Bobby Kannan Mathan

List of Publications by Year
in descending order

89 papers	4,185 citations	101384 36 h-index	114278 63 g-index
91 all docs	91 docs citations	91 times ranked	3511 citing authors

#	Article	IF	Citations
1	Corrosion resistance of Mg-Al-LDH steam coating on AZ80 Mg alloy: Effects of citric acid pretreatment and intermetallic compounds. Journal of Magnesium and Alloys, 2023, 11, 2967-2979.	5.5	6
2	Recent Approaches for Enhancing Corrosion Resistance of PEO/MAO-Coated Mg and Its Alloys. , 2022, , 465-488.		2
3	Advances in hydroxyapatite coatings on biodegradable magnesium and its alloys. Journal of Magnesium and Alloys, 2022, 10, 1154-1170.	5.5	45
4	Advances in bioorganic molecules inspired degradation and surface modifications on Mg and its alloys. Journal of Magnesium and Alloys, 2022, 10, 670-688.	5.5	33
5	Antipsychotic drug waste: A potential corrosion inhibitor for mild steel in the oil and gas industry. Waste Management, 2022, 145, 38-47.	3.7	13
6	In vitro degradation and biocompatibility of vitamin C loaded Ca-P coating on a magnesium alloy for bioimplant applications. Corrosion Communications, 2022, 6, 16-28.	2.7	7
7	Dealloying corrosion of anodic and nanometric Mg41Nd5 in solid solution-treated Mg-3Nd-1Li-0.2Zn alloy. Journal of Materials Science and Technology, 2021, 83, 161-178.	5.6	49
8	Biodiesel production via simultaneous transesterification and esterification reactions over SrOâ€“ZnO/Al2O3 as a bifunctional catalyst using high acidic waste cooking oil. Chemical Engineering Research and Design, 2020, 162, 238-248.	2.7	62
9	Biodegradable 3D porous zinc alloy scaffold for bone fracture fixation devices. Medical Devices & Sensors, 2020, 3, e10108.	2.7	5
10	Biodegradation behavior of micro-arc oxidation coating on magnesium alloy-from a protein perspective. Bioactive Materials, 2020, 5, 398-409.	8.6	92
11	A tripleâ€layered hybrid coating with selfâ€organized microporous polymer film on magnesium for biodegradable implant applications. Medical Devices & Sensors, 2020, 3, e10070.	2.7	4
12	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.	1.6	38
13	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.	5.6	86
14	Hydrogen depth profiles and microhardness of electrochemically hydrogen-charged nanostructured bainitic steels. International Journal of Hydrogen Energy, 2019, 44, 14064-14069.	3.8	2
15	Corrosion resistance of nanostructured magnesium hydroxide coating on magnesium alloy AZ31: influence of EDTA. Rare Metals, 2019, 38, 520-531.	3.6	45
16	Hydrogen permeation in twinning-induced plasticity (TWIP) steel. International Journal of Hydrogen Energy, 2018, 43, 22685-22693.	3.8	14
17	Electrochemical surface engineering of magnesium metal by plasma electrolytic oxidation and calcium phosphate deposition: biocompatibility and <i>in vitro</i> degradation studies. RSC Advances, 2018, 8, 29189-29200.	1.7	18
18	Calciumâ€Ion Batteries: Current Stateâ€ofâ€theâ€Art and Future Perspectives. Advanced Materials, 2018, 30, e1801702.	11.1	294

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19	Advances in functionalized polymer coatings on biodegradable magnesium alloys â€“ A review. Acta Biomaterialia, 2018, 79, 23-36.	4.1	338
20	Ion Implantation of Calcium and Zinc in Magnesium for Biodegradable Implant Applications. Metals, 2018, 8, 30.	1.0	15
21	Novel Sustainable Route for Synthesis of Hydroxyapatite Biomaterial from Biowastes. ACS Sustainable Chemistry and Engineering, 2017, 5, 2237-2245.	3.2	47
22	Biocompatibility and Degradation of a Low Elastic Modulus Ti-35Nb-3Zr Alloy: Nanosurface Engineering for Enhanced Degradation Resistance. ACS Biomaterials Science and Engineering, 2017, 3, 509-517.	2.6	17
23	Understanding the influence of HEPES buffer concentration on the biodegradation of pure magnesium: An electrochemical study. Materials Chemistry and Physics, 2017, 197, 47-56.	2.0	20
24	Conversion of biowastes to biomaterial: An innovative waste management approach. Waste Management, 2017, 67, 67-72.	3.7	22
25	Biocompatibility and biodegradation studies of a commercial zinc alloy for temporary mini-implant applications. Scientific Reports, 2017, 7, 15605.	1.6	50
26	Effect of cathodic hydrogen-charging current density on the hydrogen diffusivity in nanostructured bainitic steels. Materials Science and Technology, 2017, 33, 1548-1552.	0.8	8
27	Electropolymerisation of Aniline on AZ91 Magnesium Alloy: The Effect of Coating Electrolyte Corrosiveness. Metals, 2017, 7, 533.	1.0	7
28	Effects of process parameters on the adhesive strength of copper electrodeposits in a bench-scale electrowinning cell. Institutions of Mining and Metallurgy Transactions Section C: Mineral Processing and Extractive Metallurgy, 2016, 125, 10-16.	0.6	3
29	Optimising parameters for galvanostatic polyaniline coating on nanostructured bainitic steel. Surface Engineering, 2016, 32, 607-614.	1.1	5
30	Hydrogen Permeation in Nanostructured Bainitic Steel. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2016, 47, 4896-4903.	1.1	10
31	Biocompatibility and in Vitro Degradation Behavior of Magnesiumâ€“Calcium Alloy Coated with Calcium Phosphate Using an Unconventional Electrolyte. ACS Biomaterials Science and Engineering, 2016, 2, 56-64.	2.6	24
32	Electrochemical deposition of calcium phosphates on magnesium and its alloys for improved biodegradation performance: A review. Surface and Coatings Technology, 2016, 301, 36-41.	2.2	54
33	A mechanistic <i>in vitro</i> study of the microgalvanic degradation of secondary phase particles in magnesium alloys. Journal of Biomedical Materials Research - Part A, 2015, 103, 990-1000.	2.1	17
34	Biodegradable polymeric coatings for surface modification of magnesium-based biomaterials. , 2015, , 355-376.		8
35	Plasma electrolytic oxidation/micro-arc oxidation ofÂmagnesium and its alloys. , 2015, , 193-234.		11
36	Influence of living cells (L929) on the biodegradation of magnesiumâ€“calcium alloy. Colloids and Surfaces B: Biointerfaces, 2015, 126, 603-606.	2.5	26

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37	Influence of zinc on the microstructure, mechanical properties and inÂvitro corrosion behavior of magnesiumâ€“zinc binary alloys. Journal of Alloys and Compounds, 2015, 648, 291-296.	2.8	78
38	Ultrathin film coating of hydroxyapatite (HA) on a magnesiumâ€“calcium alloy using RF magnetron sputtering for bioimplant applications. Materials Letters, 2015, 152, 280-282.	1.3	59
39	Low elastic modulus Tiâ€“Ta alloys for load-bearing permanent implants: Enhancing the biodegradation resistance by electrochemical surface engineering. Materials Science and Engineering C, 2015, 46, 226-231.	3.8	25
40	Aqueous corrosion performance of nanostructured bainitic steel. Materials & Design, 2014, 54, 67-71.	5.1	30
41	Biodegradable polymer for sealing porous PEO layer on pure magnesium: An in vitro degradation study. Applied Surface Science, 2014, 301, 463-467.	3.1	37
42	Self-dissolution assisted coating on magnesium metal for biodegradable bone fixation devices. Materials Research Express, 2014, 1, 045406.	0.8	10
43	Selective Dissolution of Retained Austenite in Nanostructured Bainitic Steels. Advanced Engineering Materials, 2014, 16, 442-444.	1.6	8
44	Dual layer inorganic coating on magnesium for delaying the biodegradation for bone fixation implants. Materials Letters, 2014, 124, 188-191.	1.3	25
45	Influence of the cathodic activity of magnesium alloys on the electrochemical deposition of calcium phosphate. Materials Letters, 2014, 130, 184-187.	1.3	16
46	Corrosion behavior of twinningâ€induced plasticity (TWIP) steel. Materials and Corrosion - Werkstoffe Und Korrosion, 2013, 64, 231-235.	0.8	23
47	Galvanostatic polymerisation of aniline on steel: Improving the coating performance in chloride-containing environment. Synthetic Metals, 2013, 180, 54-58.	2.1	8
48	Hybrid coating on a magnesium alloy for minimizing the localized degradation for load-bearing biodegradable mini-implant applications. Materials Chemistry and Physics, 2013, 142, 350-354.	2.0	30
49	Performance of pulsed constant current silicate-based PEO coating on pure magnesium in simulated body fluid. Materials Letters, 2013, 106, 18-21.	1.3	43
50	Effect of surface roughness on the in vitro degradation behaviour of a biodegradable magnesium-based alloy. Applied Surface Science, 2013, 279, 343-348.	3.1	59
51	Potentiostatic pulse-deposition of calcium phosphate on magnesium alloy for temporary implant applications â€" An in vitro corrosion study. Materials Science and Engineering C, 2013, 33, 675-679.	3.8	50
52	Improving the packing density of calcium phosphate coating on a magnesium alloy for enhanced degradation resistance. Journal of Biomedical Materials Research - Part A, 2013, 101A, 1248-1254.	2.1	34
53	Electrochemical Corrosion Behaviour of WE54 Magnesium Alloy. Materials Science Forum, 2013, 765, 644-647.	0.3	1
54	Role of Recrystallized Grains on the Environment-Assisted Cracking of Aluminium-Alloy. Materials Science Forum, 2013, 753, 489-492.	0.3	0

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55	Nanoscience and biomaterial corrosion control. , 2012, , 375-392.		1
56	Polylactic acid coating on a biodegradable magnesium alloy: An in vitro degradation study by electrochemical impedance spectroscopy. Thin Solid Films, 2012, 520, 6841-6844.	0.8	97
57	Pitting-induced hydrogen embrittlement of magnesiumâ€“aluminium alloy. Materials & Design, 2012, 42, 321-326.	5.1	68
58	Enhancing the performance of calcium phosphate coating on a magnesium alloy for bioimplant applications. Materials Letters, 2012, 76, 109-112.	1.3	57
59	Biodegradability of Î²-Mg17Al12 phase in simulated body fluid. Materials Letters, 2012, 82, 54-56.	1.3	16
60	Stress corrosion cracking (SCC) of aluminium alloys. , 2011, , 307-340.		15
61	In-vitro degradation behaviour of WE54 magnesium alloy in simulated body fluid. Materials Letters, 2011, 65, 748-750.	1.3	83
62	In vitro degradation behaviour of a friction stir processed magnesium alloy. Journal of Materials Science: Materials in Medicine, 2011, 22, 2397-2401.	1.7	38
63	Influence of circumferential notch and fatigue crack on the mechanical integrity of biodegradable magnesiumâ€based alloy in simulated body fluid. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2011, 96B, 303-309.	1.6	40
64	Influence of surface roughness on the corrosion behaviour of magnesium alloy. Materials & Design, 2011, 32, 2350-2354.	5.1	203
65	Stress corrosion cracking (SCC) of magnesium alloys. , 2011, , 341-380.		11
66	Stress corrosion cracking (SCC) of copper and copper-based alloys. , 2011, , 409-426.		7
67	<i>In vitro</i> mechanical integrity of hydroxyapatite coated magnesium alloy. Biomedical Materials (Bristol), 2011, 6, 045003.	1.7	57
68	A mechanistic study of <i>in vitro</i> degradation of magnesium alloy using electrochemical techniques. Journal of Biomedical Materials Research - Part A, 2010, 93A, 1050-1055.	2.1	15
69	Influence of microstructure on the in-vitro degradation behaviour of magnesium alloys. Materials Letters, 2010, 64, 739-742.	1.3	59
70	Enhancing stress corrosion cracking resistance in Alâ€“Znâ€“Mgâ€“Cuâ€“Zr alloy through inhibiting recrystallization. Engineering Fracture Mechanics, 2010, 77, 249-256.	2.0	76
71	Calcium Phosphate Deposition on Magnesium Alloy for Bioimplant Applications. Materials Science Forum, 2010, 654-656, 2196-2199.	0.3	9
72	ENVIRONMENTALLY-ASSISTED CRACKING OF ENGINEERING MATERIALS - AN INSIGHT. Corrosion Reviews, 2009, 27, 147-180.	1.0	3

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73	Magnesium Alloys as Biodegradable Implants. Materials Science Forum, 2009, 618-619, 83-86.	0.3	0
74	Polyoxadiazole-based coating for corrosion protection of magnesium alloy. Surface and Coatings Technology, 2008, 202, 4598-4601.	2.2	38
75	In vitro degradation and mechanical integrity of calcium-containing magnesium alloys in modified-simulated body fluid. Biomaterials, 2008, 29, 2306-2314.	5.7	491
76	Laser assisted surface modification of AZ91 alloy: Microstructural and electrochemical study. Transactions of the Indian Institute of Metals, 2008, 61, 121-124.	0.7	1
77	Evaluating the stress corrosion cracking susceptibility of Mgâ€“Alâ€“Zn alloy in modified-simulated body fluid for orthopaedic implant application. Scripta Materialia, 2008, 59, 175-178.	2.6	94
78	Comparative studies on the corrosion properties of a Feâ€“Mnâ€“Alâ€“Si steel and an interstitial-free steel. Corrosion Science, 2008, 50, 2879-2884.	3.0	67
79	Stress corrosion cracking of rare-earth containing magnesium alloys ZE41, QE22 and Elektron 21 (EV31A) compared with AZ80. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 480, 529-539.	2.6	155
80	Stress corrosion cracking behavior of Nd:YAG laser butt welded AZ31 Mg sheet. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2007, 444, 220-226.	2.6	53
81	A study on the SCC susceptibility of friction stir welded AZ31 Mg sheet. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2007, 460-461, 243-250.	2.6	79
82	Hydrogen-induced-cracking in magnesium alloy under cathodic polarization. Scripta Materialia, 2007, 57, 579-581.	2.6	62
83	Role of coarse intermetallic particles on the environmentally assisted cracking behavior of peak aged and over aged Alâ€“Znâ€“Mgâ€“Cuâ€“Zr alloy during slow strain rate testing. Journal of Materials Science, 2007, 42, 5458-5464.	1.7	18
84	Influence of Heat Treatment and Scandium Addition on the Electrochemical Polarization Behavior of Al-Zn-Mg-Cu-Zr Alloy. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2007, 38, 2843-2852.	1.1	42
85	Environmentally assisted cracking behavior of peak-aged 7010 aluminum alloy containing scandium. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2005, 36, 3257-3262.	1.1	22
86	Self-Assembled Porous Tantalum Oxide Prepared in H[sub 2]SO[sub 4]/HF Electrolytes. Electrochemical and Solid-State Letters, 2005, 8, J10.	2.2	146
87	Determination of true stress corrosion cracking susceptibility index of a high strength Al alloy using glycerin as the non-corrosive atmosphere. Scripta Materialia, 2004, 51, 1075-1079.	2.6	23
88	Enhancing the Localized Corrosion Resistance of High Strength 7010 Al-Alloy. Advanced Materials Research, 0, 138, 1-6.	0.3	4
89	Electrochemical Corrosion Behaviour of ZE41 and QE22 Magnesium Alloys. Materials Science Forum, 0, 690, 385-388.	0.3	2