

Afrooz Barnoush

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/5069279/publications.pdf>

Version: 2024-02-01

96
papers

3,138
citations

147566

31
h-index

174990

52
g-index

97
all docs

97
docs citations

97
times ranked

2225
citing authors

#	ARTICLE	IF	CITATIONS
1	Recent developments in the study of hydrogen embrittlement: Hydrogen effect on dislocation nucleation. <i>Acta Materialia</i> , 2010, 58, 5274-5285.	3.8	331
2	A Review on the Properties of Iron Aluminide Intermetallics. <i>Crystals</i> , 2016, 6, 10.	1.0	147
3	Correlation between dislocation density and nanomechanical response during nanoindentation. <i>Acta Materialia</i> , 2012, 60, 1268-1277.	3.8	116
4	Resolving the hydrogen effect on dislocation nucleation and mobility by electrochemical nanoindentation. <i>Scripta Materialia</i> , 2012, 66, 414-417.	2.6	100
5	Electrochemical nanoindentation: A new approach to probe hydrogen/deformation interaction. <i>Scripta Materialia</i> , 2006, 55, 195-198.	2.6	99
6	Hydrogen embrittlement revealed via novel in situ fracture experiments using notched micro-cantilever specimens. <i>Acta Materialia</i> , 2018, 142, 236-247.	3.8	94
7	In situ electrochemical nanoindentation: A technique for local examination of hydrogen embrittlement. <i>Corrosion Science</i> , 2008, 50, 259-267.	3.0	91
8	Materials and corrosion trends in offshore and subsea oil and gas production. <i>Npj Materials Degradation</i> , 2017, 1, .	2.6	80
9	In situ electrochemical microcantilever bending test: A new insight into hydrogen enhanced cracking. <i>Scripta Materialia</i> , 2017, 132, 17-21.	2.6	76
10	Atomic defects in monolayer ordered double transition metal carbide (Mo ₂ TiC ₂ T _x) MXene and CO ₂ adsorption. <i>Journal of Materials Chemistry C</i> , 2020, 8, 4771-4779.	2.7	73
11	Fracture assessment of polymethyl methacrylate using sharp notched disc bend specimens under mixed mode I + III loading. <i>Physical Mesomechanics</i> , 2016, 19, 355-364.	1.0	68
12	Correlation between dislocation density and pop-in phenomena in aluminum studied by nanoindentation and electron channeling contrast imaging. <i>Scripta Materialia</i> , 2010, 63, 465-468.	2.6	61
13	An insight into the role of the grain boundary in plastic deformation by means of a bicrystalline pillar compression test and atomistic simulation. <i>Acta Materialia</i> , 2013, 61, 7454-7465.	3.8	57
14	Effect of hydrogen on nanomechanical properties in Fe-22Mn-0.6C TWIP steel revealed by in-situ electrochemical nanoindentation. <i>Acta Materialia</i> , 2019, 166, 618-629.	3.8	57
15	Microstructural characterization of pulsed plasma nitrided 316L stainless steel. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2011, 529, 425-434.	2.6	56
16	In-situ micro-cantilever bending test in environmental scanning electron microscope: Real time observation of hydrogen enhanced cracking. <i>Scripta Materialia</i> , 2017, 127, 19-23.	2.6	56
17	Effect of electrochemical charging on the hydrogen embrittlement susceptibility of alloy 718. <i>Acta Materialia</i> , 2019, 179, 36-48.	3.8	55
18	Hydrogen-enhanced fatigue crack growth in a single-edge notched tensile specimen under in-situ hydrogen charging inside an environmental scanning electron microscope. <i>Acta Materialia</i> , 2019, 170, 87-99.	3.8	50

#	ARTICLE	IF	CITATIONS
19	Direct observation of hydrogen-enhanced plasticity in super duplex stainless steel by means of in situ electrochemical methods. <i>Scripta Materialia</i> , 2010, 62, 242-245.	2.6	48
20	Examination of hydrogen embrittlement in FeAl by means of in situ electrochemical micropillar compression and nanoindentation techniques. <i>Intermetallics</i> , 2010, 18, 1385-1389.	1.8	48
21	Cr effect on hydrogen embrittlement of Fe ₃ Al-based iron aluminide intermetallics: Surface or bulk effect. <i>Acta Materialia</i> , 2014, 69, 210-223.	3.8	39
22	Effect of nickel on hydrogen permeation in ferritic/pearlitic low alloy steels. <i>International Journal of Hydrogen Energy</i> , 2018, 43, 3845-3861.	3.8	39
23	Hydrogen embrittlement of aluminum in aqueous environments examined by in situ electrochemical nanoindentation. <i>Scripta Materialia</i> , 2008, 58, 747-750.	2.6	38
24	Effect of hydrogen on the hardness of different phases in super duplex stainless steel. <i>International Journal of Hydrogen Energy</i> , 2016, 41, 704-712.	3.8	37
25	Insight into hydrogen effect on a duplex medium-Mn steel revealed by in-situ nanoindentation test. <i>International Journal of Hydrogen Energy</i> , 2019, 44, 20545-20551.	3.8	37
26	Effect of hydrogen on dislocation nucleation in alloy 718. <i>International Journal of Hydrogen Energy</i> , 2017, 42, 15933-15942.	3.8	36
27	Hydrogen embrittlement effect observed by in-situ hydrogen plasma charging on a ferritic alloy. <i>Scripta Materialia</i> , 2018, 151, 24-27.	2.6	36
28	In-situ observation of martensitic transformation in an interstitial metastable high-entropy alloy during cathodic hydrogen charging. <i>Scripta Materialia</i> , 2019, 173, 56-60.	2.6	35
29	Temperature-dependent mechanical properties of Ti _{n+1} C _n O ₂ (n = 1, 2) MXene monolayers: a first-principles study. <i>Physical Chemistry Chemical Physics</i> , 2020, 22, 3414-3424.	1.3	35
30	Hydrogen enhanced fatigue crack growth rates in a ferritic Fe-3wt%Si alloy and a X70 pipeline steel. <i>Engineering Fracture Mechanics</i> , 2019, 219, 106641.	2.0	33
31	In situ small-scale mechanical testing under extreme environments. <i>MRS Bulletin</i> , 2019, 44, 471-477.	1.7	33
32	Assessment of the potential of hydrogen plasma charging as compared to conventional electrochemical hydrogen charging on dual phase steel. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2019, 754, 613-621.	2.6	33
33	In situ electrochemical nanoindentation of FeAl (100) single crystal: Hydrogen effect on dislocation nucleation. <i>Journal of Materials Research</i> , 2009, 24, 1105-1113.	1.2	32
34	Impact of selective oxidation during inline annealing prior to hot-dip galvanizing on Zn wetting and hydrogen-induced delayed cracking of austenitic FeMnC steel. <i>Surface and Coatings Technology</i> , 2011, 206, 542-552.	2.2	32
35	In situ micromechanical testing in environmental scanning electron microscope: A new insight into hydrogen-assisted cracking. <i>Acta Materialia</i> , 2018, 144, 257-268.	3.8	32
36	Effect of hydrogen-induced surface steps on the nanomechanical behavior of a CoCrFeMnNi high-entropy alloy revealed by in-situ electrochemical nanoindentation. <i>Intermetallics</i> , 2019, 114, 106605.	1.8	30

#	ARTICLE	IF	CITATIONS
37	Effect of chromium on the electrochemical properties of iron aluminide intermetallics. <i>Corrosion Science</i> , 2014, 78, 223-232.	3.0	28
38	Correlation between the hydrogen chemical potential and pop-in load during in situ electrochemical nanoindentation. <i>Scripta Materialia</i> , 2015, 108, 76-79.	2.6	28
39	Microstructural Analysis of Electrochemical Coated Open-Cell Metal Foams by EBSD and Nanoindentation. <i>Advanced Engineering Materials</i> , 2014, 16, 15-20.	1.6	27
40	Macro- and microscale investigations of hydrogen embrittlement in X70 pipeline steel by in-situ and ex-situ hydrogen charging tensile tests and in-situ electrochemical micro-cantilever bending test. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020, 772, 138762.	2.6	27
41	Hydrogen-enhanced intergranular failure of sulfur-doped nickel grain boundary: In situ electrochemical micro-cantilever bending vs. ADF. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020, 794, 139967.	2.6	27
42	Calculation of all cubic single-crystal elastic constants from single atomistic simulation: Hydrogen effect and elastic constants of nickel. <i>Computer Physics Communications</i> , 2011, 182, 1621-1625.	3.0	26
43	Effect of chromium on elastic and plastic deformation of Fe ₃ Al intermetallics. <i>Intermetallics</i> , 2013, 41, 28-34.	1.8	26
44	Calcareous scales deposited in the organic coating defects during artificial seawater cathodic protection: Effect of zinc cations. <i>Journal of Alloys and Compounds</i> , 2019, 784, 744-755.	2.8	26
45	Experimental and Numerical Investigation of Hydrogen Embrittlement Effect on Microdamage Evolution of Advanced High-Strength Dual-Phase Steel. <i>Metals and Materials International</i> , 2021, 27, 2276-2291.	1.8	26
46	Chemically Induced Phase Transformation in Austenite by Focused Ion Beam. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2014, 45, 1189-1198.	1.1	24
47	Neutron diffraction study of temperature-dependent elasticity of B19' NiTi—Elinvar effect and elastic softening. <i>Acta Materialia</i> , 2019, 173, 281-291.	3.8	24
48	Nanomechanical characterization of the hydrogen effect on pulsed plasma nitrided super duplex stainless steel. <i>International Journal of Hydrogen Energy</i> , 2013, 38, 15520-15531.	3.8	23
49	In situ electrochemical nanoindentation of a nickel (111) single crystal: hydrogen effect on pop-in behaviour. <i>International Journal of Materials Research</i> , 2006, 97, 1224-1229.	0.1	22
50	Hydrogen susceptibility of an interstitial equimolar high-entropy alloy revealed by in-situ electrochemical microcantilever bending test. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2019, 762, 138114.	2.6	21
51	Novel methods for micromechanical examination of hydrogen and grain boundary effects on dislocations. <i>Philosophical Magazine</i> , 2012, 92, 3216-3230.	0.7	18
52	In situ small-scale hydrogen embrittlement testing made easy: An electrolyte for preserving surface integrity at nano-scale during hydrogen charging. <i>International Journal of Hydrogen Energy</i> , 2018, 43, 12516-12529.	3.8	18
53	Effect of substitutional solid solution on dislocation nucleation in Fe ₃ Al intermetallic alloys. <i>Philosophical Magazine</i> , 2012, 92, 3257-3268.	0.7	17
54	Nanomechanical evaluation of the protectiveness of nitrided layers against hydrogen embrittlement. <i>Corrosion Science</i> , 2012, 62, 51-60.	3.0	17

#	ARTICLE	IF	CITATIONS
55	An Overview of the Hydrogen Embrittlement of Iron Aluminides. , 2014, 3, 2016-2023.		17
56	Effect of Hydrogen and Grain Boundaries on Dislocation Nucleation and Multiplication Examined with a NI-AFM. , 2008, , 253-269.		17
57	Hydrogen-enhanced fatigue crack growth behaviors in a ferritic Fe-3wt%Si steel studied by fractography and dislocation structure analysis. International Journal of Hydrogen Energy, 2019, 44, 5030-5042.	3.8	16
58	Electrophoretic deposition and corrosion performance of Zirconia-Silica composite coating applied on surface treated 316L stainless steel: Toward improvement of interface structure. Surface and Coatings Technology, 2019, 380, 125015.	2.2	15
59	3D-Focused ion beam tomography and quantitative porosity evaluation of ZrO ₂ -SiO ₂ composite coating; amorphous SiO ₂ as a porosity tailoring agent. Applied Surface Science, 2020, 511, 145567.	3.1	15
60	Plasticity in cryogenic brittle fracture of ferritic steels: Dislocation versus twinning. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2019, 744, 335-339.	2.6	14
61	The influence of hydrogen on cyclic plasticity of $\langle 001 \rangle$ oriented nickel single crystal. Part I: Dislocation organisations and internal stresses. International Journal of Plasticity, 2020, 126, 102611.	4.1	14
62	The role of graphene oxide interlayer on corrosion barrier and bioactive properties of electrophoretically deposited ZrO ₂ -10Åat. % SiO ₂ composite coating on 316ÅL stainless steel. Materials Science and Engineering C, 2020, 117, 111342.	3.8	14
63	The effect of hydrogen on the crack initiation site of TRIP-assisted steels during in-situ hydrogen plasma micro-tensile testing: Leading to an improved ductility?. Materials Characterization, 2020, 167, 110493.	1.9	14
64	Mechanical Properties of Nanomaterials Examined with a NI-AFM. Zeitschrift Fur Physikalische Chemie, 2008, 222, 499-525.	1.4	13
65	Investigation of the role of grain boundary on the mechanical properties of metals. Journal of Physics: Conference Series, 2010, 240, 012017.	0.3	13
66	Hydrogen Effect on Nanomechanical Properties of the Nitrided Steel. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2013, 44, 766-775.	1.1	13
67	Stabilization of 2D graphene, functionalized graphene, and Ti ₂ CO ₂ (MXene) in super-critical CO ₂ : a molecular dynamics study. Physical Chemistry Chemical Physics, 2019, 21, 12968-12976.	1.3	13
68	Hydrogen effect on dislocation nucleation in a ferritic alloy Fe-15Cr as observed per nanoindentation. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2014, 604, 86-91.	2.6	12
69	Mechanical behavior of iron aluminides: A comparison of nanoindentation, compression and bending of micropillars. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 652, 370-376.	2.6	12
70	Vacancy effects on the mechanical behavior of B ₂ -FeAl intermetallics. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2018, 712, 88-96.	2.6	12
71	Rheological properties of super critical CO ₂ with CuO: Multi-scale computational modeling. Journal of Chemical Physics, 2018, 149, 224702.	1.2	12
72	Temperature-dependent properties of magnetic CuFeS ₂ from first-principles calculations: Structure, mechanics, and thermodynamics. AIP Advances, 2019, 9, 065021.	0.6	11

#	ARTICLE	IF	CITATIONS
73	Rheological properties of super critical CO ₂ with Al ₂ O ₃ : Material type, size and temperature effect. Journal of Molecular Liquids, 2019, 289, 111037.	2.3	11
74	Small-scale structural and mechanical characterization of the nitrided layer in martensitic steel. Tribology International, 2013, 61, 109-115.	3.0	10
75	Atomistic Study of Hydrogen Effect on Dislocation Nucleation at Crack Tip. Advanced Engineering Materials, 2013, 15, 1146-1151.	1.6	10
76	In-situ microscale examination of hydrogen effect on fracture toughness: A case study on B2 and D03 ordered iron aluminides intermetallic alloys. Engineering Fracture Mechanics, 2019, 217, 106551.	2.0	10
77	Oxygen argon plasma treatment effect on hydrogen uptake in austenitic stainless steels. International Journal of Hydrogen Energy, 2014, 39, 14120-14131.	3.8	9
78	Hydrogen-enhanced cracking revealed by in situ micro-cantilever bending test inside environmental scanning electron microscope. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20170106.	1.6	9
79	Assessment of hydrogen embrittlement on advanced high strength steels revealed by in-situ electrochemical micro-cantilever bending test. International Journal of Hydrogen Energy, 2022, 47, 10112-10121.	3.8	8
80	Hydrogen assisted intergranular cracking of alloy 725: The effect of boron and copper alloying. Corrosion Science, 2022, 203, 110331.	3.0	8
81	Alpha alumina synthesis by laser treatment of bi-phasic nanowires. Applied Surface Science, 2013, 278, 82-85.	3.1	7
82	Antagonist softening and hardening effects of hydrogen investigated using nanoindentation on cyclically pre-strained nickel single crystal. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2021, 803, 140480.	2.6	7
83	Role of grain boundaries in hydrogen embrittlement of alloy 725: single and bi-crystal microcantilever bending study. International Journal of Hydrogen Energy, 2022, 47, 12771-12781.	3.8	7
84	Mechanics of modern test methods and quantitative-accelerated testing for hydrogen embrittlement. , 2012, , 237-273.		6
85	CO ₂ Adsorption and Activation on the (110) Chalcopyrite Surfaces: A Dispersion-Corrected DFT + U Study. ACS Omega, 2019, 4, 15935-15946.	1.6	6
86	Evaluation of the cementite morphology influence on the hydrogen induced crack nucleation and propagation path in carbon steels. International Journal of Hydrogen Energy, 2022, 47, 14121-14129.	3.8	6
87	Micromechanical Testing of Fracture Initiation Sites in Welded High-Strength Low-Alloy Steel. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2014, 45, 1996-2003.	1.1	5
88	Hydrogen enhanced cracking studies on Fe-3wt%Si single and bi-crystal microcantilevers. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20160410.	1.6	5
89	Small scale testing approach to reveal specific features of slip behavior in BCC metals. Acta Materialia, 2019, 174, 142-152.	3.8	5
90	Hydrogen Enhanced Fatigue Crack Growth Rates in a Ferritic Fe-3wt%Si Alloy. Procedia Structural Integrity, 2018, 13, 1514-1520.	0.3	4

#	ARTICLE	IF	CITATIONS
91	In situ electrochemical nanoindentation of a nickel (111) single crystal: hydrogen effect on pop-in behaviour. International Journal of Materials Research, 2022, 97, 1224-1229.	0.1	4
92	Fracture assessment of graphite components weakened by rounded V-notches and subjected to static multiaxial loading. Procedia Structural Integrity, 2016, 2, 1805-1812.	0.3	3
93	Orientation Relationships and Texture of the Iron-Nitride Phase Constituents in Pulsed Plasma Nitriding. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2013, 44, 4700-4708.	1.1	2
94	Hydrogen-assisted fatigue crack growth in ferritic steels – a fractographic study. MATEC Web of Conferences, 2018, 165, 03004.	0.1	2
95	The Effect of Hydrogen on the Nanoindentation Behavior of Heat Treated 718 Alloy. Metals, 2020, 10, 1451.	1.0	2
96	Mechanical Properties of Nanomaterials Examined with a NI-AFM. , 2008, , 275-301.		0