Talal Al-Samman

List of Publications by Year
in descending order

70	5,569	33	65
papers	citations	h-index	g-index
		126907	106344

71	71	71	2807
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Superior light metals by texture engineering: Optimized aluminum and magnesium alloys for automotive applications. Acta Materialia, 2013, 61, 818-843.	7.9	945
2	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
3	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
4	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
5	The role of strain accommodation during the variant selection of primary twins in magnesium. Acta Materialia, 2011, 59, 2046-2056.	7.9	276
6	Triggering rare earth texture modification in magnesium alloys by addition of zinc and zirconium. Acta Materialia, 2014, 67, 116-133.	7.9	237
7	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
8	Twin recrystallization mechanisms in magnesium-rare earth alloys. Acta Materialia, 2015, 96, 111-132.	7.9	193
9	Softening and dynamic recrystallization in magnesium single crystals during c-axis compression. Acta Materialia, 2012, 60, 537-545.	7.9	189
10	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
11	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
12	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
13	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
14	The role of atomic scale segregation in designing highly ductile magnesium alloys. Acta Materialia, 2016, 116, 77-94.	7.9	126
15	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
16	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
17	Mechanical properties and anisotropy of ME20 magnesium sheet produced by unidirectional and cross rolling. Materials & Design, 2011, 32, 4385-4393.	5.1	85
18	Profuse slip transmission across twin boundaries in magnesium. Acta Materialia, 2017, 124, 397-409.	7.9	84

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19	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
20	Influence of strain path change on the rolling behavior of twin roll cast magnesium alloy. Scripta Materialia, 2008, 59, 760-763.	5.2	58
21	On the role of anomalous twinning in the plasticity of magnesium. Acta Materialia, 2016, 103, 711-723.	7.9	57
22	Grain boundary co-segregation in magnesium alloys with multiple substitutional elements. Acta Materialia, 2021, 208, 116749.	7.9	57
23	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
24	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
25	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
26	Characteristic dislocation substructure 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> twins in hexagonal metals. Scripta Materialia, 2018, 143, 81-85.	5.2	48
27	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
28	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
29	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
30	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
31	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
32	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:mrow><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: in magnesium â€“ Experimental determination and formal description. Acta Materialia, 2017, 134, 267-273.	7.9	36
33	Global and High-Resolution Damage Quantification in Dual-Phase Steel Bending Samples with Varying Stress States. Metals, 2019, 9, 319.	2.3	33
34	Microstructure development and texture evolution of ME20 sheets processed by accumulative roll bonding. Materials Letters, 2011, 65, 1907-1910.	2.6	31
35	Normal and abnormal grain growth in magnesium: Experimental observations and simulations. Journal of Materials Science and Technology, 2020, 50, 257-270.	10.7	29
36	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

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37	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
38	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
39	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
40	Synergistic effect of Y and Ca addition on the texture modification in AZ31B magnesium alloy. Acta Materialia, 2022, 233, 117990.	7.9	25
41	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
42	Acoustic Emission of Deformation Twinning in Magnesium. Materials, 2016, 9, 662.	2.9	21
43	Cluster type grain interaction model including twinning for texture prediction: Application to magnesium alloys. Acta Materialia, 2011, 59, 6938-6948.	7.9	20
44	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
45	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
46	Emerging Hot Topics and Research Questions in Wrought Magnesium Alloy Development. Jom, 2020, 72, 2561-2567.	1.9	17
47	Determination of grain boundary mobility during recrystallization by statistical evaluation of electron backscatter diffraction measurements. Materials Characterization, 2016, 117, 99-112.	4.4	16
48	Hierarchical Twinning Induced Texture Weakening in Lean Magnesium Alloys. Frontiers in Materials, 2019, 6, .	2.4	14
49	Uniaxial and Plane Strain Compression Behaviour of Magnesium Alloy AZ31: A Comparative Study. Materials Science Forum, 0, 550, 229-234.	0.3	13
50	Deformation Conditions and Stability of the Basal Texture in Magnesium. Materials Science Forum, 2007, 539-543, 3401-3406.	0.3	12
51	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
52	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
53	Deformation-Induced Recrystallization of Magnesium Single Crystals at Ambient Temperature. IOP Conference Series: Materials Science and Engineering, 2015, 82, 012014.	0.6	11
54	Texture Selection Mechanisms during Recrystallization and Grain Growth of a Magnesium-Erbium-Zinc Alloy. Metals, 2021, 11, 171.	2.3	9

#	ARTICLE	IF	CITATIONS
55	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
56	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
57	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
58	The role of mesoscopic deformation heterogeneities in plastic flow and recrystallization of a magnesium sheet alloy. Materialia, 2020, 12, 100715.	2.7	7
59	Implementation of Mechanical Twinning in a Grain Interaction Model: Application to Magnesium Alloys. Advanced Engineering Materials, 2010, 12, 1008-1014.	3.5	6
60	Efficient characterization tools for deformation-induced damage at different scales. Production Engineering, 2020, 14, 95-104.	2.3	6
61	On the role and alteration of grain boundaries in/during accommodating plasticity in magnesium. Acta Materialia, 2020, 191, 124-130.	7.9	6
62	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
63	Microstructureâ€"Mechanical Properties and Application of Magnesium Alloys. Metals, 2021, 11, 1958.	2.3	4
64	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
65	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>}</mml:m 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></mml: Ma	2.7	3
66	Some Major Features in Texture and Anisotropy Field. Advanced Engineering Materials, 2010, 12, 967-970.	3.5	2
67	Towards microstructure-cytocompatibility relationship in ultralight Mg-4Li-1Ca (LX41) alloy for degradable implant applications. BioNanoMaterials, 2016, 17, .	1.4	2
68	Hot Rolling of Magnesium Single Crystals. Metals, 2021, 11, 443.	2.3	2
69	Material and Process Design for Lightweight Structures. Metals, 2019, 9, 415.	2.3	1
70	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