Binhan Sun

List of Publications by Year
in descending order

44 papers	1,780 citations	304368 22 h-index	276539 41 g-index
44 all docs	44 docs citations	44 times ranked	985 citing authors

#	Article	IF	Citations
1	Chemical boundary engineering: A new route toward lean, ultrastrong yet ductile steels. Science Advances, 2020, 6, eaay1430.	4.7	120
2	Current Challenges and Opportunities in Microstructure-Related Properties of Advanced High-Strength Steels. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2020, 51, 5517-5586.	1.1	115
3	Discontinuous strain-induced martensite transformation related to the Portevin-Le Chatelier effect in a medium manganese steel. Scripta Materialia, 2017, 133, 9-13.	2.6	112
4	Hydrogen trapping and embrittlement in high-strength Al alloys. Nature, 2022, 602, 437-441.	13.7	109
5	Revealing fracture mechanisms of medium manganese steels with and without delta-ferrite. Acta Materialia, 2019, 164, 683-696.	3.8	108
6	The influence of silicon additions on the deformation behavior of austenite-ferrite duplex medium manganese steels. Acta Materialia, 2018, 148, 249-262.	3.8	103
7	Macroscopic to nanoscopic in situ investigation on yielding mechanisms in ultrafine grained medium Mn steels: Role of the austenite-ferrite interface. Acta Materialia, 2019, 178, 10-25.	3.8	95
8	Microstructural characteristics and tensile behavior of medium manganese steels with different manganese additions. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2018, 729, 496-507.	2.6	88
9	Chemical heterogeneity enhances hydrogen resistance in high-strength steels. Nature Materials, 2021, 20, 1629-1634.	13.3	83
10	Dependence of hydrogen embrittlement mechanisms on microstructure-driven hydrogen distribution in medium Mn steels. Acta Materialia, 2020, 183, 313-328.	3.8	78
11	Phase boundary segregation-induced strengthening and discontinuous yielding in ultrafine-grained duplex medium-Mn steels. Acta Materialia, 2020, 200, 389-403.	3.8	70
12	Solute hydrogen and deuterium observed at the near atomic scale in high-strength steel. Acta Materialia, 2020, 188, 108-120.	3.8	64
13	Investigation of pre-existing particles in Al 5083 alloys. Journal of Alloys and Compounds, 2018, 740, 461-469.	2.8	61
14	Current Challenges and Opportunities Toward Understanding Hydrogen Embrittlement Mechanisms in Advanced High-Strength Steels: A Review. Acta Metallurgica Sinica (English Letters), 2021, 34, 741-754.	1.5	54
15	Critical role of strain partitioning and deformation twinning on cracking phenomenon occurring during cold rolling of two duplex medium manganese steels. Scripta Materialia, 2017, 130, 49-53.	2.6	40
16	Microstructure Evolution of a Medium Manganese Steel During Thermomechanical Processing. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2016, 47, 1782-1791.	1.1	36
17	Elucidating the effect of gradient structure on strengthening mechanisms and fatigue behavior of pure titanium. International Journal of Fatigue, 2021, 146, 106142.	2.8	32
18	Opposing and Driving Forces Associated with the Dynamic Transformation of Ti-6Al-4V. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2018, 49, 1450-1454.	1.1	27

#	Article	IF	Citations
19	Ultrastrong and ductile additively manufactured precipitation-hardening medium-entropy alloy at ambient and cryogenic temperatures. Acta Materialia, 2022, 236, 118142.	3.8	27
20	Improving the ductility of ultrahigh-strength medium Mn steels via introducing pre-existed austenite acting as a â€œreservoirâ€•for Mn atoms. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2019, 749, 235-240.	2.6	26
21	Localized deformation inside the LÃ¼ders front of a medium manganese steel. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2021, 824, 141816.	2.6	25
22	The dual role of martensitic transformation in fatigue crack growth. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	25
23	Understanding the cold spray deposition efficiencies of 316L/Fe mixed powders by performing splat tests onto as-polished coatings. Surface and Coatings Technology, 2017, 324, 353-360.	2.2	24
24	Critical role of LÃ¼ders banding in hydrogen embrittlement susceptibility of medium Mn steels. Scripta Materialia, 2021, 190, 32-37.	2.6	24
25	Comparative study of hydrogen embrittlement resistance between additively and conventionally manufactured 304L austenitic stainless steels. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2021, 803, 140499.	2.6	23
26	Phase Transformation Behavior of Medium Manganese Steels with 3 Wt Pct Aluminum and 3 Wt Pct Silicon During Intercritical Annealing. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2016, 47, 4869-4882.	1.1	20
27	Reverse Transformation Behavior of Ti-6Al-4V After Deformation in the Two-Phase Region. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2018, 49, 22-27.	1.1	18
28	Bio-inspired and optimized interlocking features for strengthening metal/polymer interfaces in additively manufactured prostheses. Acta Biomaterialia, 2018, 80, 425-434.	4.1	18
29	A novel ultra-strong hot stamping steel treated by quenching and partitioning process. Materials Science and Technology, 2018, 34, 2241-2249.	0.8	17
30	New insights into the interface characteristics of a duplex stainless steel subjected to accelerated ferrite-to-austenite transformation. Journal of Materials Science, 2020, 55, 5322-5339.	1.7	17
31	Corrosion behavior of ferritic stainless steel with 15wt% chromium for the automobile exhaust system. International Journal of Minerals, Metallurgy and Materials, 2013, 20, 850-860.	2.4	16
32	Machine-learning-enhanced time-of-flight mass spectrometry analysis. Patterns, 2021, 2, 100192.	3.1	14
33	Mechanical Behavior of Two Ferriteâ€“Martensite Dual-Phase Steels over a Broad Range of Strain Rates. Metals, 2018, 8, 236.	1.0	13
34	Direct observations of collinear dislocation interaction in a Fe-17.4 Mn-1.50 Al-0.29 C (wt.%) austenitic steel under cyclic loading by in-situ electron channelling contrast imaging and cross-correlation electron backscatter diffraction. Scripta Materialia, 2020, 186, 341-345.	2.6	13
35	Evaluation of hydrogen effect on the fatigue crack growth behavior of medium-Mn steels via in-situ hydrogen plasma charging in an environmental scanning electron microscope. Journal of Materials Science and Technology, 2021, 85, 30-43.	5.6	13
36	Microstructure diversity dominated by the interplay between primary intermetallics and eutectics for Al-Ce heat-resistant alloys. Journal of Alloys and Compounds, 2022, 899, 162914.	2.8	13

#	Article	IF	Citations
37	Effects of Si on the Microstructure and Work Hardening Behavior of Feâ€'17Mnâ€'1.1Câ€'xSi High Manganese Steels. Metals and Materials International, 2021, 27, 3891-3904.	1.8	12
38	Effect of Grain Size and Residual Strain on the Dynamic Transformation of Austenite under Plate Rolling Conditions. Steel Research International, 2018, 89, 1700547.	1.0	8
39	New insights to understand the strain-state-dependent austenite stability in a medium Mn steel: An experimental and theoretical investigation. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2021, 809, 140993.	2.6	8
40	Enhancing plasticity by increasing tempered martensite in ultra-strong ferrite-martensite dual-phase steel. Materials Research Express, 2019, 6, 026502.	0.8	6
41	Deformation-induced phase transformation in Zircaloy-4 below the beta transus. Materials Letters, 2018, 220, 229-233.	1.3	4
42	Annealing-induced strengthening and stabilization in ultrafine-grained Al and Alâ€"Mg alloys prepared by rapid powder consolidation. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2022, 833, 142539.	2.6	1
43	Annealing-Induced Grain Refinement and Hardening in Ultrafine-Grained Al and Al-Mg Alloys. SSRN Electronic Journal, 0, , .	0.4	0
44	Effects of Post AnnealingÂOn the Microstructure, PrecipitationÂBehavior, and Mechanical PropertyÂOf a (Cocrni)94al3ti3ÂMedium-Entropy AlloyÂFabricated by Laser Powder Bed Fusion. SSRN Electronic Journal, 0, , .	0.4	0