

# Talal Al-Samman

## List of Publications by Year in descending order

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70  
papers

5,569  
citations

126708

33  
h-index

106150

65  
g-index

71  
all docs

71  
docs citations

71  
times ranked

2807  
citing authors

#	ARTICLE	IF	CITATIONS
1	Superior light metals by texture engineering: Optimized aluminum and magnesium alloys for automotive applications. <i>Acta Materialia</i> , 2013, 61, 818-843.	3.8	945
2	Dynamic recrystallization during high temperature deformation of magnesium. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2008, 490, 411-420.	2.6	509
3	Sheet texture modification in magnesium-based alloys by selective rare earth alloying. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2011, 528, 3809-3822.	2.6	374
4	A review on the effect of rare-earth elements on texture evolution during processing of magnesium alloys. <i>Journal of Materials Science</i> , 2017, 52, 1-29.	1.7	298
5	The role of strain accommodation during the variant selection of primary twins in magnesium. <i>Acta Materialia</i> , 2011, 59, 2046-2056.	3.8	276
6	Triggering rare earth texture modification in magnesium alloys by addition of zinc and zirconium. <i>Acta Materialia</i> , 2014, 67, 116-133.	3.8	237
7	Room temperature formability of a magnesium AZ31 alloy: Examining the role of texture on the deformation mechanisms. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2008, 488, 406-414.	2.6	235
8	Twin recrystallization mechanisms in magnesium-rare earth alloys. <i>Acta Materialia</i> , 2015, 96, 111-132.	3.8	193
9	Softening and dynamic recrystallization in magnesium single crystals during c-axis compression. <i>Acta Materialia</i> , 2012, 60, 537-545.	3.8	189
10	Comparative study of the deformation behavior of hexagonal magnesium-lithium alloys and a conventional magnesium AZ31 alloy. <i>Acta Materialia</i> , 2009, 57, 2229-2242.	3.8	180
11	Orientation dependent slip and twinning during compression and tension of strongly textured magnesium AZ31 alloy. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2010, 527, 3450-3463.	2.6	150
12	Shear band-related recrystallization and grain growth in two rolled magnesium-rare earth alloys. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2013, 579, 50-56.	2.6	141
13	Mechanisms of exceptional ductility of magnesium single crystal during deformation at room temperature: Multiple twinning and dynamic recrystallization. <i>Acta Materialia</i> , 2014, 76, 314-330.	3.8	130
14	The role of atomic scale segregation in designing highly ductile magnesium alloys. <i>Acta Materialia</i> , 2016, 116, 77-94.	3.8	126
15	Modification of texture and microstructure of magnesium alloy extrusions by particle-stimulated recrystallization. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2013, 560, 561-566.	2.6	119
16	Influence of second-phase precipitates on the texture evolution of Mg-Al-Zn alloys during hot deformation. <i>Scripta Materialia</i> , 2012, 66, 159-162.	2.6	106
17	Mechanical properties and anisotropy of ME20 magnesium sheet produced by unidirectional and cross rolling. <i>Materials &amp; Design</i> , 2011, 32, 4385-4393.	5.1	85
18	Profuse slip transmission across twin boundaries in magnesium. <i>Acta Materialia</i> , 2017, 124, 397-409.	3.8	84

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19	Microstructure refinement and its effect on specific strength and bio-corrosion resistance in ultralight Mg-4Li-1Ca (LC41) alloy by hot rolling. <i>Journal of Alloys and Compounds</i> , 2014, 615, 501-506.	2.8	68
20	Influence of strain path change on the rolling behavior of twin roll cast magnesium alloy. <i>Scripta Materialia</i> , 2008, 59, 760-763.	2.6	58
21	On the role of anomalous twinning in the plasticity of magnesium. <i>Acta Materialia</i> , 2016, 103, 711-723.	3.8	57
22	Grain boundary co-segregation in magnesium alloys with multiple substitutional elements. <i>Acta Materialia</i> , 2021, 208, 116749.	3.8	57
23	Texture and microstructure development during hot deformation of ME20 magnesium alloy: Experiments and simulations. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2011, 528, 7915-7925.	2.6	53
24	Unraveling Recrystallization Mechanisms Governing Texture Development from Rare-Earth Element Additions to Magnesium. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2018, 49, 1809-1829.	1.1	53
25	Investigation of the deformation behavior of aluminum micropillars produced by focused ion beam machining using Ga and Xe ions. <i>Scripta Materialia</i> , 2017, 127, 191-194.	2.6	52
26	Characteristic dislocation substructure in twins in hexagonal metals. <i>Scripta Materialia</i> , 2018, 143, 81-85.	2.6	48
27	The role of recrystallization and grain growth in optimizing the sheet texture of magnesium alloys with calcium addition during annealing. <i>Journal of Magnesium and Alloys</i> , 2020, 8, 252-268.	5.5	44
28	Large-area, high-resolution characterisation and classification of damage mechanisms in dual-phase steel using deep learning. <i>PLoS ONE</i> , 2019, 14, e0216493.	1.1	42
29	Microstructure and mechanical properties of Mg-2Gd-3Y-0.6Zr alloy upon conventional and hydrostatic extrusion. <i>Materials Letters</i> , 2011, 65, 1726-1729.	1.3	40
30	New hot rolled Mg-4Li-1Ca alloy: A potential candidate for automotive and biodegradable implant applications. <i>Materials Letters</i> , 2016, 173, 252-256.	1.3	38
31	Competitive twinning behavior in magnesium and its impact on recrystallization and texture formation. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017, 707, 232-244.	2.6	37
32	On the twinning shear of magnesium. <i>Acta Materialia</i> , 2017, 134, 267-273.	2.6	36
33	Global and High-Resolution Damage Quantification in Dual-Phase Steel Bending Samples with Varying Stress States. <i>Metals</i> , 2019, 9, 319.	1.0	33
34	Microstructure development and texture evolution of ME20 sheets processed by accumulative roll bonding. <i>Materials Letters</i> , 2011, 65, 1907-1910.	1.3	31
35	Normal and abnormal grain growth in magnesium: Experimental observations and simulations. <i>Journal of Materials Science and Technology</i> , 2020, 50, 257-270.	5.6	29
36	Biocorrosion and biodegradation behavior of ultralight Mg-4Li-1Ca (LC41) alloy in simulated body fluid for degradable implant applications. <i>Journal of Materials Science</i> , 2015, 50, 3041-3050.	1.7	27

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37	Twinning effects in deformed and annealed magnesium-neodymium alloys. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2015, 647, 91-104.	2.6	27
38	On the Ductility of Magnesium Single Crystals at Ambient Temperature. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2014, 45, 3275-3281.	1.1	26
39	On the diversity of the plastic response of magnesium in plane strain compression. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2016, 651, 63-68.	2.6	25
40	Synergistic effect of Y and Ca addition on the texture modification in AZ31B magnesium alloy. <i>Acta Materialia</i> , 2022, 233, 117990.	3.8	25
41	On the effect of strain and triaxiality on void evolution in a heterogeneous microstructure – A statistical and single void study of damage in DP800 steel. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2021, 799, 140332.	2.6	22
42	Acoustic Emission of Deformation Twinning in Magnesium. <i>Materials</i> , 2016, 9, 662.	1.3	21
43	Cluster type grain interaction model including twinning for texture prediction: Application to magnesium alloys. <i>Acta Materialia</i> , 2011, 59, 6938-6948.	3.8	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. <i>Journal of Applied Crystallography</i> , 2013, 46, 55-62.	1.9	19
45	Superior microstructure and mechanical properties of a next-generation AZX310 magnesium sheet alloy. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2019, 763, 138112.	2.6	17
46	Emerging Hot Topics and Research Questions in Wrought Magnesium Alloy Development. <i>Jom</i> , 2020, 72, 2561-2567.	0.9	17
47	Determination of grain boundary mobility during recrystallization by statistical evaluation of electron backscatter diffraction measurements. <i>Materials Characterization</i> , 2016, 117, 99-112.	1.9	16
48	Hierarchical Twinning Induced Texture Weakening in Lean Magnesium Alloys. <i>Frontiers in Materials</i> , 2019, 6, .	1.2	14
49	Uniaxial and Plane Strain Compression Behaviour of Magnesium Alloy AZ31: A Comparative Study. <i>Materials Science Forum</i> , 0, 550, 229-234.	0.3	13
50	Deformation Conditions and Stability of the Basal Texture in Magnesium. <i>Materials Science Forum</i> , 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. <i>Materials Science Forum</i> , 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. <i>Materials &amp; Design</i> , 2015, 65, 983-988.	5.1	12
53	Deformation-Induced Recrystallization of Magnesium Single Crystals at Ambient Temperature. <i>IOP Conference Series: Materials Science and Engineering</i> , 2015, 82, 012014.	0.3	11
54	Texture Selection Mechanisms during Recrystallization and Grain Growth of a Magnesium-Erbium-Zinc Alloy. <i>Metals</i> , 2021, 11, 171.	1.0	9

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55	Effect of solute clusters on plastic instability in magnesium alloys. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2022, 835, 142685.	2.6	9
56	Impact of grain boundaries on microstructure evolution during deformation of a magnesium tricrystal. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2019, 742, 295-304.	2.6	8
57	On the Texture Weakening During Electropulse Annealing Treatment of Mg-1Ce Alloy: The Role of Nucleation and Nucleus Growth. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2020, 51, 6640-6657.	1.1	8
58	The role of mesoscopic deformation heterogeneities in plastic flow and recrystallization of a magnesium sheet alloy. <i>Materialia</i> , 2020, 12, 100715.	1.3	7
59	Implementation of Mechanical Twinning in a Grain Interaction Model: Application to Magnesium Alloys. <i>Advanced Engineering Materials</i> , 2010, 12, 1008-1014.	1.6	6
60	Efficient characterization tools for deformation-induced damage at different scales. <i>Production Engineering</i> , 2020, 14, 95-104.	1.1	6
61	On the role and alteration of grain boundaries in/during accommodating plasticity in magnesium. <i>Acta Materialia</i> , 2020, 191, 124-130.	3.8	6
62	Effect of Rolling on Microstructure and Room Temperature Tensile Properties of Newly Developed Mg-4Li-1Ca Alloy. <i>Advanced Materials Research</i> , 0, 922, 537-542.	0.3	4
63	Microstructureâ€œMechanical Properties and Application of Magnesium Alloys. <i>Metals</i> , 2021, 11, 1958.	1.0	4
64	Influence of Starting Textures on the Development of Texture and Microstructure during Large Strain Hot Rolling of Pure Magnesium. <i>Solid State Phenomena</i> , 2005, 105, 201-206.	0.3	3
65	Cooperative Grain Boundary Sliding in Magnesium Alloys. <i>Metals</i> , 2021, 11, 1958.	1.3	3
66	Some Major Features in Texture and Anisotropy Field. <i>Advanced Engineering Materials</i> , 2010, 12, 967-970.	1.6	2
67	Towards microstructure-cytocompatibility relationship in ultralight Mg-4Li-1Ca (LX41) alloy for degradable implant applications. <i>BioNanoMaterials</i> , 2016, 17, .	1.4	2
68	Hot Rolling of Magnesium Single Crystals. <i>Metals</i> , 2021, 11, 443.	1.0	2
69	Material and Process Design for Lightweight Structures. <i>Metals</i> , 2019, 9, 415.	1.0	1
70	The Effect of $\{10\bar{0}\}$ Twin Boundary on the Evolution of Defect Substructure. <i>Minerals, Metals and Materials Series</i> , 2017, , 175-180.	0.3	0