

Bharat Gwalani

List of Publications by Year in descending order

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104
papers

4,181
citations

101543

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107
all docs

107
docs citations

107
times ranked

2537
citing authors

#	ARTICLE	IF	CITATIONS
1	Thermal stability and mechanical properties of cold-sprayed Nickel-Yttria coating. <i>Scripta Materialia</i> , 2022, 207, 114281.	5.2	9
2	Formation and dissociation of shear-induced high-energy dislocations: insight from molecular dynamics simulations. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2022, 30, 025012.	2.0	4
3	An Approach for the Microstructure-Sensitive Simulation of Shear-Induced Deformation and Recrystallization in Al-Si Alloys. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2022, 53, 1450.	2.2	0
4	Decoupling of strain and temperature effects on microstructural evolution during high shear strain deformation. <i>Materialia</i> , 2022, 22, 101402.	2.7	3
5	Highly complex magnetic behavior resulting from hierarchical phase separation in AlCo(Cr)FeNi high-entropy alloys. <i>IScience</i> , 2022, 25, 104047.	4.1	8
6	Metallurgical joining of immiscible system: Pure Mg and pure Fe. <i>Materials Characterization</i> , 2022, 187, 111821.	4.4	3
7	Extended Shear Deformation of the Immiscible Cu-Nb Alloy Resulting in Nanostructuring and Oxygen Ingress with Enhancement in Mechanical Properties. <i>ACS Omega</i> , 2022, 7, 13721-13736.	3.5	3
8	High oxidation resistance of AlCoCrFeNi high entropy alloy through severe shear deformation processing. <i>Journal of Alloys and Compounds</i> , 2022, 917, 165385.	5.5	11
9	Shear strain gradient in Cu/Nb nanolaminates: Strain accommodation and chemical mixing. <i>Acta Materialia</i> , 2022, 234, 117986.	7.9	12
10	Atomistic understanding of extreme strain shear deformation of Copper-Graphene composites. <i>Carbon</i> , 2022, 198, 63-69.	10.3	5
11	Discontinuous precipitation leading to nano-rod intermetallic precipitates in an Al _{0.2} Ti _{0.3} Co _{1.5} CrFeNi _{1.5} high entropy alloy results in an excellent strength-ductility combination. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2021, 805, 140551.	5.6	31
12	Recovery of cold-worked Al _{0.3} CoCrFeNi complex concentrated alloy through twinning assisted B ₂ precipitation. <i>Acta Materialia</i> , 2021, 202, 448-462.	7.9	47
13	Influence of fine-scale B ₂ precipitation on dynamic compression and wear properties in hypo-eutectic Al _{0.5} CoCrFeNi high-entropy alloy. <i>Journal of Alloys and Compounds</i> , 2021, 853, 157126.	5.5	21
14	Ordering-mediated local nano-clustering results in unusually large Hall-Petch strengthening coefficients in high entropy alloys. <i>Materials Research Letters</i> , 2021, 9, 213-222.	8.7	21
15	Co-introduction of precipitate hardening and TRIP in a TWIP high-entropy alloy using friction stir alloying. <i>Scientific Reports</i> , 2021, 11, 1579.	3.3	8
16	Phase transformations, microstructural refinement and defect evolution mechanisms in Al-Si alloys under non-hydrostatic diamond anvil cell compression. <i>Materialia</i> , 2021, 15, 101049.	2.7	5
17	Insights into Defect-Mediated Nucleation of Equilibrium B ₂ Phase in Face-Centered Cubic High-Entropy Alloys. <i>Jom</i> , 2021, 73, 2320-2331.	1.9	5
18	Tuning the degree of chemical ordering in the solid solution of a complex concentrated alloy and its impact on mechanical properties. <i>Acta Materialia</i> , 2021, 212, 116938.	7.9	29

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19	Shear-Deformation-Induced Modification of Defect Structures and Hierarchical Microstructures in Miscible and Immiscible Alloys. <i>Microscopy and Microanalysis</i> , 2021, 27, 3106-3108.	0.4	0
20	In-situ TEM observation of bending induced sub-grain boundary formation in copper single crystal. <i>Microscopy and Microanalysis</i> , 2021, 27, 3414-3415.	0.4	0
21	Mechanistic insights into selective oxidation and corrosion of multi-principal element alloys from high resolution and in situ microscopy. <i>Materialia</i> , 2021, 18, 101148.	2.7	6
22	Lattice misorientation evolution and grain refinement in Al-Si alloys under high-strain shear deformation. <i>Materialia</i> , 2021, 18, 101146.	2.7	14
23	Molecular-scale investigation of the oxidation behavior of chromia-forming alloys in high-temperature CO ₂ . <i>Npj Materials Degradation</i> , 2021, 5, .	5.8	13
24	High density of strong yet deformable intermetallic nanorods leads to an excellent room temperature strength-ductility combination in a high entropy alloy. <i>Acta Materialia</i> , 2021, 219, 117234.	7.9	59
25	Nanomechanical scratching induced local shear deformation and microstructural evolution in single crystal copper. <i>Applied Surface Science</i> , 2021, 562, 150132.	6.1	17
26	Hierarchical phase evolution in a lamellar Al _{0.7} CoCrFeNi high entropy alloy involving competing metastable and stable phases. <i>Scripta Materialia</i> , 2021, 204, 114137.	5.2	17
27	Multimodal analysis of spatially heterogeneous microstructural refinement and softening mechanisms in three-pass friction stir processed Al-4Si alloy. <i>Journal of Alloys and Compounds</i> , 2021, 887, 161351.	5.5	9
28	Understanding the microstructural stability in a ϵ -strengthened Ni-Fe-Cr-Al-Ti alloy. <i>Journal of Alloys and Compounds</i> , 2021, 886, 161207.	5.5	1
29	In-situ TEM observation of shear induced microstructure evolution in Cu-Nb alloy. <i>Scripta Materialia</i> , 2021, 205, 114214.	5.2	6
30	Excellent ballistic impact resistance of Al _{0.3} CoCrFeNi multi-principal element alloy with unique bimodal microstructure. <i>Scientific Reports</i> , 2021, 11, 22715.	3.3	14
31	Interplay between single phase solid solution strengthening and multi-phase strengthening in the same high entropy alloy. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020, 771, 138620.	5.6	26
32	Phase stability and microstructure evolution in a ductile refractory high entropy alloy Al ₁₀ Nb ₁₅ Ta ₅ Ti ₃₀ Zr ₄₀ . <i>Materialia</i> , 2020, 9, 100569.	2.7	61
33	Phase inversion in a two-phase, BCC+B ₂ , refractory high entropy alloy. <i>Acta Materialia</i> , 2020, 185, 89-97.	7.9	128
34	Engineering transformation pathways in an Al _{<sub>0.3</sub>} CoFeNi complex concentrated alloy leads to excellent strength-ductility combination. <i>Materials Research Letters</i> , 2020, 8, 399-407.	8.7	12
35	Extreme shear-deformation-induced modification of defect structures and hierarchical microstructure in an Al-Si alloy. <i>Communications Materials</i> , 2020, 1, .	6.9	29
36	Rapid assessment of structural and compositional changes during early stages of zirconium alloy oxidation. <i>Npj Materials Degradation</i> , 2020, 4, .	5.8	14

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37	Microstructural Assessment of a Multiple-Intermetallic-Strengthened Aluminum Alloy Produced from Gas-Atomized Powder by Hot Extrusion and Friction Extrusion. <i>Materials</i> , 2020, 13, 5333.	2.9	7
38	Deformation behavior of metallic glass composites and plasticity accommodation at microstructural length-scales. <i>Materials Today Communications</i> , 2020, 24, 101237.	1.9	6
39	Dynamic Shear Deformation of a Precipitation Hardened Al _{0.7} CoCrFeNi Eutectic High-Entropy Alloy Using Hat-Shaped Specimen Geometry. <i>Entropy</i> , 2020, 22, 431.	2.2	16
40	Highly tunable magnetic and mechanical properties in an Al _{0.3} CoFeNi complex concentrated alloy. <i>Materialia</i> , 2020, 12, 100755.	2.7	17
41	Hierarchical Eutectoid Nano-lamellar Decomposition in an Al _{0.3} CoFeNi Complex Concentrated Alloy. <i>Scientific Reports</i> , 2020, 10, 4836.	3.3	27
42	Engineering multi-scale B2 precipitation in a heterogeneous FCC based microstructure to enhance the mechanical properties of a Al _{0.5} Co _{1.5} CrFeNi _{1.5} high entropy alloy. <i>Journal of Alloys and Compounds</i> , 2020, 830, 154707.	5.5	57
43	Influence of non-magnetic Cu on enhancing the low temperature magnetic properties and Curie temperature of FeCoNiCrCu(x) high entropy alloys. <i>Scripta Materialia</i> , 2020, 182, 99-103.	5.2	40
44	Direct Observation of Zirconium Alloy Oxidation at the Nanoscale. <i>Microscopy and Microanalysis</i> , 2019, 25, 318-319.	0.4	0
45	A novel nano-particle strengthened titanium alloy with exceptional specific strength. <i>Scientific Reports</i> , 2019, 9, 11726.	3.3	11
46	Compositionally graded high entropy alloy with a strong front and ductile back. <i>Materials Today Communications</i> , 2019, 20, 100602.	1.9	18
47	Multimodal Atomic Scale Characterization of Structural and Compositional Changes During Shear Deformation of Materials. <i>Microscopy and Microanalysis</i> , 2019, 25, 2510-2511.	0.4	0
48	Influence of Composition and Structure on Measured H Concentration in beta-Ti Alloys via Atom Probe Tomography. <i>Microscopy and Microanalysis</i> , 2019, 25, 2542-2543.	0.4	0
49	Elemental partitioning, mechanical and oxidation behaviour of two high-entropy alloys with different W-free compositions. <i>Journal of Alloys and Compounds</i> , 2019, 800, 154707.	5.5	57
50	Immiscible nanostructured copper-aluminum-niobium alloy with excellent precipitation strengthening upon friction stir processing and aging. <i>Scripta Materialia</i> , 2019, 164, 42-47.	5.2	13
51	Laser additive manufacturing of compositionally graded AlCrFeMoVx (x = 0 to 1) high-entropy alloy system. <i>Optics and Laser Technology</i> , 2019, 113, 330-337.	4.6	55
52	Facile Photochemical Syntheses of Conjoined Nanotwin Gold-Silver Particles within a Biologically-Benign Chitosan Polymer. <i>Nanomaterials</i> , 2019, 9, 596.	4.1	12
53	Effect of nano-sized precipitates on the fatigue property of a lamellar structured high entropy alloy. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2019, 760, 225-230.	5.6	28
54	Development of in situ composites via reactive friction stir processing of Ti-B4C system. <i>Composites Part B: Engineering</i> , 2019, 172, 54-60.	12.0	38

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55	Influence of ordered L12 precipitation on strain-rate dependent mechanical behavior in a eutectic high entropy alloy. <i>Scientific Reports</i> , 2019, 9, 6371.	3.3	59
56	Role of copper on L12 precipitation strengthened fcc based high entropy alloy. <i>Materialia</i> , 2019, 6, 100282.	2.7	31
57	Composition-dependent apparent activation-energy and sluggish grain-growth in high entropy alloys. <i>Materials Research Letters</i> , 2019, 7, 267-274.	8.7	25
58	Effect of reactive alloy elements on friction stir welded butt joints of metallurgically immiscible magnesium alloys and steel. <i>Journal of Manufacturing Processes</i> , 2019, 39, 138-145.	5.9	26
59	Deformation Induced Hierarchical Twinning Coupled with Omega Transformation in a Metastable β -Ti Alloy. <i>Scientific Reports</i> , 2019, 9, 1334.	3.3	36
60	Simulation of solute clusters in metallic systems. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2019, 27, 085014.	2.0	1
61	Fatigue behavior of ultrafine grained triplex Al _{0.3} CoCrFeNi high entropy alloy. <i>Scripta Materialia</i> , 2019, 158, 116-120.	5.2	101
62	Strengthening of Al _{0.3} CoCrFeMnNi-based ODS high entropy alloys with incremental changes in the concentration of Y ₂ O ₃ . <i>Scripta Materialia</i> , 2019, 162, 477-481.	5.2	52
63	Microstructure and mechanical behavior of an additive manufactured (AM) WE43-Mg alloy. <i>Additive Manufacturing</i> , 2019, 26, 53-64.	3.0	50
64	Enhancing strength and strain hardenability via deformation twinning in fcc-based high entropy alloys reinforced with intermetallic compounds. <i>Acta Materialia</i> , 2019, 165, 420-430.	7.9	155
65	High Strain Rate Response of Al _{0.7} CoCrFeNi High Entropy Alloy: Dynamic Strength Over 2 GPa from Thermomechanical Processing and Hierarchical Microstructure. <i>Journal of Dynamic Behavior of Materials</i> , 2019, 5, 1-7.	1.7	4
66	Tensile yield strength of a single bulk Al _{0.3} CoCrFeNi high entropy alloy can be tuned from 160 MPa to 1800 MPa. <i>Scripta Materialia</i> , 2019, 162, 18-23.	5.2	138
67	Contrasting mechanical behavior in precipitation hardenable Al _x CoCrFeNi high entropy alloy microstructures: Single phase FCC vs. dual phase FCC-BCC. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2019, 739, 158-166.	5.6	97
68	Deformation induced intermediate metastable lattice structures facilitate ordered B2 nucleation in a fcc-based high entropy alloy. <i>Materials Research Letters</i> , 2019, 7, 40-46.	8.7	20
69	Crystallographically degenerate B2 precipitation in a plastically deformed fcc-based complex concentrated alloy. <i>Materials Research Letters</i> , 2018, 6, 171-177.	8.7	40
70	Microstructure and wear resistance of an intermetallic-based Al _{0.25} Ti _{0.75} CoCrFeNi high entropy alloy. <i>Materials Chemistry and Physics</i> , 2018, 210, 197-206.	4.0	53
71	Reciprocating sliding wear behavior of high entropy alloys in dry and marine environments. <i>Materials Chemistry and Physics</i> , 2018, 210, 162-169.	4.0	82
72	Microstructure and mechanical properties of friction stir processed cast Eglin steel (ES-1). <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2018, 709, 105-114.	5.6	10

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73	Microstructures and mechanical properties of mechanically alloyed and spark plasma sintered Al _{0.3} CoCrFeMnNi high entropy alloy. <i>Materials Chemistry and Physics</i> , 2018, 210, 62-70.	4.0	63
74	The effect of cold rolling on grain boundary structure and stress corrosion cracking susceptibility of twins in alloy 690 in simulated PWR primary water environment. <i>Corrosion Science</i> , 2018, 130, 126-137.	6.6	40
75	Additively Manufactured Functionally Graded FeNi based High Entropy Magnetic Alloys. , 2018, , .		4
76	Surface degradation mechanisms in precipitation-hardened high-entropy alloys. <i>Npj Materials Degradation</i> , 2018, 2, .	5.8	31
77	Hierarchical features infused heterogeneous grain structure for extraordinary strength-ductility synergy. <i>Materials Research Letters</i> , 2018, 6, 676-682.	8.7	103
78	Influence of Cr Substitution and Temperature on Hierarchical Phase Decomposition in the AlCoFeNi High Entropy Alloy. <i>Scientific Reports</i> , 2018, 8, 15578.	3.3	34
79	Grain size dependence of strain rate sensitivity in a single phase FCC high entropy alloy Al _{0.3} CoCrFeNi. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2018, 736, 344-348.	5.6	49
80	High-entropy alloy strengthened by in situ formation of entropy-stabilized nano-dispersoids. <i>Scientific Reports</i> , 2018, 8, 14085.	3.3	55
81	Microstructures with extraordinary dynamic work hardening and strain rate sensitivity in Al _{0.3} CoCrFeNi high entropy alloy. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2018, 734, 42-50.	5.6	46
82	Phase stability as a function of temperature in a refractory high-entropy alloy. <i>Journal of Materials Research</i> , 2018, 33, 3235-3246.	2.6	80
83	Modifying transformation pathways in high entropy alloys or complex concentrated alloys via thermo-mechanical processing. <i>Acta Materialia</i> , 2018, 153, 169-185.	7.9	169
84	Microstructural dependence of strain rate sensitivity in thermomechanically processed Al _{0.1} CoCrFeNi high entropy alloy. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2018, 727, 148-159.	5.6	33
85	Investigation of Clusters and Their Effect on Grain Growth in Single Phase Al _x CoCrFeNi High Entropy Alloys. <i>Microscopy and Microanalysis</i> , 2018, 24, 2214-2215.	0.4	0
86	Detailed Investigation of Core-Shell Precipitates in a Cu-Containing High Entropy Alloy. <i>Jom</i> , 2018, 70, 1771-1775.	1.9	3
87	Microstructural Design for Improving Ductility of An Initially Brittle Refractory High Entropy Alloy. <i>Scientific Reports</i> , 2018, 8, 8816.	3.3	138
88	Cu assisted stabilization and nucleation of L12 precipitates in Al _{0.3} CuFeCrNi ₂ fcc-based high entropy alloy. <i>Acta Materialia</i> , 2017, 129, 170-182.	7.9	130
89	Optimizing the coupled effects of Hall-Petch and precipitation strengthening in a Al 0.3 CoCrFeNi high entropy alloy. <i>Materials and Design</i> , 2017, 121, 254-260.	7.0	287
90	Tuning the phase stability and magnetic properties of laser additively processed Fe-30at%Ni soft magnetic alloys. <i>Materials Letters</i> , 2017, 199, 88-92.	2.6	49

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91	A Combinatorial Approach for Assessing the Magnetic Properties of High Entropy Alloys: Role of Cr in AlCoCrFeNi. <i>Advanced Engineering Materials</i> , 2017, 19, 1700048.	3.5	95
92	High performance rechargeable Li-S batteries using binder-free large sulfur-loaded three-dimensional carbon nanotubes. <i>Carbon</i> , 2017, 118, 120-126.	10.3	70
93	The evolution of microstructure and microhardness in a biomedical Ti-35Nb-7Zr-5Ta alloy. <i>Journal of Materials Science</i> , 2017, 52, 3062-3073.	3.7	18
94	Change in the primary solidification phase from fcc to bcc -based B2 in high entropy or complex concentrated alloys. <i>Scripta Materialia</i> , 2017, 127, 186-190.	5.2	85
95	Grain Boundary Precipitation in Ni Based Superalloy 690 Investigated via Site-specific Atom Probe Microscopy. <i>Microscopy and Microanalysis</i> , 2016, 22, 1500-1501.	0.4	0
96	Pine Wood Extracted Activated Carbon through Self-Activation Process for High-Performance Lithium-Ion Battery. <i>ChemistrySelect</i> , 2016, 1, 4000-4007.	1.5	16
97	Designing and characterizing a complex concentrated gamma/gamma prime superalloy™. <i>Microscopy and Microanalysis</i> , 2016, 22, 672-673.	0.4	2
98	Experimental investigation of the ordering pathway in a Ni-33at.%Cr alloy. <i>Acta Materialia</i> , 2016, 115, 372-384.	7.9	42
99	Stability of ordered L12 and B2 precipitates in face centered cubic based high entropy alloys - Al _{0.3} CoFeCrNi and Al _{0.3} CuFeCrNi ₂ . <i>Scripta Materialia</i> , 2016, 123, 130-134.	5.2	165
100	A combinatorial assessment of Al _x CrCuFeNi ₂ (0 ≤ x ≤ 1.5) complex concentrated alloys: Microstructure, microhardness, and magnetic properties. <i>Acta Materialia</i> , 2016, 116, 63-76.	7.9	219
101	On the role of Ag in enhanced age hardening kinetics of Mg-Gd-Ag-Zr alloys. <i>Philosophical Magazine Letters</i> , 2016, 96, 212-219.	1.2	36
102	Hierarchical multi-scale microstructural evolution in an as-cast Al ₂ CuCrFeNi ₂ complex concentrated alloy. <i>Intermetallics</i> , 2016, 71, 31-42.	3.9	31
103	Formation of a Huesler-like L21 phase in a CoCrCuFeNiAlTi high-entropy alloy. <i>Scripta Materialia</i> , 2015, 100, 36-39.	5.2	93
104	Phase Transformations, Microstructural Refinement and Defect Evolution Mechanisms in Al-Si Alloys Under Non-Hydrostatic Diamond Anvil Cell Compression. <i>SSRN Electronic Journal</i> , 0, , .	0.4	0