of fusion zone size and failure mode on peak load and energy absorption of advanced high strength steel spot welds under lap shear loading conditions. Engineering Failure Analysis, 2008, 15, 356-367.	1.8	149
7	A finite element analysis modeling tool for solid oxide fuel cell development: coupled electrochemistry, thermal and flow analysis in MARC [®] . Journal of Power Sources, 2004, 130, 136-148.	4.0	145
8	Microstructure-based constitutive modeling of TRIP steel: Prediction of ductility and failure modes under different loading conditions. Acta Materialia, 2009, 57, 2592-2604.	3.8	141
9	Fatigue behaviors of self-piercing rivets joining similar and dissimilar sheet metals. International Journal of Fatigue, 2007, 29, 370-386.	2.8	115
10	Predicting plastic flow and irradiation hardening of iron single crystal with mechanism-based continuum dislocation dynamics. International Journal of Plasticity, 2014, 52, 3-17.	4.1	98
11	Constitutive modeling of deformation and damage in superplastic materials. International Journal of Plasticity, 2001, 17, 277-296.	4.1	90
12	A damage model for degradation in the electrodes of solid oxide fuel cells: Modeling the effects of sulfur and antimony in the anode. Journal of Power Sources, 2012, 210, 233-242.	4.0	90
13	On deformation twinning in a 17.5% Mn-TWIP steel: A physically based phenomenological model. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2011, 528, 1402-1408.	2.6	83
14	Influence of Martensite Mechanical Properties on Failure Mode and Ductility of Dual-Phase Steels. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2009, 40, 796-809.	1.1	82
15	Three-phase solid oxide fuel cell anode microstructure realization using two-point correlation functions. Acta Materialia, 2011, 59, 30-43.	3.8	82
16	Life prediction of coated and uncoated metallic interconnect for solid oxide fuel cell applications. Journal of Power Sources, 2009, 189, 1044-1050.	4.0	75
17	Dynamic strength evaluations for self-piercing rivets and resistance spot welds joining similar and dissimilar metals. International Journal of Impact Engineering, 2007, 34, 1668-1682.	2.4	71
18	Damage and size effect during superplastic deformation. International Journal of Plasticity, 2002, 18, 415-442.	4.1	70

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19	Predicting Young's modulus of glass/ceramic sealant for solid oxide fuel cell considering the combined effects of aging, micro-voids and self-healing. <i>Journal of Power Sources</i> , 2008, 185, 1193-1200.	4.0	68
20	Phase-field modeling of void migration and growth kinetics in materials under irradiation and temperature field. <i>Journal of Nuclear Materials</i> , 2010, 407, 119-125.	1.3	63
21	The effect of interconnect rib size on the fuel cell concentration polarization in planar SOFCs. <i>Journal of Power Sources</i> , 2003, 117, 92-97.	4.0	61
22	Experimental characterization of glass-ceramic seal properties and their constitutive implementation in solid oxide fuel cell stack models. <i>Journal of Power Sources</i> , 2009, 193, 625-631.	4.0	60
23	The modeling of a standalone solid-oxide fuel cell auxiliary power unit. <i>Journal of Power Sources</i> , 2006, 161, 938-948.	4.0	53
24	A quasi-two-dimensional electrochemistry modeling tool for planar solid oxide fuel cell stacks. <i>Journal of Power Sources</i> , 2011, 196, 3204-3222.	4.0	52
25	An Experimental Insight into the Structural and Electronic Characteristics of Strontium-Doped Titanium Dioxide Nanotube Arrays. <i>Advanced Functional Materials</i> , 2014, 24, 6783-6796.	7.8	49
26	Modeling of Glass Fracture Damage Using Continuum Damage Mechanics - Static Spherical Indentation. <i>International Journal of Damage Mechanics</i> , 2004, 13, 263-285.	2.4	48
27	Crack Growth in Solid Oxide Fuel Cell Materials: From Discrete to Continuum Damage Modeling. <i>Journal of the American Ceramic Society</i> , 2006, 89, 1358-1368.	1.9	45
28	Electronic and magnetic properties of substituted BN sheets: A density functional theory study. <i>Physical Chemistry Chemical Physics</i> , 2011, 13, 7378.	1.3	45
29	Modeling of Stone-impact Resistance of Monolithic Glass Ply Using Continuum Damage Mechanics. <i>International Journal of Damage Mechanics</i> , 2005, 14, 165-178.	2.4	43
30	Influence of various material design parameters on deformation behaviors of TRIP steels. <i>Computational Materials Science</i> , 2010, 50, 720-730.	1.4	43
31	Three-dimensional reconstruction and homogenization of heterogeneous materials using statistical correlation functions and FEM. <i>Computational Materials Science</i> , 2012, 51, 372-379.	1.4	41
32	A parametric-experimental study of void growth in superplastic deformation. <i>International Journal of Plasticity</i> , 2001, 17, 297-315.	4.1	39
33	Strength estimation of self-piercing rivets using lower bound limit load analysis. <i>Science and Technology of Welding and Joining</i> , 2005, 10, 624-635.	1.5	37
34	The displacement, and strain-stress fields of a general circular Volterra dislocation loop. <i>International Journal of Engineering Science</i> , 2000, 38, 251-266.	2.7	36
35	A mechanistic approach to damage in short-fiber composites based on micromechanical and continuum damage mechanics descriptions. <i>Composites Science and Technology</i> , 2004, 64, 607-617.	3.8	36
36	Fabrication of gradient porous LSM cathode by optimizing deposition parameters in ultrasonic spray pyrolysis. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , 2008, 153, 1-9.	1.7	36

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37	Deformation modeling of superplastic AA-5083. International Journal of Plasticity, 1998, 14, 1133-1154.	4.1	34
38	Quantitative prediction of effective conductivity in anisotropic heterogeneous media using two-point correlation functions. Computational Materials Science, 2006, 38, 45-50.	1.4	34
39	Study of geometric stability and structural integrity of self-healing glass seal system used in solid oxide fuel cells. Journal of Power Sources, 2011, 196, 1750-1761.	4.0	33
40	A numerical process control method for circular-tube hydroforming prediction. International Journal of Plasticity, 2004, 20, 1111-1137.	4.1	31
41	Modeling of electrochemistry and steam methane reforming performance for simulating pressurized solid oxide fuel cell stacks. Journal of Power Sources, 2010, 195, 6637-6644.	4.0	30
42	Mechanical properties of solid oxide fuel cell glass-ceramic seal at high temperatures. Journal of Power Sources, 2011, 196, 5599-5603.	4.0	30
43	Influence of Manufacturing Processes and Microstructures on the Performance and Manufacturability of Advanced High Strength Steels. Journal of Engineering Materials and Technology, Transactions of the ASME, 2009, 131, .	0.8	29
44	Computer simulations of interstitial loop growth kinetics in irradiated bcc Fe. Journal of Nuclear Materials, 2012, 427, 259-267.	1.3	29
45	Determination of interfacial adhesion strength between oxide scale and substrate for metallic SOFC interconnects. Journal of Power Sources, 2008, 176, 167-174.	4.0	28
46	Creep properties of solid oxide fuel cell glass ceramic seal G18. Journal of Power Sources, 2010, 195, 3631-3635.	4.0	26
47	Comparison of reconstructed spatial microstructure images using different statistical descriptors. Computational Materials Science, 2012, 51, 437-444.	1.4	24
48	Numerical analysis of the influence of scale effects and microstructure on hydrogen diffusion in polycrystalline aggregates. Computational Materials Science, 2013, 71, 1-9.	1.4	24
49	Effects of different design parameters on the stone-impact resistance of automotive windshields. Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering, 2005, 219, 1059-1067.	1.1	23
50	Comparison of Different Upscaling Methods for Predicting Thermal Conductivity of Complex Heterogeneous Materials System: Application on Nuclear Waste Forms. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2013, 44, 61-69.	1.1	23
51	Microstructure, property and processing relation in gradient porous cathode of solid oxide fuel cells using statistical continuum mechanics. Journal of Power Sources, 2011, 196, 6325-6331.	4.0	22
52	Global failure criteria for positive/electrolyte/negative structure of planar solid oxide fuel cell. Journal of Power Sources, 2009, 192, 486-493.	4.0	20
53	Effect of nickel phosphorus interactions on structural integrity of anode-supported solid oxide fuel cells. Journal of Power Sources, 2010, 195, 7140-7145.	4.0	20
54	Modeling of deformation behavior and texture evolution in magnesium alloy using the intermediate $\bar{\tau}$ -model. International Journal of Plasticity, 2014, 52, 77-94.	4.1	20

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55	Experimental Study of the Aging and Self-Healing of the Glass/Ceramic Sealant Used in SOFCs. International Journal of Applied Ceramic Technology, 2010, 7, 22-29.	1.1	19
56	Representation of correlation statistics functions in heterogeneous materials using layered fast spherical harmonics expansion. Computational Materials Science, 2010, 48, 133-139.	1.4	18
57	Effects of alternative inspection strategies on piping reliability. Nuclear Engineering and Design, 2000, 197, 115-140.	0.8	17
58	Effect of Creep of Ferritic Interconnect on Long-Term Performance of Solid Oxide Fuel Cell Stacks. Fuel Cells, 2010, 10, 703-717.	1.5	17
59	Modeling of irradiation hardening of polycrystalline materials. Computational Materials Science, 2011, 50, 2496-2501.	1.4	17
60	Yield asymmetry design of magnesium alloys by integrated computational materials engineering. Computational Materials Science, 2013, 79, 448-455.	1.4	17
61	Microscopic analysis of crack propagation for multiple cracks, inclusions and voids. Theoretical and Applied Fracture Mechanics, 2001, 36, 147-164.	2.1	16
62	Microstructure Characterization of Dislocation Wall Structure in Aluminum Using Transmission Electron Microscopy. Journal of Engineering Materials and Technology, Transactions of the ASME, 2002, 124, 297-301.	0.8	16
63	A general approach to develop reduced order models for simulation of solid oxide fuel cell stacks. Journal of Power Sources, 2013, 232, 139-151.	4.0	16
64	Three-Dimensional Reconstruction and Microstructure Modeling of Porosity-Graded Cathode Using Focused Ion Beam and Homogenization Techniques. Fuel Cells, 2014, 14, 91-95.	1.5	16
65	Pore-scale modeling of the reactive transport of chromium in the cathode of a solid oxide fuel cell. Journal of Power Sources, 2011, 196, 287-300.	4.0	15
66	A mechanistic-based healing model for self-healing glass seals used in solid oxide fuel cells. Journal of Power Sources, 2012, 218, 445-454.	4.0	15
67	Synthesis and Growth Mechanism of Thin-Film TiO ₂ Nanotube Arrays on Focused-Ion-Beam Micropatterned 3D Isolated Regions of Titanium on Silicon. ACS Applied Materials & Interfaces, 2013, 5, 9026-9033.	4.0	15
68	Creep Behavior of Glass/Ceramic Sealant and its Effect on Long-Term Performance of Solid Oxide Fuel Cells. International Journal of Applied Ceramic Technology, 2011, 8, 49-59.	1.1	14
69	Anisotropic Yield Locus Evolution During Cold Pilgering of Titanium Alloy Tubing. Journal of Engineering Materials and Technology, Transactions of the ASME, 2002, 124, 125-134.	0.8	13
70	Measurement of Biaxial Strength of New vs. Used Windshields. , 0, , .		12
71	Electronic and magnetic properties of C-adsorbed graphene: a first-principles study. Physical Chemistry Chemical Physics, 2011, 13, 16574.	1.3	12
72	Phase-field modeling of void evolution and swelling in materials under irradiation. Science China: Physics, Mechanics and Astronomy, 2011, 54, 856-865.	2.0	12

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73	Evaluation of environmental effects on fatigue life of piping. Nuclear Engineering and Design, 2001, 208, 143-165.	0.8	11
74	Simulation of cooling and solidification of three-dimensional bulk borosilicate glass: effect of structural relaxations. Mechanics of Time-Dependent Materials, 2014, 18, 81-96.	2.3	11
75	Statistical continuum mechanics analysis of effective elastic properties in solid oxide fuel cell glass-ceramic seal material. Journal of Power Sources, 2010, 195, 5726-5730.	4.0	10
76	Effect of substrate thickness on oxide scale spallation for solid oxide fuel cells. Corrosion Science, 2011, 53, 2406-2412.	3.0	10
77	Functionalized graphene nanoroads for quantum well device. Applied Physics Letters, 2011, 98, .	1.5	10
78	Ab initio study of defect properties in YPO ₄ . Computational Materials Science, 2012, 54, 170-175.	1.4	10
79	A model for predicting vessel failure probabilities including the effects of service inspection and flaw sizing errors. Nuclear Engineering and Design, 2000, 200, 353-369.	0.8	9
80	Strain rate effects on the mechanical response of polypropylene-based composites deformed at small strains. Polymer Science - Series A, 2008, 50, 690-697.	0.4	9
81	Migration of Cr-vacancy clusters and interstitial Cr in Fe using the dimer method. Physical Review B, 2010, 81, .	1.1	9
82	Predicting Thermal Conductivity Evolution of Polycrystalline Materials Under Irradiation Using Multiscale Approach. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2012, 43, 1060-1069.	1.1	9
83	Computational Modeling of Transport Limitations in Li-Air Batteries. ECS Transactions, 2013, 45, 123-136.	0.3	9
84	Effect of through-wall stress gradients on piping failure probabilities. Nuclear Engineering and Design, 2000, 197, 89-106.	0.8	8
85	Prediction of the effective coefficient of thermal expansion of heterogeneous media using two-point correlation functions. Journal of Power Sources, 2011, 196, 3846-3850.	4.0	8
86	Analysis of Tube Free Hydroforming Using an Inverse Approach With FLD-Based Adjustment of Process Parameters. Journal of Engineering Materials and Technology, Transactions of the ASME, 2003, 125, 133-140.	0.8	7
87	Analysis of Percent On-Cell Reformation of Methane in SOFC Stacks and the Effects on Thermal, Electrical, and Mechanical Performance. ECS Transactions, 2007, 5, 473-478.	0.3	7
88	Prediction of crack propagation paths in the unit cell of SOFC stacks. International Journal of Mechanics and Materials in Design, 2009, 5, 217-230.	1.7	6
89	Determination of temperature in glass with a fluorescence method. International Journal of Heat and Mass Transfer, 2001, 44, 4027-4034.	2.5	5
90	Effects of Oxide Thickness on Scale and Interface Stresses under Isothermal Cooling and Micro-Indentation for Ferritic Stainless Steel Interconnect. ECS Transactions, 2007, 5, 357-368.	0.3	5

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91	Mechanism-based representative volume elements (RVEs) for predicting property degradations in multiphase materials. <i>Computational Materials Science</i> , 2013, 68, 152-159.	1.4	5
92	A PSO algorithm for the calculation of the series and shunt resistances of the PV panel one-diode model. , 2014, , .		5
93	Effect of Glazing System Parameters on Glazing System Contribution to a Lightweight Vehicle's Torsional Stiffness and Weight. , 2000, , .		4
94	Effect of Temperature on Biaxial Strength of Automotive Windshields. , 2000, , .		3
95	Effect of Windshield Design on High Speed Impact Resistance. , 0, , .		3
96	Applicability of Micromechanics Model Based on Actual Microstructure for Failure Prediction of DP Steels. <i>SAE International Journal of Materials and Manufacturing</i> , 2009, 2, 241-249.	0.3	3
97	Vacancies in fully hydrogenated boron nitride layer: implications for functional nanodevices. <i>Physica Status Solidi - Rapid Research Letters</i> , 2012, 6, 105-107.	1.2	2
98	Probabilistic-Based Design Methodology for Solid Oxide Fuel Cell Stacks. <i>Journal of Fuel Cell Science and Technology</i> , 2009, 6, .	0.8	1
99	Modeling the Electrochemistry of an SOFC through the Electrodes and Electrolyte. <i>ECS Transactions</i> , 2011, 35, 841-851.	0.3	1
100	The Need for Nano-Scale Modeling in Solid Oxide Fuel Cells. <i>Journal of Nanoscience and Nanotechnology</i> , 2012, 12, 6758-6768.	0.9	1
101	Simulation of Solidification, Relaxation and Long-Term Behavior of a Borosilicate Glass. , 2015, , 511-519.		1
102	Stress Measurements in Glass Using the Method of Thermal Gratings. , 2002, , .		0
103	Global Failure Criteria for SOFC Positive/Electrolyte/Negative (PEN) Structure. , 2007, , .		0
104	Fabrication and optimization of properties of polymer laminated nanoreinforced automobile glasses: Experiments and modeling. <i>Polymer Science - Series A</i> , 2008, 50, 568-572.	0.4	0
105	Characterization of the Fracture Toughness of TRIP 800 Sheet Steels Using Microstructure-Based Finite Element Analysis. , 0, , .		0
106	Predicting Ductility and Failure Modes of TRIP Steels under Different Loading Conditions. , 2010, , .		0
107	Bridging Microstructure, Properties, and Processing of Polymer Based Advanced Materials. <i>Journal of Engineering Materials and Technology, Transactions of the ASME</i> , 2012, 134, .	0.8	0
108	Molecular Dynamics Simulation of Thermodynamic Properties in Uranium Dioxide. <i>Nuclear Science and Engineering</i> , 2014, 176, 360-369.	0.5	0