

Vijayamohanan K Pillai

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109
papers

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h-index

59
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111
ext. papers

4,318
ext. citations

5.3
avg. IF

5.71
L-index

#	Paper	IF	Citations
109	Electrochemical preparation of luminescent graphene quantum dots from multiwalled carbon nanotubes. <i>Chemistry - A European Journal</i> , 2012 , 18, 12522-8	4.8	278
108	Polymer electrolyte fuel cells using nafion-based composite membranes with functionalized carbon nanotubes. <i>Angewandte Chemie - International Edition</i> , 2008 , 47, 2653-6	16.4	217
107	Electrochemical unzipping of multi-walled carbon nanotubes for facile synthesis of high-quality graphene nanoribbons. <i>Journal of the American Chemical Society</i> , 2011 , 133, 4168-71	16.4	179
106	Electrochemical synthesis of luminescent MoS ₂ quantum dots. <i>Chemical Communications</i> , 2015 , 51, 6293-6	5.8	177
105	Shape-dependent electrocatalytic activity of platinum nanostructures. <i>Journal of Materials Chemistry</i> , 2008 , 18, 5858		157
104	Synthesis of N, F and S co-doped graphene quantum dots. <i>Nanoscale</i> , 2015 , 7, 11515-9	7.7	129
103	Electric field induced, superhydrophobic to superhydrophilic switching in multiwalled carbon nanotube papers. <i>Nano Letters</i> , 2008 , 8, 2693-6	11.5	108
102	Invertase inhibition based electrochemical sensor for the detection of heavy metal ions in aqueous system: Application of ultra-microelectrode to enhance sucrose biosensor's sensitivity. <i>Biosensors and Bioelectronics</i> , 2008 , 24, 657-64	11.8	102
101	Stabilization of graphene quantum dots (GQDs) by encapsulation inside zeolitic imidazolate framework nanocrystals for photoluminescence tuning. <i>Nanoscale</i> , 2013 , 5, 10556-61	7.7	97
100	Tuning the Wetting Properties of Multiwalled Carbon Nanotubes by Surface Functionalization. <i>Journal of Physical Chemistry C</i> , 2008 , 112, 3183-3186	3.8	84
99	Domain size manipulation of perfluorinated polymer electrolytes by sulfonic acid-functionalized MWCNTs to enhance fuel cell performance. <i>Langmuir</i> , 2009 , 25, 8299-305	4	81
98	Mitigating the Cytotoxicity of Graphene Quantum Dots and Enhancing Their Applications in Bioimaging and Drug Delivery. <i>ACS Macro Letters</i> , 2014 , 3, 1064-1068	6.6	76
97	Field emission studies of novel ZnO nanostructures in high and low field regions. <i>Nanotechnology</i> , 2006 , 17, 2730-2735	3.4	76
96	Hydrous RuO ₂ -Carbon Nanofiber electrodes with high mass and electrode-specific capacitance for efficient energy storage. <i>Nanoscale</i> , 2012 , 4, 890-6	7.7	73
95	Comparative Electrocatalytic Performance of Single-Walled and Multiwalled Carbon Nanotubes for Zinc Bromine Redox Flow Batteries. <i>Journal of Physical Chemistry C</i> , 2014 , 118, 14795-14804	3.8	71
94	The Fowler-Nordheim plot behavior and mechanism of field electron emission from ZnO tetrapod structures. <i>ACS Nano</i> , 2010 , 4, 5585-90	16.7	67
93	Improved performance of phosphonated carbon nanotube/polybenzimidazole composite membranes in proton exchange membrane fuel cells. <i>Journal of Materials Chemistry</i> , 2011 , 21, 7223		65

92	An efficient route towards the covalent functionalization of single walled carbon nanotubes. <i>Applied Surface Science</i> , 2008 , 254, 4936-4943	6.7	65
91	Spotlighting graphene quantum dots and beyond: Synthesis, properties and sensing applications. <i>Applied Materials Today</i> , 2017 , 9, 350-371	6.6	63
90	Micropencils and microhexagonal cones of ZnO. <i>Journal of Physical Chemistry B</i> , 2006 , 110, 3995-4001	3.4	59
89	Electrochemical resolution of multiple redox events for graphene quantum dots. <i>Angewandte Chemie - International Edition</i> , 2013 , 52, 2482-5	16.4	57
88	High Pt Utilization Electrodes for Polymer Electrolyte Membrane Fuel Cells by Dispersing Pt Particles Formed by a Preprecipitation Method on Carbon Polished with Polypyrrole. <i>Journal of Physical Chemistry C</i> , 2010 , 114, 14654-14661	3.8	55
87	Artificially Designed Membranes Using Phosphonated Multiwall Carbon Nanotube/Polybenzimidazole Composites for Polymer Electrolyte Fuel Cells. <i>Journal of Physical Chemistry Letters</i> , 2010 , 1, 2109-2113	6.4	54
86	Co ₃ O ₄ Nanorods Efficient Non-noble Metal Electrocatalyst for Oxygen Evolution at Neutral pH. <i>Electrocatalysis</i> , 2015 , 6, 331-340	2.7	53
85	Facile Green Synthesis of BCN Nanosheets as High-Performance Electrode Material for Electrochemical Energy Storage. <i>Chemistry - A European Journal</i> , 2016 , 22, 7134-40	4.8	45
84	Simultaneous unzipping and sulfonation of multi-walled carbon nanotubes to sulfonated graphene nanoribbons for nanocomposite membranes in polymer electrolyte fuel cells. <i>Journal of Membrane Science</i> , 2016 , 520, 657-670	9.6	41
83	High Performance Carbon Nanotube Based Electrodes for Zinc Bromine Redox Flow Batteries. <i>ECS Journal of Solid State Science and Technology</i> , 2013 , 2, M3182-M3186	2	41
82	Design of an All solid-state Supercapacitor based on phosphoric acid doped polybenzimidazole (PBI) electrolyte. <i>Journal of Applied Electrochemistry</i> , 2009 , 39, 1097-1103	2.6	41
81	Counter-ion dependent, longitudinal unzipping of multi-walled carbon nanotubes to highly conductive and transparent graphene nanoribbons. <i>Scientific Reports</i> , 2014 , 4, 4363	4.9	40
80	Highly Selective Catalytic Hydrogenation of Arenes using Rhodium Nanoparticles Supported on Multiwalled Carbon Nanotubes. <i>Journal of Physical Chemistry C</i> , 2008 , 112, 13317-13319	3.8	40
79	A facile synthesis of graphene nanoribbon-quantum dot hybrids and their application for composite electrolyte membrane in direct methanol fuel cells. <i>Electrochimica Acta</i> , 2019 , 297, 267-280	6.7	40
78	A Single-Step Electrochemical Synthesis of Luminescent WS Quantum Dots. <i>Chemistry - A European Journal</i> , 2017 , 23, 9144-9148	4.8	39
77	Template-Assisted Synthesis of Ruthenium Oxide Nanoneedles: Electrical and Electrochemical Properties. <i>Journal of Physical Chemistry C</i> , 2007 , 111, 16593-16600	3.8	38
76	Graphene nanoribbons as prospective field emitter. <i>Applied Physics Letters</i> , 2015 , 106, 023111	3.4	37
75	Single-Step Synthesis of Halogenated Graphene through Electrochemical Exfoliation and Its Utilization as Electrodes for Zinc Bromine Redox Flow Battery. <i>Journal of the Electrochemical Society</i> , 2016 , 163, A2899-A2910	3.9	37

74	Hysteresis and charge trapping in graphene quantum dots. <i>Applied Physics Letters</i> , 2013 , 102, 143104	3.4	36
73	Topotactic transition of β -Co(OH) to α -Co(OH) anchored on CoO nanoparticles during electrochemical water oxidation: synergistic electrocatalytic effects. <i>Chemical Communications</i> , 2017 , 53, 9809-9812	5.8	35
72	Functionalization of SBA-15 Mesoporous Materials using Thiol-Ene Click-Michael Addition Reaction. <i>Journal of Physical Chemistry C</i> , 2011 , 115, 17774-17781	3.8	35
71	Enhanced electrocatalytic performance of interconnected Rh nano-chains towards formic acid oxidation. <i>Energy and Environmental Science</i> , 2011 , 4, 1029	35.4	35
70	Sb-doped SnO ₂ wire: Highly stable field emitter. <i>Journal of Crystal Growth</i> , 2007 , 307, 87-91	1.6	35
69	Sequential electrochemical unzipping of single-walled carbon nanotubes to graphene ribbons revealed by in situ Raman spectroscopy and imaging. <i>ACS Nano</i> , 2014 , 8, 234-42	16.7	34
68	Photophysical and photoconductivity properties of thiol-functionalized graphene-CdSe QD composites. <i>RSC Advances</i> , 2014 , 4, 13788	3.7	30
67	Enhanced electrocatalytic performance of functionalized carbon nanotube electrodes for oxygen reduction in proton exchange membrane fuel cells. <i>Physical Chemistry Chemical Physics</i> , 2011 , 13, 10312-36	3.6	30
66	High current density, low threshold field emission from functionalized carbon nanotube bucky paper. <i>Applied Physics Letters</i> , 2010 , 97, 073102	3.4	29
65	Highly sensitive nanostructured platinum electrocatalysts for CO oxidation: Implications for CO sensing and fuel cell performance. <i>Sensors and Actuators A: Physical</i> , 2007 , 138, 376-383	3.9	28
64	Electrochemical preparation of nitrogen-doped graphene quantum dots and their size-dependent electrocatalytic activity for oxygen reduction. <i>Bulletin of Materials Science</i> , 2015 , 38, 435-442	1.7	26
63	Thiolated graphene—a new platform for anchoring CdSe quantum dots for hybrid heterostructures. <i>Nanoscale</i> , 2013 , 5, 3615-9	7.7	24
62	Field emission investigations of RuO ₂ -doped SnO ₂ wires. <i>Applied Surface Science</i> , 2007 , 253, 9159-9163	6.7	24
61	Energy analysis of field emitted electrons from a ZnO tetrapod. <i>Applied Physics Letters</i> , 2007 , 90, 162102	3.4	24
60	New Understanding on Regulating the Crystallization and Morphology of the β -Polymorph of Isotactic Polypropylene Based on Carboxylate-Alumoxane Nucleating Agents. <i>Macromolecules</i> , 2016 , 49, 2197-2205	5.5	23
59	Preparation and Characterization of Rhodium Nanostructures through the Evolution of Microgalvanic Cells and Their Enhanced Electrocatalytic Activity for Formaldehyde Oxidation. <i>Journal of Physical Chemistry C</i> , 2009 , 113, 9616-9622	3.8	23
58	Surface-State-Mediated Electron Transfer at Nanostructured ZnO Multipod/Electrolyte Interfaces. <i>Journal of Physical Chemistry C</i> , 2007 , 111, 13092-13102	3.8	23
57	Electrochemically chopped WS ₂ quantum dots as an efficient and stable electrocatalyst for water reduction. <i>Catalysis Science and Technology</i> , 2019 , 9, 223-231	5.5	22

56	Ex-situ dispersion of core-shell nanoparticles of Cu-Pt on an in situ modified carbon surface and their enhanced electrocatalytic activities. <i>Chemical Communications</i> , 2011 , 47, 3951-3	5.8	22
55	Nickel-Incorporated, Nitrogen-Doped Graphene Nanoribbons as Efficient Electrocatalysts for Oxygen Evolution Reaction. <i>Journal of the Electrochemical Society</i> , 2018 , 165, H141-H146	3.9	20
54	Carbon nanotube-modified sodium dodecyl sulfate-polyacrylamide gel electrophoresis for molecular weight determination of proteins. <i>Analytical Biochemistry</i> , 2011 , 409, 230-5	3.1	20
53	A single In-doped SnO ₂ submicrometre sized wire as a field emitter. <i>Journal Physics D: Applied Physics</i> , 2007 , 40, 3644-3648	3	19
52	Covalent grafting of polystyrene sulfonic acid on graphene oxide nanoplatelets to form a composite membrane electrolyte with sulfonated poly(ether ether ketone) for direct methanol fuel cells. <i>Journal of Membrane Science</i> , 2020 , 595, 117484	9.6	19
51	Enhanced nucleation of polypropylene by metal-organic frameworks (MOFs) based on aluminium dicarboxylates: influence of structural features. <i>RSC Advances</i> , 2016 , 6, 1907-1912	3.7	18
50	Temperature-induced phase transitions of the ordered superlattice assembly of Au nanoclusters. <i>Journal of Physical Chemistry B</i> , 2005 , 109, 2552-8	3.4	18
49	A single-step room-temperature electrochemical synthesis of nitrogen-doped graphene nanoribbons from carbon nanotubes. <i>Journal of Materials Chemistry A</i> , 2015 , 3, 18222-18228	13	17
48	Charge transport in functionalized multi-wall carbon nanotube-Nafion composite. <i>Journal of Applied Physics</i> , 2012 , 112, 053706	2.5	17
47	High-purity synthesis of scrolled mats of multi-walled carbon nanotubes using temperature modulation. <i>Carbon</i> , 2008 , 46, 567-576	10.4	17
46	Role of Specific N-Containing Active Sites in Interconnected Graphene Quantum Dots for the Enhanced Electrocatalytic Activity towards Oxygen Evolution Reaction. <i>ChemistrySelect</i> , 2017 , 2, 9943-9946	1.8	16
45	C@SiNW/TiO ₂ core-shell nanoarrays with sandwiched carbon passivation layer as high efficiency photoelectrode for water splitting. <i>Scientific Reports</i> , 2014 , 4, 4897	4.9	16
44	High aspect ratio nanoscale multifunctional materials derived from hollow carbon nanofiber by polymer insertion and metal decoration. <i>Chemical Communications</i> , 2010 , 46, 5590-2	5.8	16
43	Investigation of interparticle interactions of larger (4.63 nm) monolayer protected gold clusters during quantized double layer charging. <i>Physical Chemistry Chemical Physics</i> , 2006 , 8, 1837-44	3.6	16
42	A single-step, electrochemical synthesis of nitrogen doped blue luminescent phosphorene quantum dots. <i>Chemical Communications</i> , 2018 , 54, 11733-11736	5.8	14
41	Nanocomposite membrane electrolyte of polyaminobenzene sulfonic acid grafted single walled carbon nanotubes with sulfonated polyether ether ketone for direct methanol fuel cell. <i>International Journal of Hydrogen Energy</i> , 2019 , 44, 27564-27574	6.7	13
40	The role of the molecular structure of carboxylate-alumoxanes in the enhanced nucleation of polypropylene. <i>Chemical Communications</i> , 2015 , 51, 10026-9	5.8	13
39	Synthesis of Rh-carbon nanotube based heterostructures and their enhanced field emission characteristics. <i>Chemical Communications</i> , 2010 , 46, 5671-3	5.8	13

38	CoFe/nitrogen-doped graphene nanoribbons as bi-functional electrocatalyst for oxygen reduction and oxygen evolution. <i>Nanotechnology</i> , 2018 , 29, 415402	3.4	12
37	Fabrication of In-doped SnO ₂ nanowire arrays and its field emission investigations. <i>Journal of Experimental Nanoscience</i> , 2010 , 5, 527-535	1.9	12
36	Solid-state thermal exfoliation of graphite nano-fibers to edge-nitrogenized graphene nanosheets for oxygen reduction reaction. <i>Journal of Colloid and Interface Science</i> , 2019 , 545, 71-81	9.3	11
35	Fractional photo-current dependence of graphene quantum dots prepared from carbon nanotubes. <i>Physical Chemistry Chemical Physics</i> , 2015 , 17, 24566-9	3.6	11
34	Field emission investigation of single Fe-doped SnO ₂ wire. <i>Solid State Sciences</i> , 2009 , 11, 1114-1117	3.4	11
33	Enhanced field emission from hexagonal rhodium nanostructures. <i>Applied Physics Letters</i> , 2008 , 92, 253106	3.6	11
32	Suppression of electron-transfer characteristics of ferrocene by OTS monolayer on a silicon/electrolyte interface. <i>Journal of Colloid and Interface Science</i> , 2006 , 299, 777-84	9.3	11
31	Effect of Dimensionality and Doping in Quasi-"One-Dimensional (1-D)" Nitrogen-Doped Graphene Nanoribbons on the Oxygen Reduction Reaction. <i>ACS Applied Materials & Interfaces</i> , 2017 , 9, 38409-38418	9.5	10
30	Electric field induced transformation of carbon nanotube to graphene nanoribbons using Nafion as a solid polymer electrolyte. <i>Applied Physics Letters</i> , 2014 , 104, 153111	3.4	10
29	3-Dimensionally self-assembled single crystalline platinum nanostructures on few-layer graphene as an efficient oxygen reduction electrocatalyst. <i>RSC Advances</i> , 2013 , 3, 6913	3.7	10
28	Electrochemical sensing of sulphur dioxide: a comparison using dodecanethiol and citrate capped gold nanoclusters. <i>Journal of Nanoscience and Nanotechnology</i> , 2008 , 8, 3184-90	1.3	10
27	Near-complete phase transfer of single-wall carbon nanotubes by covalent functionalization. <i>Journal of Chemical Sciences</i> , 2008 , 120, 599-606	1.8	10
26	Mixed Valent, Distorted Cobalt Ludwigite (Co ₃ BO ₅ /Co ₃ O ₂ BO ₃) and Its Composite with Reduced Multiwalled Carbon Nanotubes (R-MWCNT) in Enhancing the Domain Edge-Sharing Oxygen as Superior Water Oxidation Electrocatalysts. <i>ChemElectroChem</i> , 2018 , 5, 1670-1676	4.3	9
25	Competitive wetting of acetonitrile and dichloromethane in comparison to that of water on functionalized carbon nanotube surfaces. <i>Physical Chemistry Chemical Physics</i> , 2011 , 13, 14668-74	3.6	9
24	Polydentate disulfides for enhanced stability of AuNPs and facile nanocavity formation. <i>Journal of Materials Chemistry</i> , 2012 , 22, 10000		8
23	In situ electrochemical organization of CdSe nanoclusters on graphene during unzipping of carbon nanotubes. <i>Chemical Communications</i> , 2012 , 48, 3088-90	5.8	8
22	Effect of Fe ₃ O ₄ on morphology of Fe ₃ O ₂ hyperbranched heterostructures. <i>Chemical Physics Letters</i> , 2010 , 493, 121-125	2.5	8
21	Role of Structural Distortion in Stabilizing Electrosynthesized Blue-Emitting Phosphorene Quantum Dots. <i>Journal of Physical Chemistry Letters</i> , 2019 , 10, 973-980	6.4	8

20	Electrochemical preparation of vertically aligned, hollow CdSe nanotubes and their p-n junction hybrids with electrodeposited Cu ₂ O. <i>Nanoscale</i> , 2014 , 6, 9148-56	7.7	7
19	Imaging the stomatal physiology of somatic embryo-derived peanut leaves by scanning electrochemical microscopy. <i>Analytical and Bioanalytical Chemistry</i> , 2008 , 391, 2227-33	4.4	7
18	Unraveling the Hydrogen Evolution Reaction Active Sites in N-Functionalized Interconnected Graphene Quantum Dots. <i>ChemistrySelect</i> , 2017 , 2, 4511-4515	1.8	6
17	Ultrafast switching time and third order nonlinear coefficients of microwave treated single walled carbon nanotube suspensions. <i>Journal of Nanoscience and Nanotechnology</i> , 2009 , 9, 5550-4	1.3	6
16	RuO ₂ doped SnO ₂ nanobipyramids on Si (100) as a field emitter. <i>Thin Solid Films</i> , 2008 , 516, 6388-6391	2.2	6
15	Structural and catalytic properties of a novel vanadium containing solid core mesoporous silica shell catalysts for gas phase oxidation reaction. <i>Journal of Chemical Sciences</i> , 2013 , 125, 63-69	1.8	5
14	Imaging hydrogen oxidation activity of catalyst-coated perfluoro sulfonic acid-polymer electrolyte membranes using Scanning Electrochemical Microscopy. <i>Journal of Chemical Sciences</i> , 2009 , 121, 719-725	1.8	5
13	Y-junction nanostructures of palladium: Enhanced electrocatalytic properties for fuel cell reactions. <i>Journal of Electroanalytical Chemistry</i> , 2009 , 627, 58-62	4.1	5
12	Tuning the Transport Properties of Poly(oxyethylene)bisamine/Nafion Polyelectrolyte Complexes by Dielectric Manipulation. <i>Macromolecules</i> , 2008 , 41, 3653-3658	5.5	5
11	Effect of Reversible Lithium Ion Intercalation on the Size-Dependent Optical Properties of Graphene Quantum Dots. <i>Journal of the Electrochemical Society</i> , 2016 , 163, A1112-A1119	3.9	5
10	Electrochemical transformation of black phosphorous to phosphorene quantum dots: effect of nitrogen doping. <i>Materials Research Express</i> , 2020 , 7, 014005	1.7	4
9	Tunable optical features from self-organized rhodium nanostructures. <i>Applied Physics Letters</i> , 2010 , 96, 233102	3.4	4
8	Bio-inspired catalyst compositions for enhanced oxygen reduction using nanostructured Pt electrocatalysts in polymer electrolyte fuel cells. <i>Journal of Materials Chemistry</i> , 2010 , 20, 9651		4
7	Nanometer sized tridecylamine capped Rhodium dispersed on high surface area support: catalytic investigations. <i>Journal of Nanoscience and Nanotechnology</i> , 2007 , 7, 2870-6	1.3	4
6	Synthesis of Sb-Doped SnO ₂ Nanowires and Hyperbranched Structures. <i>Science of Advanced Materials</i> , 2009 , 1, 38-43	2.3	4
5	Role of polyfunctional organic molecules in the synthesis and assembly of metal nanoparticles. <i>Journal of Nanoscience and Nanotechnology</i> , 2007 , 7, 2139-50	1.3	3
4	Adsorption Kinetics of WS Quantum Dots onto a Polycrystalline Gold Surface. <i>Langmuir</i> , 2018 , 34, 5374-5380	1.8	2
3	Electrochemical Exfoliation of Graphite to Fluorographene: An Effect of Degree of Functionalization on 2Br ⁻ /Br ₂ Redox Reaction. <i>ChemistrySelect</i> , 2019 , 4, 11385-11393	1.8	2

- 2 'All-solid-state' electrochemistry of a protein-confined polymer electrolyte film. *Biochemical and Biophysical Research Communications*, **2007**, 364, 86-91 3.4 2
- 1 Low-Cost Nanomaterials for High-Performance Polymer Electrolyte Fuel Cells (PEMFCs). *Green Energy and Technology*, **2014**, 359-394 0.6