

Xin Sun

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129
papers

2,930
citations

30
h-index

49
g-index

139
ext. papers

3,291
ext. citations

4.3
avg, IF

5.2
L-index

#	Paper	IF	Citations
129	Tensile strain switched ferromagnetism in layered NbS ₂ and NbSe ₂ . <i>ACS Nano</i> , 2012 , 6, 9727-36	16.7	265
128	Macrophages in spinal cord injury: phenotypic and functional change from exposure to myelin debris. <i>Glia</i> , 2015 , 63, 635-51	9	134
127	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. <i>Engineering Failure Analysis</i> , 2008 , 15, 356-367	3.27	127
126	Microstructure and thermal shock behavior of ZrB ₂ /SiC/graphite composite. <i>Materials Chemistry and Physics</i> , 2009 , 113, 338-341	4.4	96
125	Effect of graphite flake on the mechanical properties of hot pressed ZrB ₂ /SiC ceramics. <i>Materials Letters</i> , 2008 , 62, 4360-4362	3.3	94
124	Fatigue behaviors of self-piercing rivets joining similar and dissimilar sheet metals. <i>International Journal of Fatigue</i> , 2007 , 29, 370-386	5	91
123	Predicting plastic flow and irradiation hardening of iron single crystal with mechanism-based continuum dislocation dynamics. <i>International Journal of Plasticity</i> , 2014 , 52, 3-17	7.6	82
122	Filtered sub-grid constitutive models for fluidized gas-particle flows constructed from 3-D simulations. <i>Chemical Engineering Science</i> , 2016 , 152, 443-456	4.4	80
121	Dynamic Failure of Borosilicate Glass Under Compression/Shear Loading Experiments. <i>Journal of the American Ceramic Society</i> , 2007 , 90, 2556-2562	3.8	69
120	Determination of sulfonamides in soil samples based on alumina-coated magnetite nanoparticles as adsorbents. <i>Analytica Chimica Acta</i> , 2010 , 665, 185-92	6.6	68
119	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	8.9	64
118	Dynamic strength evaluations for self-piercing rivets and resistance spot welds joining similar and dissimilar metals. <i>International Journal of Impact Engineering</i> , 2007 , 34, 1668-1682	4	60
117	Carbon Capture Simulation Initiative: a case study in multiscale modeling and new challenges. <i>Annual Review of Chemical and Biomolecular Engineering</i> , 2014 , 5, 301-23	8.9	56
116	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	3.3	51
115	Microstructure, mechanical properties and thermal shock resistance of zirconium diboride containing silicon carbide ceramic toughened by carbon black. <i>Materials Chemistry and Physics</i> , 2010 , 122, 470-473	4.4	50
114	Performance Optimization of Self-Piercing Rivets Through Analytical Rivet Strength Estimation. <i>Journal of Manufacturing Processes</i> , 2005 , 7, 83-93	5	48
113	Effects of Intercritical Annealing Temperature on Mechanical Properties of Fe-7.9Mn-0.14Si-0.05Al-0.07C Steel. <i>Materials</i> , 2014 , 7, 7891-7906	3.5	44

112	Synthesis of ordered mesoporous boron-containing carbon films and their corrosion behavior in simulated proton exchange membrane fuel cells environment. <i>Journal of Power Sources</i> , 2012 , 212, 1-12	8.9	43
111	A quasi-two-dimensional electrochemistry modeling tool for planar solid oxide fuel cell stacks. <i>Journal of Power Sources</i> , 2011 , 196, 3204-3222	8.9	43
110	Modeling of Glass Fracture Damage Using Continuum Damage Mechanics - Static Spherical Indentation. <i>International Journal of Damage Mechanics</i> , 2004 , 13, 263-285	3	43
109	Quasi-static and dynamic responses of advanced high strength steels: Experiments and modeling. <i>International Journal of Plasticity</i> , 2012 , 30-31, 1-17	7.6	41
108	Effect of surface oxidation on thermal shock resistance of ZrB ₂ /SiC composite. <i>International Journal of Refractory Metals and Hard Materials</i> , 2010 , 28, 280-285	4.1	41
107	Structural and electrochemical characterization of ordered mesoporous carbon-reduced graphene oxide nanocomposites. <i>Journal of Materials Chemistry</i> , 2012 , 22, 10900		38
106	Phase-field simulations of intragranular fission gas bubble evolution in UO ₂ under post-irradiation thermal annealing. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2013 , 303, 62-67	1.2	37
105	Microstructure and mechanical properties of ZrB ₂ /Nb composite. <i>International Journal of Refractory Metals and Hard Materials</i> , 2010 , 28, 472-474	4.1	37
104	Three-dimensional simulation of rivulet and film flows over an inclined plate: Effects of solvent properties and contact angle. <i>Chemical Engineering Science</i> , 2016 , 142, 244-257	4.4	36
103	A phase-field model for deformation twinning. <i>Philosophical Magazine Letters</i> , 2011 , 91, 110-121	1	36
102	Modeling of Stone-impact Resistance of Monolithic Glass Ply Using Continuum Damage Mechanics. <i>International Journal of Damage Mechanics</i> , 2005 , 14, 165-178	3	34
101	Verification of sub-grid filtered drag models for gas-particle fluidized beds with immersed cylinder arrays. <i>Chemical Engineering Science</i> , 2014 , 114, 144-154	4.4	32
100	Modeling and characterization of dynamic failure of borosilicate glass under compression/shear loading. <i>International Journal of Impact Engineering</i> , 2009 , 36, 226-234	4	32
99	Nanoindentation study of electrodeposited Ag thin coating: An inverse calculation of anisotropic elastic-plastic properties. <i>Surface and Coatings Technology</i> , 2017 , 310, 43-50	4.4	30
98	Determining Individual Phase Flow Properties in a Quench and Partitioning Steel with In Situ High-Energy X-Ray Diffraction and Multiphase Elasto-Plastic Self-Consistent Method. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2016 , 47, 5733-5749	2.3	27
97	Deformation mode and strain path dependence of martensite phase transformation in a medium manganese TRIP steel. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2018 , 711, 611-623	5.3	26
96	Sub-grid drag models for horizontal cylinder arrays immersed in gas-particle multiphase flows. <i>Chemical Engineering Science</i> , 2013 , 104, 399-412	4.4	25
95	Creep properties of solid oxide fuel cell glass/ceramic seal G18. <i>Journal of Power Sources</i> , 2010 , 195, 3631-3635	8.9	24

94	Novel synthesis of reduced graphene oxide-ordered mesoporous carbon composites and their application in electrocatalysis. <i>Electrochimica Acta</i> , 2013 , 90, 53-62	6.7	22
93	In Situ Local Measurement of Austenite Mechanical Stability and Transformation Behavior in Third-Generation Advanced High-Strength Steels. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2018 , 49, 2583-2596	2.3	22
92	Computer simulations of interstitial loop growth kinetics in irradiated bcc Fe. <i>Journal of Nuclear Materials</i> , 2012 , 427, 259-267	3.3	21
91	Microstructure, property and processing relation in gradient porous cathode of solid oxide fuel cells using statistical continuum mechanics. <i>Journal of Power Sources</i> , 2011 , 196, 6325-6331	8.9	21
90	A 2.5D computational method to simulate cylindrical fluidized beds. <i>Chemical Engineering Science</i> , 2015 , 123, 236-246	4.4	19
89	Bayesian Treed Multivariate Gaussian Process With Adaptive Design: Application to a Carbon Capture Unit. <i>Technometrics</i> , 2014 , 56, 145-158	1.4	19
88	Hydrogenated Graphene Nanoflakes: Semiconductor to Half-Metal Transition and Remarkable Large Magnetism. <i>Journal of Physical Chemistry C</i> , 2012 , 116, 5531-5537	3.8	19
87	Synthesis of mesoporous carbon-silica-polyaniline and nitrogen-containing carbon-silica films and their corrosion behavior in simulated proton exchange membrane fuel cells environment. <i>Journal of Power Sources</i> , 2011 , 196, 9552-9560	8.9	19
86	3D printed structures for optimized carbon capture technology in packed bed columns. <i>Separation Science and Technology</i> , 2019 , 54, 2047-2058	2.5	18
85	Comparison of Different Upscaling Methods for Predicting Thermal Conductivity of Complex Heterogeneous Materials System: Application on Nuclear Waste Forms. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2013 , 44, 61-69	2.3	18
84	Formation mechanism for the nanoscale amorphous interface in pulse-welded Al/Fe bimetallic systems. <i>Applied Physics Letters</i> , 2016 , 108, 201606	3.4	18
83	Determination of carbon distributions in quenched and partitioned microstructures using nanoscale secondary ion mass spectroscopy. <i>Scripta Materialia</i> , 2015 , 104, 79-82	5.6	17
82	Effect of nickel-phosphorus interactions on structural integrity of anode-supported solid oxide fuel cells. <i>Journal of Power Sources</i> , 2010 , 195, 7140-7145	8.9	17
81	Hierarchical calibration and validation of computational fluid dynamics models for solid sorbent-based carbon capture. <i>Powder Technology</i> , 2016 , 288, 388-406	5.2	16
80	A discrete element method-based approach to predict the breakage of coal. <i>Advanced Powder Technology</i> , 2017 , 28, 2665-2677	4.6	16
79	A generalized kinetic model for heterogeneous gas-solid reactions. <i>Journal of Chemical Physics</i> , 2012 , 137, 074702	3.9	16
78	Experimental Study of the Aging and Self-Healing of the Glass/Ceramic Sealant Used in SOFCs. <i>International Journal of Applied Ceramic Technology</i> , 2010 , 7, 22-29	2	16
77	Representation of correlation statistics functions in heterogeneous materials using layered fast spherical harmonics expansion. <i>Computational Materials Science</i> , 2010 , 48, 133-139	3.2	16

76	Shear Band Initiation of Brittle Damage Materials. <i>International Journal of Damage Mechanics</i> , 1996 , 5, 403-421	3	16
75	A continuum thermo-inelastic model for damage and healing in self-healing glass materials. <i>International Journal of Plasticity</i> , 2014 , 62, 1-16	7.6	15
74	Myelin basic protein induces neuron-specific toxicity by directly damaging the neuronal plasma membrane. <i>PLoS ONE</i> , 2014 , 9, e108646	3.7	15
73	Towards an integrated experimental and computational framework for large-scale metal additive manufacturing. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2019 , 761, 138057	5.3	14
72	Additively manufactured packed bed device for process intensification of CO2 absorption and other chemical processes. <i>Chemical Engineering Journal</i> , 2020 , 388, 124092	14.7	14
71	Non-classical nuclei and growth kinetics of Cr precipitates in FeCr alloys during ageing. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2014 , 22, 025002	2	14
70	Hydrodynamics of the rivulet flow over corrugated sheet used in structured packings. <i>International Journal of Greenhouse Gas Control</i> , 2017 , 64, 87-98	4.2	14
69	Multiscale Modeling of Inclusions and Precipitation Hardening in Metal Matrix Composites: Application to Advanced High-Strength Steels. <i>Journal of Nanomechanics & Micromechanics</i> , 2013 , 3, 24-33		14
68	Modeling of irradiation hardening of polycrystalline materials. <i>Computational Materials Science</i> , 2011 , 50, 2496-2501	3.2	14
67	Effects of platinum on photo-assisted electrocatalytic activity of fringe-shaped highly ordered mesoporous titanium dioxide film. <i>Journal of Power Sources</i> , 2012 , 208, 58-66	8.9	12
66	Multiphase flow simulations of a moving fluidized bed regenerator in a carbon capture unit. <i>Powder Technology</i> , 2014 , 265, 35-46	5.2	12
65	A mechanistic-based healing model for self-healing glass seals used in solid oxide fuel cells. <i>Journal of Power Sources</i> , 2012 , 218, 445-454	8.9	12
64	Breakup of a liquid rivulet falling over an inclined plate: Identification of a critical Weber number. <i>Physics of Fluids</i> , 2017 , 29, 052101	4.4	11
63	An engineering prototype of Hadamard transform spectral imager based on Digital Micro-mirror Device. <i>Optics and Laser Technology</i> , 2012 , 44, 210-217	4.2	11
62	Creep Behavior of Glass/Ceramic Sealant and its Effect on Long-Term Performance of Solid Oxide Fuel Cells. <i>International Journal of Applied Ceramic Technology</i> , 2011 , 8, 49-59	2	11
61	Application of the phase-field method in predicting gas bubble microstructure evolution in nuclear fuels. <i>International Journal of Materials Research</i> , 2010 , 101, 515-522	0.5	11
60	Quantifying Grain Level Stress-Strain Behavior for AM40 via Instrumented Microindentation. <i>MRS Advances</i> , 2016 , 1, 761-772	0.7	11
59	Effects of Bi Addition on the Microstructure and Mechanical Properties of Nanocrystalline Ag Coatings. <i>Materials</i> , 2017 , 10,	3.5	10

58	Mechanistic based DEM simulation of particle attrition in a jet cup. <i>Powder Technology</i> , 2014 , 253, 385-392	3.2	10
57	Study of magnetic field to promote oxygen transfer and its application in zinc-air fuel cells. <i>Electrochimica Acta</i> , 2013 , 90, 44-52	6.7	10
56	Predicting the performance uncertainty of a 1-MW pilot-scale carbon capture system after hierarchical laboratory-scale calibration and validation. <i>Powder Technology</i> , 2017 , 312, 58-66	5.2	9
55	Evolution kinetics of interstitial loops in irradiated materials: a phase-field model. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2012 , 20, 015011	2	9
54	Effects of Pore Distributions on Ductility of Thin-Walled High Pressure Die-Cast Magnesium 2013 ,		9
53	Effects of Failure Modes on Strength of Aluminum Resistance Spot Welds 2005 ,		9
52	Uniformly dispersed pt nanoparticles as fuel-cell catalyst supported onto ordered mesoporous carbon-silica composites. <i>Electrochimica Acta</i> , 2012 , 63, 318-322	6.7	8
51	Predicting Thermal Conductivity Evolution of Polycrystalline Materials Under Irradiation Using Multiscale Approach. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2012 , 43, 1060-1069	2.3	8
50	Particle-scale CO ₂ adsorption kinetics modeling considering three reaction mechanisms. <i>International Journal of Greenhouse Gas Control</i> , 2013 , 17, 388-396	4.2	8
49	Effects of heat exchanger tubes on hydrodynamics and CO ₂ capture of a sorbent-based fluidized bed reactor. <i>Powder Technology</i> , 2017 , 322, 202-213	5.2	8
48	Phase-field modeling of void evolution and swelling in materials under irradiation. <i>Science China: Physics, Mechanics and Astronomy</i> , 2011 , 54, 856-865	3.6	8
47	Process intensification of CO ₂ absorption using a 3D printed intensified packing device. <i>AIChE Journal</i> , 2020 , 66, e16285	3.6	7
46	Mathematical model for spreading dynamics of social network worms. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2012 , 2012, P04009	1.9	7
45	Interfacial Shear Strength of Oxide Scale and SS 441 Substrate. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2011 , 42, 1222-1228	2.3	7
44	Materials Design of All-Cellulose Composite Using Microstructure Based Finite Element Analysis. <i>Journal of Engineering Materials and Technology, Transactions of the ASME</i> , 2012 , 134,	1.8	7
43	Formation mechanism of micro-arc oxidation coatings formed on ZrB ₂ /SiC ceramics. <i>Materials Chemistry and Physics</i> , 2010 , 120, 417-420	4.4	7
42	Modeling of Friction Stir Welding (FSW) Process with Smooth Particle Hydrodynamics (SPH) 2006 ,		7
41	Hierarchical calibration and validation framework of bench-scale computational fluid dynamics simulations for solvent-based carbon capture. Part 2: Chemical absorption across a wetted wall column 2018 , 8, 150-160		7

40	Hierarchical calibration and validation for modeling bench-scale solvent-based carbon capture. Part 1: Non-reactive physical mass transfer across the wetted wall column 2017 , 7, 706-720		6
39	Modeling electrokinetics in ionic liquids. <i>Electrophoresis</i> , 2017 , 38, 1693-1705	3.6	6
38	In situ neutron diffraction in quantifying deformation behaviors of nano-sized carbide strengthened UFG ferritic steel. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2018 , 726, 298-308	5.3	6
37	Integrated Computational Materials Engineering (ICME) for Third Generation Advanced High-Strength Steel Development 2015 ,		6
36	Process intensification of CO2 capture by low-aqueous solvent. <i>Chemical Engineering Journal</i> , 2021 , 426, 131240	14.7	6
35	Ultrasonic welding of AZ31B magnesium alloy. <i>MRS Bulletin</i> , 2019 , 44, 630-636	3.2	5
34	Identify structural flaw location and type with an inverse algorithm of resonance inspection. <i>JVC/Journal of Vibration and Control</i> , 2015 , 21, 2685-2696	2	5
33	Mechanism-based representative volume elements (RVEs) for predicting property degradations in multiphase materials. <i>Computational Materials Science</i> , 2013 , 68, 152-159	3.2	5
32	An Intelligent Model for Software Project Risk Prediction 2009 ,		5
31	Effects of Oxide Thickness on Scale and Interface Stresses under Isothermal Cooling and Micro-Indentation for Ferritic Stainless Steel Interconnect. <i>ECS Transactions</i> , 2007 , 5, 357-368	1	5
30	Effects of Fusion Zone Size on Failure Modes and Performance of Advanced High Strength Steel Spot Welds 2006 ,		5
29	A Framework for Modeling Spot Welds in Finite Element Analysis of Auto-Body Structures 1999 ,		5
28	Predicting Stress vs. Strain Behaviors of Thin-Walled High Pressure Die Cast Magnesium Alloy with Actual Pore Distribution. <i>SAE International Journal of Materials and Manufacturing</i> , 2016 , 9, 361-367	1	5
27	Device-scale CFD modeling of gas-liquid multiphase flow and amine absorption for CO2 capture 2018 , 8, 603-620		4
26	Integrated Computational Materials Engineering (ICME) Multi-Scale Model Development for Advanced High Strength Steels 2017 ,		4
25	Development of an Inverse Algorithm for Resonance Inspection. <i>Journal of Vibration and Acoustics, Transactions of the ASME</i> , 2012 , 134,	1.6	4
24	Dynamic response performance of proton exchange membrane fuel cell stack with Pt/CRuO2-xH2O electrode. <i>Journal of Power Sources</i> , 2013 , 242, 99-105	8.9	4
23	Analysis of Percent On-Cell Reforming of Methane in SOFC Stacks and the Effects on Thermal, Electrical, and Mechanical Performance. <i>ECS Transactions</i> , 2007 , 5, 473-478	1	4

22	Modeling of Resistance Spot Welds:From Process to Performance 1999 ,		4
21	A mechanism-based quantitative multi-scale framework for investigating irradiation hardening of tungsten at low temperature. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020 , 774, 138941	5.3	3
20	An integrated two-dimensional modeling method for predicting ductility of thin-walled die cast magnesium. <i>International Journal of Fracture</i> , 2019 , 219, 203-220	2.3	3
19	Effects of Constituent Properties on Performance Improvement of a Quenching and Partitioning Steel 2014 ,		3
18	Modeling and Characterization of Dynamic Failure of Soda-lime Glass Under High-Speed Impact. <i>International Journal of Damage Mechanics</i> , 2012 , 21, 577-598	3	3
17	Relationship between Material Properties and Local Formability of DP980 Steels 2012 ,		3
16	Migration of defect clusters and xenon-vacancy clusters in uranium dioxide. <i>International Journal of Modern Physics B</i> , 2014 , 28, 1450120	1.1	2
15	Investigation of Forming Performance of Laminated Steel Sheets Using Finite Element Analyses. <i>AIP Conference Proceedings</i> , 2007 ,	0	2
14	Surface engineering to enhance heat generation and joint strength in dissimilar materials AZ31 and DP590 ultrasonic welding. <i>International Journal of Advanced Manufacturing Technology</i> , 2020 , 111, 3095-3109	3.2	2
13	Effects of Forming Induced Phase Transformation on Crushing Behavior of TRIP Steel 2010 ,		1
12	Multi-Phase CFD Modeling of a Solid Sorbent Carbon Capture System 2012 ,		1
11	Effect of Fuel Impurity on Structural Integrity of Ni-YSZ Anode of SOFCs. <i>Ceramic Transactions</i> ,87-100	0.1	1
10	Modeling Deformation and Failure in AlSi-Polyester Abradable Sealcoating Material Using Microstructure-Based Finite Element Simulation. <i>Materials and Design</i> , 2022 , 110791	8.1	0
9	A Discrete Element Model of Armor Glass Fragmentation and Comminution Failure Under Compression. <i>International Journal of Applied Glass Science</i> , 2016 , 7, 503-512	1.8	
8	Molecular Dynamics Simulation of Thermodynamic Properties in Uranium Dioxide. <i>Nuclear Science and Engineering</i> , 2014 , 176, 360-369	1.2	
7	Modeling of TWIP Steel Tensile Behavior with Crystal Plasticity Finite Element Method. <i>Advanced Materials Research</i> , 2014 , 926-930, 162-165	0.5	
6	Loading Path Dependence of Forming Limit Diagram of a TRIP800 Steel. <i>SAE International Journal of Materials and Manufacturing</i> , 2011 , 4, 75-83	1	
5	Multiscale Modeling of Irradiation Induced Hardening in Iron Alloys. <i>Materials Research Society Symposia Proceedings</i> , 2012 , 1444, 43		

- 4 Ambiguity-Function-Based Methods for Near-Field Source Localization. *Applied Mechanics and Materials*, **2012**, 160, 395-399 0.3
- 3 Effect of Surface Condition on Spallation Behavior of Oxide Scale on SS 441 Substrate used in SOFC. *Ceramic Transactions*, 81-86 0.1
- 2 Energetics and Length Scales of Point Defect and Element Segregation to Grain Boundaries in Fe727-736
- 1 Examining deformation localization of irradiated tungsten under uniaxial compression with crystal plasticity. *International Journal of Refractory Metals and Hard Materials*, **2021**, 100, 105637 4.1