

# Rajendran Nallaiyan

## List of Publications by Year in descending order

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94  
papers

2,799  
citations

172457

29  
h-index

214800

47  
g-index

95  
all docs

95  
docs citations

95  
times ranked

2678  
citing authors

#	ARTICLE	IF	CITATIONS
1	A Review on TiO <sub>2</sub> Nanotubes: Influence of Anodization Parameters, Formation Mechanism, Properties, Corrosion Behavior, and Biomedical Applications. <i>Journal of Bio- and Tribo-Corrosion</i> , 2015, 1, 1.	2.6	179
2	Corrosion inhibition of mild steel by benzotriazole derivatives in acidic medium. <i>Journal of Applied Electrochemistry</i> , 2003, 33, 1175-1182.	2.9	170
3	Bioactive HA/TiO <sub>2</sub> coating on magnesium alloy for biomedical applications. <i>Ceramics International</i> , 2014, 40, 6617-6630.	4.8	121
4	Novel sol gel coating of Nb <sub>2</sub> O <sub>5</sub> on magnesium alloy for biomedical applications. <i>Surface and Coatings Technology</i> , 2014, 244, 131-141.	4.8	87
5	Electrochemical polymerization of pyrrole over AZ31 Mg alloy for biomedical applications. <i>Electrochimica Acta</i> , 2013, 88, 310-321.	5.2	84
6	Improvement in the corrosion resistance of carbon steel in acidic condition using naphthalen-2-yl-naphthalene-2-carboxamide inhibitor. <i>Journal of Colloid and Interface Science</i> , 2018, 512, 618-628.	9.4	80
7	Surface Modification Methods for Titanium and Its Alloys and Their Corrosion Behavior in Biological Environment: A Review. <i>Journal of Bio- and Tribo-Corrosion</i> , 2019, 5, 1.	2.6	74
8	Effect of nitrides on the corrosion behaviour of 316L SS bipolar plates for Proton Exchange Membrane Fuel Cell (PEMFC). <i>International Journal of Hydrogen Energy</i> , 2015, 40, 3359-3369.	7.1	73
9	Electrochemical behavior and effect of heat treatment on morphology, crystalline structure of self-organized TiO <sub>2</sub> nanotube arrays on Ti-6Al-7Nb for biomedical applications. <i>Materials Science and Engineering C</i> , 2015, 50, 394-401.	7.3	70
10	Electrochemical behaviour and bioactivity of self-organized TiO <sub>2</sub> nanotube arrays on Ti-6Al-4V in Hanks's™ solution for biomedical applications. <i>Electrochimica Acta</i> , 2015, 155, 411-420.	5.2	66
11	Corrosion and interfacial contact resistance behavior of electrochemically nitrided 316L SS bipolar plates for proton exchange membrane fuel cells. <i>Energy</i> , 2017, 133, 1050-1062.	8.8	60
12	Corrosion behavior of electrochemically assembled nanoporous titania for biomedical applications. <i>Ceramics International</i> , 2013, 39, 959-967.	4.8	58
13	Electrochemical behavior of polypyrrole/chitosan composite coating on Ti metal for biomedical applications. <i>Carbohydrate Polymers</i> , 2018, 189, 126-137.	10.2	58
14	Drug release characteristics of quercetin-loaded TiO <sub>2</sub> nanotubes coated with chitosan. <i>International Journal of Biological Macromolecules</i> , 2016, 93, 1633-1638.	7.5	54
15	Electrochemical impedance spectroscopic characterisation of passive film formed over Ti-29Nb-13Ta-4.6Zr alloy. <i>Electrochemistry Communications</i> , 2006, 8, 1309-1314.	4.7	50
16	EIS evaluation of protective performance and surface characterization of epoxy coating with aluminum nanoparticles after wet and dry corrosion test. <i>Journal of Solid State Electrochemistry</i> , 2012, 16, 2085-2093.	2.5	50
17	Effect of multilayer CrN/CrAlN coating on the corrosion and contact resistance behavior of 316L SS bipolar plate for high temperature proton exchange membrane fuel cell. <i>Journal of Materials Science and Technology</i> , 2022, 97, 134-146.	10.7	50
18	Application of EIS and SECM Studies for Investigation of Anticorrosion Properties of Epoxy Coatings containing ZrO <sub>2</sub> Nanoparticles on Mild Steel in 3.5% NaCl Solution. <i>Journal of Failure Analysis and Prevention</i> , 2016, 16, 1082-1091.	0.9	48

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19	Corrosion behavior of 316L and 304 stainless steels exposed to industrial-marine-urban environment: field study. RSC Advances, 2016, 6, 47314-47324.	3.6	45
20	<i>In-vitro</i> biocompatibility and corrosion resistance of strontium incorporated TiO <sub>2</sub> nanotube arrays for orthopaedic applications. Journal of Biomaterials Applications, 2014, 29, 113-129.	2.4	42
21	Electrochemical and in vitro bioactivity of polypyrrole/ceramic nanocomposite coatings on 316L SS bio-implants. Materials Science and Engineering C, 2014, 43, 76-85.	7.3	42
22	Influence of tunable diameter on the electrochemical behavior and antibacterial activity of titania nanotube arrays for biomedical applications. Materials Characterization, 2017, 129, 67-79.	4.4	42
23	Electrochemical Adsorption Properties and Inhibition of Brass Corrosion in Natural Seawater by Thiadiazole Derivatives: Experimental and Theoretical Investigation. Industrial & Engineering Chemistry Research, 2012, 51, 30-43.	3.7	39
24	Sol-gel derived porous zirconium dioxide coated on 316L SS for orthopedic applications. Journal of Sol-Gel Science and Technology, 2009, 52, 188-196.	2.4	38
25	In vitro bioactivity and corrosion resistance of Zr incorporated TiO <sub>2</sub> nanotube arrays for orthopaedic applications. Applied Surface Science, 2014, 316, 264-275.	6.1	37
26	Green Nanosilver as Reinforcing Eco-Friendly Additive to Epoxy Coating for Augmented Anticorrosive and Antimicrobial Behavior. Silicon, 2016, 8, 277-298.	3.3	35
27	Evaluation of corrosion behavior of surface modified Ti-6Al-4V ELI alloy in hanks solution. Journal of Applied Electrochemistry, 2010, 40, 285-293.	2.9	33
28	Sol-gel synthesis and characterisation of nanoporous zirconium titanate coated on 316L SS for biomedical applications. Journal of Sol-Gel Science and Technology, 2011, 59, 513-520.	2.4	33
29	Dynamic electrochemical impedance study of fluoride conversion coating on AZ31 magnesium alloy to improve bioadaptability for orthopedic application. Materials and Corrosion - Werkstoffe Und Korrosion, 2019, 70, 698-710.	1.5	32
30	In-vitro bioactivity and electrochemical behavior of polyaniline encapsulated titania nanotube arrays for biomedical applications. Applied Surface Science, 2018, 439, 66-74.	6.1	31
31	Biocompatible gadolinium-coated magnesium alloy for biomedical applications. Journal of Materials Science, 2020, 55, 11582-11596.	3.7	30
32	Polypyrrole/graphene oxide composite coating on Ti implants: a promising material for biomedical applications. Journal of Materials Science, 2020, 55, 5211-5229.	3.7	30
33	Weathering Steel in Industrial-Marine-Urban Environment: Field Study. Materials Transactions, 2016, 57, 148-155.	1.2	26
34	Surface characteristics, corrosion resistance and MG63 osteoblast-like cells attachment behaviour of nano SiO <sub>2</sub> -ZrO <sub>2</sub> coated 316L stainless steel. RSC Advances, 2015, 5, 26007-26016.	3.6	25
35	Evaluation of in vitro bioactivity and MG63 Osteoblast cell response for TiO <sub>2</sub> coated magnesium alloys. Journal of Sol-Gel Science and Technology, 2012, 64, 694-703.	2.4	24
36	Effect of plasma nitriding on structure and biocompatibility of self-organised TiO <sub>2</sub> nanotubes on Ti-6Al-7Nb. RSC Advances, 2015, 5, 41763-41771.	3.6	24

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37	Development of poly(vinylcarbazole)/alumina nanocomposite coatings for corrosion protection of 316L stainless steel in 3.5% NaCl medium. <i>Journal of Applied Polymer Science</i> , 2017, 134, 44937.	2.6	24
38	In-vitro biocompatibility and corrosion resistance of electrochemically assembled PPy/TNTA hybrid material for biomedical applications. <i>Applied Surface Science</i> , 2018, 445, 320-334.	6.1	24
39	Evaluation of the corrosion behavior of a TiN-coated 316L SS bipolar plate using dynamic electrochemical impedance spectroscopy. <i>New Journal of Chemistry</i> , 2018, 42, 14394-14409.	2.8	24
40	Selenium conversion coating on AZ31 Mg alloy: A solution for improved corrosion rate and enhanced bio-adaptability. <i>Surface and Coatings Technology</i> , 2019, 378, 124902.	4.8	23
41	Corrosion inhibitive properties and electrochemical adsorption behaviour of some piperidine derivatives on brass in natural sea water. <i>Journal of Solid State Electrochemistry</i> , 2012, 16, 391-402.	2.5	22
42	Corrosion resistant and conductive TiN/TiAlN multilayer coating on 316L SS: a promising metallic bipolar plate for proton exchange membrane fuel cell. <i>Journal of Materials Science</i> , 2021, 56, 10575-10596.	3.7	22
43	Influence of bicarbonate concentration on the conversion layer formation onto AZ31 magnesium alloy and its electrochemical corrosion behaviour in simulated body fluid. <i>RSC Advances</i> , 2016, 6, 49910-49922.	3.6	20
44	Investigation of corrosion behavior of polypyrrole-coated Ti using dynamic electrochemical impedance spectroscopy (DEIS). <i>RSC Advances</i> , 2016, 6, 80275-80285.	3.6	20
45	Synthesis and characterization of nanoporous sodium-substituted hydrophilic titania ceramics coated on 316L SS for biomedical applications. <i>Journal of Coatings Technology Research</i> , 2011, 8, 595-604.	2.5	19
46	Surface Modification and In Vitro Characterization of Cp-Ti and Ti-5Al-2Nb-1Ta Alloy in Simulated Body Fluid. <i>Journal of Materials Engineering and Performance</i> , 2012, 21, 2177-2187.	2.5	19
47	Fabrication of nanoporous sodium niobate coating on 316L SS for orthopaedics. <i>Ceramics International</i> , 2017, 43, 11569-11579.	4.8	19
48	In-vitro corrosion assessment of silicate-coated AZ31 Mg alloy in Earle's solution. <i>Journal of Materials Science</i> , 2020, 55, 3571-3587.	3.7	19
49	Switching on Antiferromagnetic Coupled Superparamagnetism by Annealing Ferromagnetic Mn/CdS Nanoparticles. <i>Journal of Physical Chemistry C</i> , 2011, 115, 11413-11419.	3.1	18
50	Influence of Si nanoparticles on the electrochemical behavior of organic coatings on carbon steel in chloride environment. <i>Journal of Coatings Technology Research</i> , 2012, 9, 609-620.	2.5	18
51	Effect of Sr on the bioactivity and corrosion resistance of nanoporous niobium oxide coating for orthopaedic applications. <i>Materials Science and Engineering C</i> , 2014, 36, 194-205.	7.3	18
52	Dynamic electrochemical impedance spectroscopy (DEIS) studies of AZ31 magnesium alloy in simulated body fluid solution. <i>RSC Advances</i> , 2014, 4, 27791-27795.	3.6	18
53	Formation of a protective nitride layer by electrochemical nitridation on 316L SS bipolar plates for a proton exchange membrane fuel cell (PEMFC). <i>RSC Advances</i> , 2015, 5, 64466-64470.	3.6	18
54	Biologically anchored chitosan/gelatin-SrHAP scaffold fabricated on Titanium against chronic osteomyelitis infection. <i>International Journal of Biological Macromolecules</i> , 2018, 110, 206-214.	7.5	18

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55	Silver nanoparticles incorporated polyaniline on TiO <sub>2</sub> nanotube arrays: A nanocomposite platform to enhance the biocompatibility and antibiofilm. <i>Surfaces and Interfaces</i> , 2021, 22, 100892.	3.0	18
56	In vitro corrosion behaviour of plasma nitrided Ti-6Al-7Nb orthopaedic alloy in Hanks solution. <i>Science and Technology of Advanced Materials</i> , 2003, 4, 415-418.	6.1	17
57	Evaluation of effective biocides for SRB to control microbiologically influenced corrosion. <i>Materials and Corrosion - Werkstoffe Und Korrosion</i> , 2008, 59, 329-334.	1.5	17
58	In Vitro Bioactivity of Surface-Modified $\beta$ -Ti Alloy for Biomedical Applications. <i>Journal of Materials Engineering and Performance</i> , 2011, 20, 1271-1277.	2.5	17
59	Effect of Si nanoparticles on the corrosion protection performance of organic coating on carbon steel in chloride environment. <i>Metals and Materials International</i> , 2012, 18, 965-973.	3.4	17
60	Evaluation of chemically modified Ti-5Mo-3Fe alloy surface: Electrochemical aspects and in vitro bioactivity on MG63 cells. <i>Applied Surface Science</i> , 2014, 307, 52-61.	6.1	17
61	Anticancer Activity of Samarium-Coated Magnesium Implants for Immunocompromised Patients. <i>ACS Applied Bio Materials</i> , 2020, 3, 4408-4416.	4.6	17
62	Bio-inspired polydopamine incorporated titania nanotube arrays for biomedical applications. <i>Colloids and Surfaces A: Physicochemical and Engineering Aspects</i> , 2021, 629, 127489.	4.7	16
63	Crevice corrosion monitoring of titanium and its alloys using microelectrodes. <i>Materials and Corrosion - Werkstoffe Und Korrosion</i> , 2007, 58, 334-339.	1.5	13
64	Electrochemical Characterization of Carbon and Weathering Steels Corrosion Products to Determine the Protective Ability Using Carbon Paste Electrode (CPE). <i>Electroanalysis</i> , 2014, 26, 2419-2428.	2.9	13
65	In-Vitro Biocompatibility Studies of Plasma-Nitrided Titanium Alloy $\beta$ -21S Using Fibroblast Cells. <i>Journal of Materials Engineering and Performance</i> , 2016, 25, 1508-1514.	2.5	13
66	Fabrication of chitosan/silica hybrid coating on AZ31 Mg alloy for orthopaedic applications. <i>Journal of Magnesium and Alloys</i> , 2023, 11, 614-628.	11.9	13
67	Surface modification of titanium by chemical and thermal methods – electrochemical impedance spectroscopic studies. <i>Corrosion Engineering Science and Technology</i> , 2011, 46, 585-591.	1.4	12
68	Formation of nanoporous oxide layer over a binary $\beta$ -phase titanium in simulated body fluid. <i>Journal of Porous Materials</i> , 2012, 19, 573-577.	2.6	12
69	Influence Of ZrO <sub>2</sub> on The Physicochemical Properties of Phosphate-Based Glasses and Glass Ceramics. Phosphorus, Sulfur and Silicon and the Related Elements, 2012, 187, 1434-1449.	1.6	12
70	Electrochemical Corrosion and In Vitro Bioactivity of SiO <sub>2</sub> :ZrO <sub>2</sub> -Coated 316L Stainless Steel in Simulated Body Fluid. <i>Journal of Materials Engineering and Performance</i> , 2015, 24, 3056-3067.	2.5	12
71	Development of Self-Assembled Titania Nanopore Arrays for Orthopedic Applications. <i>Journal of Bio- and Tribo-Corrosion</i> , 2017, 3, 1.	2.6	12
72	Non-Invasive, Non-Enzymatic, Biodegradable and Flexible Sweat Glucose Sensor and Its Electrochemical Studies. <i>ChemistrySelect</i> , 2020, 5, 11305-11321.	1.5	12

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73	Investigations on <i>In Vitro</i> and Degradation Properties of $ZnO$ -Added Phosphate-Based Glasses and Glass Ceramics. <i>Journal of the American Ceramic Society</i> , 2012, 95, 3490-3500.	3.8	11
74	Corrosion behaviour of tetrahedral amorphous carbon (ta-C) filled titania nano tubes. <i>RSC Advances</i> , 2015, 5, 93131-93138.	3.6	11
75	Fabrication of bioactive corrosion-resistant polyaniline/TiO <sub>2</sub> nanotubes nanocomposite and their application in orthopedics. <i>Journal of Materials Science</i> , 2020, 55, 15602-15620.	3.7	11
76	Effect of Nitrogen implantation on the corrosion behaviour of Ti-6Al-7Nb and Ti-5Al-2Nb-1Ta orthopaedic alloys in Hanks solution. <i>Journal of Applied Electrochemistry</i> , 2004, 34, 271-276.	2.9	9
77	Effect of Some Oxadiazole Derivatives on the Corrosion Inhibition of Brass in Natural Seawater. <i>Journal of Materials Engineering and Performance</i> , 2012, 21, 1363-1373.	2.5	9
78	Applications of dynamic electrochemical impedance spectroscopy (DEIS) to evaluate protective coatings formed on AZ31 magnesium alloy. <i>RSC Advances</i> , 2015, 5, 29589-29593.	3.6	9
79	<i>IN SITU</i> TEMPLATE SYNTHESIS OF $PoPD$ -TiO <sub>2</sub> NANOCOMPOSITES FOR ACTIVE ANTI-CORROSIVE COATINGS ON 316L SS. <i>International Journal of Nanoscience</i> , 2011, 10, 1147-1152.	0.7	8
80	Biofunctionalization of Mg implants with gadolinium coating for bone regeneration. <i>Surfaces and Interfaces</i> , 2022, 31, 101948.	3.0	8
81	Electropolymerized PEDOT/TNTA hybrid composite: A promising biomaterial for orthopaedic application. <i>Applied Surface Science</i> , 2022, 595, 153534.	6.1	8
82	Synthesis and Anticorrosive Properties of Novel PVK-ZrO <sub>2</sub> /Nano Composite Coatings on Steel-Substrate. <i>E-Journal of Surface Science and Nanotechnology</i> , 2018, 16, 5-13.	0.4	7
83	Evaluation of passive film behaviour of super austenitic stainless steels at different potential regions using dynamic electrochemical impedance spectroscopy. <i>Journal of Solid State Electrochemistry</i> , 2010, 14, 1197-1204.	2.5	6
84	Influence of Ag <sub>2</sub> O on crystallisation and structural modifications of phosphate glasses. <i>Phase Transitions</i> , 2012, 85, 630-649.	1.3	6
85	Effect of Acid Treatment on the Surface Modification of Ti-6Al-7Nb and Ti-5Al-2Nb-1Ta and Its Electrochemical Investigations in Simulated Body Fluid. <i>Journal of Bio- and Tribo-Corrosion</i> , 2017, 3, 1.	2.6	5
86	Effect of Fluoride Concentration and pH on Corrosion Behavior of Ti-15Mo in Artificial Saliva. <i>Journal of Bio- and Tribo-Corrosion</i> , 2018, 4, 1.	2.6	5
87	Poly(m-phenylenediamine)-coated 316L SS: A promising material for bipolar plates in PEMFC environment. <i>Materials and Corrosion - Werkstoffe Und Korrosion</i> , 2019, 70, 1646-1656.	1.5	5
88	Investigation into the Corrosion Behavior of Copper/Aluminum Associated with Electric/Electronic Devices in Marine Environment. <i>Journal of Failure Analysis and Prevention</i> , 2019, 19, 250-257.	0.9	5
89	Investigations on the Thermal and Elastic Properties of ZnO-Incorporated Phosphate Glasses and Glass Ceramics. <i>Phosphorus, Sulfur and Silicon and the Related Elements</i> , 2012, 187, 831-849.	1.6	4
90	Corrosion behavior of titanium alloys in Hanks solution. <i>Transactions of the Materials Research Society of Japan</i> , 2009, 34, 579-583.	0.2	2

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91	Electrochemical corrosion behavior of alloy 31 using dynamic electrochemical impedance spectroscopy. Transactions of the Materials Research Society of Japan, 2010, 35, 631-634.	0.2	2
92	Structural and Textural Modifications of Ternary Phosphate Glasses by Thermal Treatment. International Journal of Applied Glass Science, 2011, 2, 222-234.	2.0	2
93	Inhibition effect of newly synthesised piperidine derivatives on the corrosion of brass in natural seawater. Protection of Metals and Physical Chemistry of Surfaces, 2013, 49, 763-775.	1.1	2
94	Editorial. , 2016, 104, 663-664.		0