Shao-Kang Guan

List of Publications by Year
in descending order

113 papers	4,455 citations	94433 37 h-index	114465 63 g-index
115 all docs	115 docs citations	115 times ranked	2822 citing authors

#	Article	IF	Citations
1	Characterization and degradation behavior of AZ31 alloy surface modified by bone-like hydroxyapatite for implant applications. Applied Surface Science, 2009, 255, 6433-6438.	6.1	283
2	Advances in coatings on biodegradable magnesium alloys. Journal of Magnesium and Alloys, 2020, 8, 42-65.	11.9	274
3	Fundamental Theory of Biodegradable Metalsâ€"Definition, Criteria, and Design. Advanced Functional Materials, 2019, 29, 1805402.	14.9	226
4	Degradation mechanism of micro-arc oxidation coatings on biodegradable Mg-Ca alloys: The influence of porosity. Journal of Alloys and Compounds, 2017, 695, 2464-2476.	5.5	158
5	Comparative in vitro study on binary Mg-RE (Sc, Y, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb and Lu) alloy systems. Acta Biomaterialia, 2020, 102, 508-528.	8.3	135
6	Corrosion of magnesium alloy AZ31: The influence of bicarbonate, sulphate, hydrogen phosphate and dihydrogen phosphate ions in saline solution. Corrosion Science, 2014, 86, 171-182.	6.6	126
7	Corrosion resistance and antibacterial activity of zinc-loaded montmorillonite coatings on biodegradable magnesium alloy AZ31. Acta Biomaterialia, 2019, 98, 196-214.	8.3	114
8	In vivo degradation behavior of Ca-deficient hydroxyapatite coated Mgâ€"Znâ€"Ca alloy for bone implant application. Colloids and Surfaces B: Biointerfaces, 2011, 88, 254-259.	5.0	107
9	The microstructure and properties of cyclic extrusion compression treated Mgâ€"Znâ€"Yâ€"Nd alloy for vascular stent application. Journal of the Mechanical Behavior of Biomedical Materials, 2012, 8, 1-7.	3.1	107
10	Self-degradation of micro-arc oxidation/chitosan composite coating on Mg-4Li-1Ca alloy. Surface and Coatings Technology, 2018, 344, 1-11.	4.8	104
11	Facile route to bulk ultrafine-grain steels for high strength and ductility. Nature, 2021, 590, 262-267.	27.8	98
12	InÂvitro corrosion of micro-arc oxidation coating on Mg-1Li-1Ca alloy â€" The influence of intermetallic compound Mg2Ca. Journal of Alloys and Compounds, 2018, 764, 250-260.	5.5	95
13	Advances in coatings on magnesium alloys for cardiovascular stents â€" A review. Bioactive Materials, 2021, 6, 4729-4757.	15.6	93
14	Corrosion resistance of in-situ growth of nano-sized Mg(OH)2 on micro-arc oxidized magnesium alloy AZ31â€"Influence of EDTA. Journal of Materials Science and Technology, 2019, 35, 1088-1098.	10.7	86
15	Enhanced in Vitro and in Vivo Performance of Mgâ€"Znâ€"Yâ€"Nd Alloy Achieved with APTES Pretreatment for Drug-Eluting Vascular Stent Application. ACS Applied Materials & Interfaces, 2016, 8, 17842-17858.	8.0	85
16	Formation mechanism of Ca-deficient hydroxyapatite coating on Mgâ€"Znâ€"Ca alloy for orthopaedic implant. Applied Surface Science, 2014, 307, 92-100.	6.1	84
17	Exfoliation corrosion of extruded Mg-Li-Ca alloy. Journal of Materials Science and Technology, 2018, 34, 1550-1557.	10.7	84
18	Enhancing biocompatibility and corrosion resistance of biodegradable Mg-Zn-Y-Nd alloy by preparing PDA/HA coating for potential application of cardiovascular biomaterials. Materials Science and Engineering C, 2020, 109, 110607.	7.3	83

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19	Fabrication of chitosan/magnesium phosphate composite coating and the in vitro degradation properties of coated magnesium alloy. Materials Letters, 2012, 73, 59-61.	2.6	82
20	Multifunctional MgF2/Polydopamine Coating on Mg Alloy for Vascular Stent Application. Journal of Materials Science and Technology, 2015, 31, 733-743.	10.7	80
21	Advance in Antibacterial Magnesium Alloys and Surface Coatings on Magnesium Alloys: A Review. Acta Metallurgica Sinica (English Letters), 2020, 33, 615-629.	2.9	80
22	Synthesis and properties of a bio-composite coating formed on magnesium alloy by one-step method of micro-arc oxidation. Journal of Alloys and Compounds, 2014, 590, 247-253.	5.5	73
23	Microstructure and corrosion properties of as sub-rapid solidification Mgâ€“Znâ€“Yâ€“Nd alloy in dynamic simulated body fluid for vascular stent application. Journal of Materials Science: Materials in Medicine, 2010, 21, 2001-2008.	3.6	62
24	In vitro corrosion resistance of a layer-by-layer assembled DNA coating on magnesium alloy. Applied Surface Science, 2018, 457, 49-58.	6.1	57
25	Effects of Nd on microstructures and properties of extruded Mgâ€“2Znâ€“0.46Yâ€“xNd alloys for stent application. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2011, 176, 1673-1678.	3.5	53
26	Corrosion resistance of Mg(OH)2/Mgâ€“Al-layered double hydroxide coatings on magnesium alloy AZ31: influence of hydrolysis degree of silane. Rare Metals, 2019, 38, 629-641.	7.1	52
27	Processing and properties of magnesium alloy micro-tubes for biodegradable vascular stents. Materials Science and Engineering C, 2018, 90, 504-513.	7.3	49
28	Investigation of Mgâ€“Znâ€“Yâ€“Nd alloy for potential application of biodegradable esophageal stent material. Bioactive Materials, 2020, 5, 1-8.	15.6	49
29	Corrosion resistance of nanostructured magnesium hydroxide coating on magnesium alloy AZ31: influence of EDTA. Rare Metals, 2019, 38, 520-531.	7.1	45
30	Corrosion resistance and drug release profile of gentamicin-loaded polyelectrolyte multilayers on magnesium alloys: Effects of heat treatment. Journal of Colloid and Interface Science, 2019, 547, 309-317.	9.4	43
31	Characterization and cytocompatibility of polydopamine on MAOâ€¢HA coating supported on Mgâ€¢Znâ€¢Ca alloy. Surface and Interface Analysis, 2017, 49, 1115-1123.	1.8	42
32	Mg-Zn-Y-Nd coated with citric acid and dopamine by layer-by-layer self-assembly to improve surface biocompatibility. Science China Technological Sciences, 2018, 61, 1228-1237.	4.0	42
33	Corrosion fatigue of the extruded Mgâ€“Znâ€“Yâ€“Nd alloy in simulated body fluid. Journal of Magnesium and Alloys, 2020, 8, 231-240.	11.9	42
34	Microstructure and mechanical properties of Tiâ€“Zrâ€“Cr biomedical alloys. Materials Science and Engineering C, 2015, 51, 148-152.	7.3	41
35	Characterization and corrosion property of nano-rod-like HA on fluoride coating supported on Mg-Zn-Ca alloy. Bioactive Materials, 2017, 2, 63-70.	15.6	39
36	Fabrication and characterization of biodegradable Mg-Zn-Y-Nd-Ag alloy: Microstructure, mechanical properties, corrosion behavior and antibacterial activities. Bioactive Materials, 2018, 3, 225-235.	15.6	38

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37	Surface modification of the biodegradable cardiovascular stent material Mgâ€“Znâ€“Yâ€“Nd alloy via conjugating REDV peptide for better endothelialization. Journal of Materials Research, 2018, 33, 4123-4133.	2.6	38
38	In Vitro Corrosion and Antibacterial Performance of Micro-Arc Oxidation Coating on AZ31 Magnesium Alloy: Effects of Tannic Acid. Journal of the Electrochemical Society, 2018, 165, C821-C829.	2.9	38
39	Corrosion and Wear Resistance of Microâ€Arc Oxidation Composite Coatings on Magnesium Alloy AZ31â€"The Influence of Inclusions of Carbon Spheres. Advanced Engineering Materials, 2019, 21, 1900446.	3.5	38
40	Microstructure and properties of Al0.3CrFe1.5MnNi0.5Ti x and Al0.3CrFe1.5MnNi0.5Si x high-entropy alloys. Rare Metals, 2014, 33, 149-154.	7.1	37
41	Tailoring of cardiovascular stent material surface by immobilizing exosomes for better pro-endothelialization function. Colloids and Surfaces B: Biointerfaces, 2020, 189, 110831.	5.0	37
42	Microstructure, mechanical properties and deformation mechanisms of an as-cast Mgâ€“Znâ€“Yâ€“Ndâ€“Zr alloy for stent applications. Journal of Materials Science and Technology, 2019, 35, 1211-1217.	10.7	34
43	In vitro corrosion of pure Mg in phosphate buffer solutionâ€"Influences of isoelectric point and molecular structure of amino acids. Materials Science and Engineering C, 2019, 105, 110042.	7.3	33
44	In vitro corrosion of magnesium alloy AZ31 â€" a synergetic influence of glucose and Tris. Frontiers of Materials Science, 2018, 12, 184-197.	2.2	32
45	Application of 3D Printing Technology in Bone Tissue Engineering: A Review. Current Drug Delivery, 2021, 18, 847-861.	1.6	29
46	The increased ratio of Mg2+/Ca2+ from degrading magnesium alloys directs macrophage fate for functionalized growth of endothelial cells. Smart Materials in Medicine, 2022, 3, 188-198.	6.7	29
47	A robust calcium carbonate (CaCO3) coating on biomedical MgZnCa alloy for promising corrosion protection. Corrosion Science, 2022, 198, 110124.	6.6	29
48	Effect of different processings on mechanical property and corrosion behavior in simulated body fluid of Mg-Zn-Y-Nd alloy for cardiovascular stent application. Frontiers of Materials Science, 2014, 8, 256-263.	2.2	27
49	The microstructure and corrosion resistance of biological Mgâ€“Znâ€“Ca alloy processed by high-pressure torsion and subsequently annealing. Journal of Materials Research, 2017, 32, 1061-1072.	2.6	27
50	Microstructure and texture evolution of fine-grained Mg-Zn-Y-Nd alloy micro-tubes for biodegradable vascular stents processed by hot extrusion and rapid cooling. Journal of Magnesium and Alloys, 2020, 8, 873-882.	11.9	27
51	Microstructure and mechanical properties of a newly developed low Young's modulus Tiâ€“15Zrâ€“5Crâ€“2Al biomedical alloy. Materials Science and Engineering C, 2017, 72, 536-542.	7.3	26
52	Sulfur Contents in Sulfonated Hyaluronic Acid Direct the Cardiovascular Cells Fate. ACS Applied Materials & Interfaces, 2020, 12, 46827-46836.	8.0	26
53	Influence of surface charge density on ligand-metal bonding: A DFT study of NH3 and HCOOH on Mg (0â€¯0â€¯0â€¯1) surface. Applied Surface Science, 2019, 470, 893-898.	6.1	23
54	Sol-gel coating loaded with inhibitor on ZE21B Mg alloy for improving corrosion resistance and endothelialization aiming at potential cardiovascular application. Colloids and Surfaces B: Biointerfaces, 2021, 207, 111993.	5.0	23

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55	Adsorption of arginine, glycine and aspartic acid on Mg and Mg-based alloy surfaces: A first-principles study. Applied Surface Science, 2017, 409, 149-155.	6.1	22
56	Microstructural evolution and mechanical properties of nanostructured Cu/Ni multilayer fabricated by accumulative roll bonding. Journal of Alloys and Compounds, 2020, 819, 152956.	5.5	22
57	Conjugating heparin, Argâ€“Gluâ€“Aspâ€“Val peptide, and anti-CD34 to the silanic Mgâ€“Znâ€“Yâ€“Nd alloy for better endothelialization. Journal of Biomaterials Applications, 2020, 35, 158-168.	2.4	22
58	Effects of degradation products of biomedical magnesium alloys on nitric oxide release from vascular endothelial cells. Medical Gas Research, 2019, 9, 153.	2.3	22
59	Electrophoretic deposited boron nitride nanosheets-containing chitosan-based coating on Mg alloy for better corrosion resistance, biocompatibility and antibacterial properties. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2022, 638, 128303.	4.7	22
60	In vitro corrosion properties of HTHEed Mg-Zn-Y-Nd alloy microtubes for stent applications: Influence of second phase particles and crystal orientation. Journal of Magnesium and Alloys, 2022, 10, 1286-1295.	11.9	21
61	Investigation on the in vitro cytocompatibility of Mg-Zn-Y-Nd-Zr alloys as degradable orthopaedic implant materials. Journal of Materials Science: Materials in Medicine, 2018, 29, 44.	3.6	20
62	Influences of laser surface melting on microstructure, mechanical properties and corrosion resistance of dual-phase Crâ€“Feâ€“Coâ€“Niâ€“Al high entropy alloys. Journal of Alloys and Compounds, 2020, 826, 154100.	5.5	20
63	A biodegradable magnesium alloy vascular stent structure: Design, optimisation and evaluation. Acta Biomaterialia, 2022, 142, 402-412.	8.3	20
64	Electrochemical polymerization of dopamine with/without subsequent PLLA coating on Mg-Zn-Y-Nd alloy. Materials Letters, 2019, 252, 202-206.	2.6	19
65	Preparation of functional coating on magnesium alloy with hydrophilic polymers and bioactive peptides for improved corrosion resistance and biocompatibility. Journal of Magnesium and Alloys, 2022, 10, 1957-1971.	11.9	19
66	Biocorrosion of coated Mgâ€“Znâ€“Ca alloy under constant compressive stress close to that of human tibia. Materials Letters, 2012, 70, 174-176.	2.6	17
67	Optimizing strength and ductility of Alâ€“7Siâ€“0.4â€‘Mg foundry alloy: Role of Cu and Sc addition. Journal of Alloys and Compounds, 2019, 810, 151944.	5.5	16
68	In vitro and in vivo assessment of the biocompatibility of an paclitaxel-eluting poly-l-lactide-coated Mg-Zn-Y-Nd alloy stent in the intestine. Materials Science and Engineering C, 2019, 105, 110087.	7.3	16
69	Influence of the second phase on protein adsorption on biodegradable Mg alloysâ€™ surfaces: Comparative experimental and molecular dynamics simulation studies. Acta Biomaterialia, 2021, 129, 323-332.	8.3	16
70	Investigation of Mgâ€“xLiâ€“Zn alloys for potential application of biodegradable bone implant materials. Journal of Materials Science: Materials in Medicine, 2021, 32, 43.	3.6	15
71	Tailoring ZE21B Alloy with Nature-Inspired Extracellular Matrix Secreted by Micro-Patterned Smooth Muscle Cells and Endothelial Cells to Promote Surface Biocompatibility. International Journal of Molecular Sciences, 2022, 23, 3180.	4.1	14
72	Protein conformation and electric attraction adsorption mechanisms on anodized magnesium alloy by molecular dynamics simulations. Journal of Magnesium and Alloys, 2022, 10, 3143-3155.	11.9	12

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73	Fabrication of Citric Acid/RGD Multilayers on Mgâ€Znâ€Yâ€Nd Alloy via Layerâ€byâ€Layer Selfâ€Assembly for Promoting Surface Biocompatibility. Advanced Materials Interfaces, 2021, 8, 2002241.	3.7	12
74	Improved corrosion resistance and cytocompatibility of Mgâ€“Znâ€“Yâ€“Nd alloy by the electrografted polycaprolactone coating. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2021, 629, 127471.	4.7	12
75	Effects of Al on Microstructure and High-Temperature Wear Properties of Austenitic Heat-Resistant Steel. Journal of Iron and Steel Research International, 2012, 19, 62-66.	2.8	11
76	Hydrogen-bonding regulated supramolecular chirality with controllable biostability. Nano Research, 2022, 15, 2226-2234.	10.4	11
77	Stronger Adsorption of Phosphorothioate DNA Oligonucleotides on Graphene Oxide by van der Waals Forces. Langmuir, 2020, 36, 13708-13715.	3.5	10
78	Polyâ€Cytosine Deoxyribonucleic Acid Strongly Anchoring on Graphene Oxide Due to Flexible Backbone Phosphate Interactions. Advanced Materials Interfaces, 2021, 8, 2001798.	3.7	10
79	Tailoring of Biodegradable Magnesium Alloy Surface with Schiff Base Coating via Electrostatic Spraying for Better Corrosion Resistance. Metals, 2022, 12, 471.	2.3	10
80	High Specific Strength and Improved Ductility of Bulk (Mg_{0.65}Cu_{0.25}Gd_{0.1})<SUB>100−<I>x Metallic Glass Composites. Materials Transactions, 2007, 48, 3193-3196.	1.2	9
81	Influence of Mg3N2 powder on microstructures and mechanical properties of AZ31 Mg alloy. Central South University, 2008, 15, 459-462.	0.5	9
82	Characterization and corrosion properties of Tiâ€O/HA composite coatings on Mgâ€Zn alloy. Surface and Interface Analysis, 2011, 43, 1575-1580.	1.8	9
83	Effect of Solution Pretreatment on Homogeneity and Corrosion Resistance of Biomedical Mgâ€“Znâ€“Ca Alloy Processed by High Pressure Torsion. Advanced Engineering Materials, 2017, 19, 1600326.	3.5	9
84	Microstructure, mechanical and corrosion properties of Mgâ€“Znâ€“Srâ€“Ca alloys for use as potential biodegradable implant materials. Corrosion Engineering Science and Technology, 2020, 55, 739-746.	1.4	9
85	Microstructural Evolution and Mechanical Properties of Graphene Oxide-Reinforced Ti6Al4V Matrix Composite Fabricated Using Spark Plasma Sintering. Nanomaterials, 2021, 11, 1440.	4.1	9
86	Rapid screening alloying elements for improved corrosion resistance on the Mg(0001) surface using first principles calculations. Physical Chemistry Chemical Physics, 2021, 23, 26887-26901.	2.8	9
87	Microstructure and properties of biodegradable Mgâ€“Znâ€“Y-Nd alloy micro-tubes prepared by an improved method. Journal of Alloys and Compounds, 2020, 835, 155369.	5.5	8
88	Synthesis and degradation behaviour of Zn-modified coating on Mg alloy. Surface Engineering, 2021, 37, 963-971.	2.2	8
89	Zn content mediated fibrinogen adsorption on biodegradable Mg-Zn alloys surfaces. Journal of Magnesium and Alloys, 2021, 9, 2145-2154.	11.9	8
90	Optimizing structural design on biodegradable magnesium alloy vascular stent for reducing strut thickness and raising radial strength. Materials and Design, 2022, 220, 110843.	7.0	8

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91	Micro-patterned hydroxyapatite/silk fibroin coatings on Mg-Zn-Y-Nd-Zr alloys for better corrosion resistance and cell behavior guidance. Frontiers of Materials Science, 2020, 14, 413-425.	2.2	7
92	Corrosion protection of Mgâ€Znâ€Yâ€Nd alloy by flowerâ€like nanostructured <scp>TiO₂</scp> film for vascular stent application. Journal of Chemical Technology and Biotechnology, 2013, 88, 2062-2066.	3.2	6
93	Preparation of Biodegradable Mg/Î²-TCP Biofunctional Gradient Materials by Friction Stir Processing and Pulse Reverse Current Electrodeposition. Acta Metallurgica Sinica (English Letters), 2020, 33, 103-114.	2.9	6
94	Effects of alloy elements on adsorption of fibrinogen on biodegradable magnesium alloys surfaces: The MD simulations and experimental studies. Applied Surface Science, 2020, 512, 145725.	6.1	6
95	Correlation between jerky flow and jerky dynamics in a nanoscratch on a metallic glass film. Science China: Physics, Mechanics and Astronomy, 2020, 63, 1.	5.1	6
96	Quantifying the effects of Sn on <i>Î¸</i>â€²-Al₂Cu precipitation kinetics in Alâ€“Cu alloys. Materials Science and Technology, 2021, 37, 979-992.	1.6	6
97	The effect of Zn coating layer on the microstructure and mechanical properties of friction stir spot welded galvanized DP590 high-strength steel plates. International Journal of Advanced Manufacturing Technology, 2021, 113, 1787-1798.	3.0	5
98	Microstructure, mechanical properties and corrosion fatigue behaviour of biodegradable Mgâ€“Znâ€“Yâ€“Nd alloy prepared by double extrusion. Corrosion Engineering Science and Technology, 2021, 56, 584-593.	1.4	5
99	Surface solid-state amorphization of accumulative roll bonded Cu-Zr laminates by friction stir processing. Materials Letters, 2020, 279, 128518.	2.6	4
100	Effect of Trace Elements on the Crystallization Temperature Interval and Properties of 5xxx Series Aluminum Alloys. Metals, 2020, 10, 483.	2.3	4
101	Clarifying effect of welding conditions on microstructure and mechanical properties of friction stir spot-welded DH590 automotive high-strength steel plates. Journal of Iron and Steel Research International, 2021, 28, 232-243.	2.8	4
102	Directâ€Chill Casting of Largeâ€Scale Alâ€“Cu Alloy Ingot Under Ultrasound: Distribution of Physical Fields and Analysis of Microstructure. Advanced Engineering Materials, 2021, 23, 2100432.	3.5	4
103	Complex Dynamical Behavior in the Shear-Displacement Model for Bulk Metallic Glasses during Plastic Deformation. Complexity, 2018, 2018, 1-13.	1.6	3
104	Microstructure and Mechanical Properties of Friction Stir Welded 1.5 GPa Martensitic High-Strength Steel Plates. Acta Metallurgica Sinica (English Letters), 0, , 1.	2.9	3
105	Preparing a Bioactive (Chitosan/Sodium Hyaluronate)/SrHA Coating on Mgâ€“Znâ€“Ca Alloy for Orthopedic Implant Applications. Frontiers in Materials, 2022, 8, .	2.4	3
106	pH Stimuliâ€Responsive, Rapidly Selfâ€healable Coatings Enhanced the Corrosion Resistance and Osteogenic Differentiation of Mgâ€1Ca Osteoimplant. Small, 2022, 18, e2106056.	10.0	3
107	Simulation of dynamic recrystallization behavior of hot extruded Mg-Zn-Y-Nd alloy tubes by the finite element method. Materials Today Communications, 2021, 27, 102384.	1.9	2
108	Cross-Scale Simulation Research on the Macro/Microstructure of TC4 Alloy Wire Laser Additive Manufacturing. Metals, 2022, 12, 934.	2.3	2

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109	Atomic structure of <scp>Co_{92â^'<i>x</i>}B_{<i>x</i>}Ta₈</scp> glassy alloys studied by ab initio molecular dynamics simulations. International Journal of Quantum Chemistry, 2020, 120, e26406.	2.0	1
110	Does Expanding or Contracting MgO Lattice Really Help with Corrosion Resistance of Mg Surface: Insights from Molecular Dynamics Simulations. ACS Omega, 2021, 6, 1099-1107.	3.5	1
111	Hemocompatibility of Mgâ€Znâ€Yâ€Nd: Fabrication of Citric Acid/RGD Multilayers on Mgâ€Znâ€Yâ€Nd Alloy via Layerâ€byâ€Layer Selfâ€Assembly for Promoting Surface Biocompatibility (Adv. Mater. Interfaces 13/2021). Advanced Materials Interfaces, 2021, 8, 2170074.	3.7	1
112	Friction Stir Processed High Purity Mg Coating on MgZnYNd Alloy with Improved Corrosion Resistance. Journal of Materials Engineering and Performance, 0, , 1.	2.5	0
113	The deteriorated degradation resistance of Mg alloy microtubes for vascular stent under the coupling effect of radial compressive stress and dynamic medium. Journal of Magnesium and Alloys, 2022, , .	11.9	0