Talal Al-Samman

List of Publications by Year
in descending order

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70 papers	5,569 citations	126907 33 h-index	106344 65 g-index
71 all docs	71 docs citations	71 times ranked	2807 citing authors

#	Article	IF	Citations
1	Effect of solute clusters on plastic instability in magnesium alloys. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2022, 835, 142685.	5.6	9
2	Synergistic effect of Y and Ca addition on the texture modification in AZ31B magnesium alloy. Acta Materialia, 2022, 233, 117990.	7.9	25
3	On the effect of strain and triaxiality on void evolution in a heterogeneous microstructure â€“ A statistical and single void study of damage in DP800 steel. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2021, 799, 140332.	5.6	22
4	Texture Selection Mechanisms during Recrystallization and Grain Growth of a Magnesium-Erbium-Zinc Alloy. Metals, 2021, 11, 171.	2.3	9
5	Hot Rolling of Magnesium Single Crystals. Metals, 2021, 11, 443.	2.3	2
6	Grain boundary co-segregation in magnesium alloys with multiple substitutional elements. Acta Materialia, 2021, 208, 116749.	7.9	57
7	Cooperative <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si3.svg"><mml:mrow><mml:mo>{</mml:mo><mml:mrow><mml:mn>10</mml:mn><mml:mover accent="true"><mml:mn>1</mml:mn><mml:mo>Â¯</mml:mo></mml:mover><mml:mn>2</mml:mn></mml:mrow><mml:mo>}</mm… xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si4.svg"><mml:mrow><mml:mo>{</mml:mo><mml:mrow><mml:mn>10</mml:mn><mml:mover accent="true"><mml:mn>1</mml:mn><mml:mo>Â¯</mml:mo></mml:mover><mml:mn>1</mml:mn></mm… Ma	2.7	3
8	Microstructureâ€“Mechanical Properties and Application of Magnesium Alloys. Metals, 2021, 11, 1958.	2.3	4
9	Efficient characterization tools for deformation-induced damage at different scales. Production Engineering, 2020, 14, 95-104.	2.3	6
10	On the Texture Weakening During Electropulse Annealing Treatment of Mg-1Ce Alloy: The Role of Nucleation and Nucleus Growth. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2020, 51, 6640-6657.	2.2	8
11	The role of mesoscopic deformation heterogeneities in plastic flow and recrystallization of a magnesium sheet alloy. Materialia, 2020, 12, 100715.	2.7	7
12	Normal and abnormal grain growth in magnesium: Experimental observations and simulations. Journal of Materials Science and Technology, 2020, 50, 257-270.	10.7	29
13	Emerging Hot Topics and Research Questions in Wrought Magnesium Alloy Development. Jom, 2020, 72, 2561-2567.	1.9	17
14	The role of recrystallization and grain growth in optimizing the sheet texture of magnesium alloys with calcium addition during annealing. Journal of Magnesium and Alloys, 2020, 8, 252-268.	11.9	44
15	On the role and alteration of grain boundaries in/during accommodating plasticity in magnesium. Acta Materialia, 2020, 191, 124-130.	7.9	6
16	Hierarchical Twinning Induced Texture Weakening in Lean Magnesium Alloys. Frontiers in Materials, 2019, 6, .	2.4	14
17	Superior microstructure and mechanical properties of a next-generation AZX310 magnesium sheet alloy. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2019, 763, 138112.	5.6	17
18	Material and Process Design for Lightweight Structures. Metals, 2019, 9, 415.	2.3	1

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19	Large-area, high-resolution characterisation and classification of damage mechanisms in dual-phase steel using deep learning. PLoS ONE, 2019, 14, e0216493.	2.5	42
20	Global and High-Resolution Damage Quantification in Dual-Phase Steel Bending Samples with Varying Stress States. Metals, 2019, 9, 319.	2.3	33
21	Impact of grain boundaries on microstructure evolution during deformation of a magnesium tricrystal. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2019, 742, 295-304.	5.6	8
22	Unraveling Recrystallization Mechanisms Governing Texture Development from Rare-Earth Element Additions to Magnesium. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2018, 49, 1809-1829.	2.2	53
23	Characteristic twinning shear in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si8.gif" overflow="scroll"><mml:mfenced open="{" close="}"><mml:mrow><mml:mn>10</mml:mn><mml:mover accent="true"><mml:mn>1</mml:mn><mml:mo stretchy="true">Â¯</mml:mo></mml:mover><mml:mn>2</mml:mn></mml:mrow></mml:mfenced></mml:math> in magnesium â€“ Experimental determination and formal description. Acta Materialia, 2017, 134, 267-273.	5.2	48
24	On the twinning shear of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll"><mml:mrow><mml:mrow><mml:mo>{</mml:mo><mml:mrow><mml:mn>10</mml:mn><mml:mover accent="true"><mml:mn>1</mml:mn><mml:mo>Â¯</mml:mo></mml:mover></mml:mrow><mml:mn>2</mml:mn></mml:mrow><mml:mo	7.9	86
25	Competitive twinning behavior in magnesium and its impact on recrystallization and texture formation. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2017, 707, 232-244.	5.6	37
26	Profuse slip transmission across twin boundaries in magnesium. Acta Materialia, 2017, 124, 397-409.	7.9	84
27	Investigation of the deformation behavior of aluminum micropillars produced by focused ion beam machining using Ga and Xe ions. Scripta Materialia, 2017, 127, 191-194.	5.2	52
28	A review on the effect of rare-earth elements on texture evolution during processing of magnesium alloys. Journal of Materials Science, 2017, 52, 1-29.	3.7	298
29	The Effect of $$ { 10ar{1}2} $$ Twin Boundary on the Evolution of Defect Substructure. Minerals, Metals and Materials Series, 2017, , 175-180.	0.4	0
30	Acoustic Emission of Deformation Twinning in Magnesium. Materials, 2016, 9, 662.	2.9	21
31	Determination of grain boundary mobility during recrystallization by statistical evaluation of electron backscatter diffraction measurements. Materials Characterization, 2016, 117, 99-112.	4.4	16
32	On the role of anomalous twinning in the plasticity of magnesium. Acta Materialia, 2016, 103, 711-723.	7.9	57
33	The role of atomic scale segregation in designing highly ductile magnesium alloys. Acta Materialia, 2016, 116, 77-94.	7.9	126
34	On the diversity of the plastic response of magnesium in plane strain compression. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 651, 63-68.	5.6	25
35	Towards microstructure-cytocompatibility relationship in ultralight Mg-4Li-1Ca (LX41) alloy for degradable implant applications. BioNanoMaterials, 2016, 17, .	1.4	2
36	New hot rolled Mg-4Li-1Ca alloy: A potential candidate for automotive and biodegradable implant applications. Materials Letters, 2016, 173, 252-256.	2.6	38

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37	Biocorrosion and biodegradation behavior of ultralight Mgâ€“4Liâ€“1Ca (LC41) alloy in simulated body fluid for degradable implant applications. Journal of Materials Science, 2015, 50, 3041-3050.	3.7	27
38	Twin recrystallization mechanisms in magnesium-rare earth alloys. Acta Materialia, 2015, 96, 111-132.	7.9	193
39	Deformation-Induced Recrystallization of Magnesium Single Crystals at Ambient Temperature. IOP Conference Series: Materials Science and Engineering, 2015, 82, 012014.	0.6	11
40	Twinning effects in deformed and annealed magnesiumâ€“neodymium alloys. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2015, 647, 91-104.	5.6	27
41	Effect of heavy metal impurities in secondary Mg alloys on the microstructure and mechanical properties during deformation. Materials & Design, 2015, 65, 983-988.	5.1	12
42	Microstructure refinement and its effect on specific strength and bio-corrosion resistance in ultralight Mgâ€“4Liâ€“1Ca (LC41) alloy by hot rolling. Journal of Alloys and Compounds, 2014, 615, 501-506.	5.5	68
43	Triggering rare earth texture modification in magnesium alloys by addition of zinc and zirconium. Acta Materialia, 2014, 67, 116-133.	7.9	237
44	On the Ductility of Magnesium Single Crystals at Ambient Temperature. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2014, 45, 3275-3281.	2.2	26
45	Mechanisms of exceptional ductility of magnesium single crystal during deformation at room temperature: Multiple twinning and dynamic recrystallization. Acta Materialia, 2014, 76, 314-330.	7.9	130
46	Superior light metals by texture engineering: Optimized aluminum and magnesium alloys for automotive applications. Acta Materialia, 2013, 61, 818-843.	7.9	945
47	Dislocation densities and prevailing slip-system types determined by X-ray line profile analysis in a textured AZ31 magnesium alloy deformed at different temperatures. Journal of Applied Crystallography, 2013, 46, 55-62.	4.5	19
48	Shear band-related recrystallization and grain growth in two rolled magnesium-rare earth alloys. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2013, 579, 50-56.	5.6	141
49	Modification of texture and microstructure of magnesium alloy extrusions by particle-stimulated recrystallization. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2013, 560, 561-566.	5.6	119
50	Softening and dynamic recrystallization in magnesium single crystals during c-axis compression. Acta Materialia, 2012, 60, 537-545.	7.9	189
51	Influence of second-phase precipitates on the texture evolution of Mgâ€“Alâ€“Zn alloys during hot deformation. Scripta Materialia, 2012, 66, 159-162.	5.2	106
52	Texture and microstructure development during hot deformation of ME20 magnesium alloy: Experiments and simulations. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2011, 528, 7915-7925.	5.6	53
53	Microstructure and mechanical properties of Mg â€“2Gd â€“3Y â€“0.6Zr alloy upon conventional and hydrostatic extrusion. Materials Letters, 2011, 65, 1726-1729.	2.6	40
54	Microstructure development and texture evolution of ME20 sheets processed by accumulative roll bonding. Materials Letters, 2011, 65, 1907-1910.	2.6	31

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55	Cluster type grain interaction model including twinning for texture prediction: Application to magnesium alloys. Acta Materialia, 2011, 59, 6938-6948.	7.9	20
56	Sheet texture modification in magnesium-based alloys by selective rare earth alloying. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2011, 528, 3809-3822.	5.6	374
57	The role of strain accommodation during the variant selection of primary twins in magnesium. Acta Materialia, 2011, 59, 2046-2056.	7.9	276
58	Mechanical properties and anisotropy of ME20 magnesium sheet produced by unidirectional and cross rolling. Materials & Design, 2011, 32, 4385-4393.	5.1	85
59	Orientation dependent slip and twinning during compression and tension of strongly textured magnesium AZ31 alloy. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2010, 527, 3450-3463.	5.6	150
60	Implementation of Mechanical Twinning in a Grain Interaction Model: Application to Magnesium Alloys. Advanced Engineering Materials, 2010, 12, 1008-1014.	3.5	6
61	Some Major Features in Texture and Anisotropy Field. Advanced Engineering Materials, 2010, 12, 967-970.	3.5	2
62	Comparative study of the deformation behavior of hexagonal magnesiumâ€“lithium alloys and a conventional magnesium AZ31 alloy. Acta Materialia, 2009, 57, 2229-2242.	7.9	180
63	Dynamic recrystallization during high temperature deformation of magnesium. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 490, 411-420.	5.6	509
64	Room temperature formability of a magnesium AZ31 alloy: Examining the role of texture on the deformation mechanisms. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 488, 406-414.	5.6	235
65	Influence of strain path change on the rolling behavior of twin roll cast magnesium alloy. Scripta Materialia, 2008, 59, 760-763.	5.2	58
66	Deformation Conditions and Stability of the Basal Texture in Magnesium. Materials Science Forum, 2007, 539-543, 3401-3406.	0.3	12
67	Influence of Starting Textures on the Development of Texture and Microstructure during Large Strain Hot Rolling of Pure Magnesium. Solid State Phenomena, 2005, 105, 201-206.	0.3	3
68	Uniaxial and Plane Strain Compression Behaviour of Magnesium Alloy AZ31: A Comparative Study. Materials Science Forum, 0, 550, 229-234.	0.3	13
69	Recrystallization and Grain Growth Related Texture and Microstructure Evolution in Two Rolled Magnesium Rare-Earth Alloys. Materials Science Forum, 0, 765, 527-531.	0.3	12
70	Effect of Rolling on Microstructure and Room Temperature Tensile Properties of Newly Developed Mg-4Li-1Ca Alloy. Advanced Materials Research, 0, 922, 537-542.	0.3	4