

# Bhaghavathi P Vinayan

## List of Publications by Year in descending order

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111  
papers

6,753  
citations

94381

37  
h-index

60583

81  
g-index

111  
all docs

111  
docs citations

111  
times ranked

10239  
citing authors

#	ARTICLE	IF	CITATIONS
1	A Raman spectroscopic investigation of graphite oxide derived graphene. AIP Advances, 2012, 2, .	0.6	709
2	Functionalized Graphene-Based Nanocomposites for Supercapacitor Application. Journal of Physical Chemistry C, 2011, 115, 14006-14013.	1.5	377
3	Graphene synthesis via hydrogen induced low temperature exfoliation of graphite oxide. Journal of Materials Chemistry, 2010, 20, 8467.	6.7	317
4	Effect of Nitrogen Doping on Hydrogen Storage Capacity of Palladium Decorated Graphene. Langmuir, 2012, 28, 7826-7833.	1.6	271
5	Synthesis of graphene-multiwalled carbon nanotubes hybrid nanostructure by strengthened electrostatic interaction and its lithium ion battery application. Journal of Materials Chemistry, 2012, 22, 9949.	6.7	256
6	Performance study of magnesium-sulfur battery using a graphene based sulfur composite cathode electrode and a non-nucleophilic Mg electrolyte. Nanoscale, 2016, 8, 3296-3306.	2.8	247
7	Novel Platinum-Cobalt Alloy Nanoparticles Dispersed on Nitrogen-Doped Graphene as a Cathode Electrocatalyst for PEMFC Applications. Advanced Functional Materials, 2012, 22, 3519-3526.	7.8	234
8	Toward Highly Reversible Magnesium-Sulfur Batteries with Efficient and Practical Mg[B(hfip) <sub>4</sub> ] <sub>2</sub> Electrolyte. ACS Energy Letters, 2018, 3, 2005-2013.	8.8	234
9	Investigation of Spillover Mechanism in Palladium Decorated Hydrogen Exfoliated Functionalized Graphene. Journal of Physical Chemistry C, 2011, 115, 15679-15685.	1.5	200
10	Polyaniline-MnO <sub>2</sub> nanotube hybrid nanocomposite as supercapacitor electrode material in acidic electrolyte. Journal of Materials Chemistry, 2011, 21, 17601.	6.7	200
11	Synthesis and nanofluid application of silver nanoparticles decorated graphene. Journal of Materials Chemistry, 2011, 21, 9702.	6.7	193
12	Functionalized graphene reinforced thermoplastic nanocomposites as strain sensors in structural health monitoring. Journal of Materials Chemistry, 2011, 21, 12626.	6.7	172
13	Top down method for synthesis of highly conducting graphene by exfoliation of graphite oxide using focused solar radiation. Journal of Materials Chemistry, 2011, 21, 6800.	6.7	158
14	Nanostructured polyaniline decorated graphene sheets for reversible CO <sub>2</sub> capture. Journal of Materials Chemistry, 2012, 22, 3708.	6.7	152
15	Platinum-TM (TM = Fe, Co) alloy nanoparticles dispersed nitrogen doped (reduced graphene) Tj ETQq1 PEMFC applications. Nanoscale, 2013, 5, 5109.	2.8	145
16	Green synthesis of boron doped graphene and its application as high performance anode material in Li ion battery. Materials Research Bulletin, 2015, 61, 383-390.	2.7	144
17	Facile synthesis of SnO <sub>2</sub> nanoparticles dispersed nitrogen doped graphene anode material for ultrahigh capacity lithium ion battery applications. Journal of Materials Chemistry A, 2013, 1, 3865.	5.2	120
18	Enhanced optical limiting in functionalized hydrogen exfoliated graphene and its metal hybrids. Journal of Materials Chemistry C, 2013, 1, 2773.	2.7	109

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19	Facile synthesis of triangular shaped palladium nanoparticles decorated nitrogen doped graphene and their catalytic study for renewable energy applications. International Journal of Hydrogen Energy, 2013, 38, 2240-2250.	3.8	107
20	Catalytic activity of platinum-cobalt alloy nanoparticles decorated functionalized multiwalled carbon nanotubes for oxygen reduction reaction in PEMFC. International Journal of Hydrogen Energy, 2012, 37, 412-421.	3.8	93
21	Multi-Electron Reactions Enabled by Anion-Based Redox Chemistry for High-Energy Multivalent Rechargeable Batteries. Angewandte Chemie - International Edition, 2020, 59, 11483-11490.	7.2	91
22	High-performance Platinum-free oxygen reduction reaction and hydrogen oxidation reaction catalyst in polymer electrolyte membrane fuel cell. Scientific Reports, 2018, 8, 3591.	1.6	89
23	Carbon nanotube bottles for incorporation, release and enhanced cytotoxic effect of cisplatin. Carbon, 2012, 50, 1625-1634.	5.4	86
24	Overcoming the Interfacial Limitations Imposed by the Solid-Solid Interface in Solid-State Batteries Using Ionic Liquid-Based Interlayers. Small, 2020, 16, e2000279.	5.2	75
25	Recent advances in hydrogen storage using catalytically and chemically modified graphene nanocomposites. Journal of Materials Chemistry A, 2017, 5, 22897-22912.	5.2	73
26	Synthesis and investigation of mechanism of platinum-graphene electrocatalysts by novel co-reduction techniques for proton exchange membrane fuel cell applications. Journal of Materials Chemistry, 2012, 22, 25325.	6.7	71
27	Solar light assisted green synthesis of palladium nanoparticle decorated nitrogen doped graphene for hydrogen storage application. Journal of Materials Chemistry A, 2013, 1, 11192.	5.2	70
28	In vivo biodistribution of platinum-based drugs encapsulated into multi-walled carbon nanotubes. Nanomedicine: Nanotechnology, Biology, and Medicine, 2014, 10, 1465-1475.	1.7	56
29	Insights into the electrochemical processes of rechargeable magnesium-sulfur batteries with a new cathode design. Journal of Materials Chemistry A, 2019, 7, 25490-25502.	5.2	53
30	Facile synthesis of one dimensional graphene wrapped carbon nanotube composites by chemical vapour deposition. Journal of Materials Chemistry, 2011, 21, 15179.	6.7	52
31	Hybrid carbon nanostructured ensembles as chemiresistive hydrogen gas sensors. Carbon, 2011, 49, 227-236.	5.4	51
32	Green synthesis of nitrogen-doped self-assembled porous carbon-metal oxide composite towards energy and environmental applications. Scientific Reports, 2019, 9, 5187.	1.6	50
33	Pt Nanoparticle-Dispersed Graphene-Wrapped MWNT Composites As Oxygen Reduction Reaction Electrocatalyst in Proton Exchange Membrane Fuel Cell. ACS Applied Materials & Interfaces, 2012, 4, 3805-3810.	4.0	48
34	Hetero-layered MoS <sub>2</sub> /C composites enabling ultrafast and durable Na storage. Energy Storage Materials, 2019, 21, 115-123.	9.5	46
35	Investigation on the formation of Mg metal anode/electrolyte interfaces in Mg/S batteries with electrolyte additives. Journal of Materials Chemistry A, 2020, 8, 22998-23010.	5.2	46
36	Electrochemical and compositional characterization of solid interphase layers in an interface-modified solid-state Li-sulfur battery. Journal of Materials Chemistry A, 2020, 8, 16451-16462.	5.2	44

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37	Polyaniline/multiwalled carbon nanotubes nanocomposite-an excellent reversible CO <sub>2</sub> capture candidate. RSC Advances, 2012, 2, 1746.	1.7	42
38	Facile and simultaneous production of metal/metal oxide dispersed graphene nano composites by solar exfoliation. Journal of Materials Chemistry, 2011, 21, 17094.	6.7	39
39	Design of Nickel-Based Cation-Disordered Rock-Salt Oxides: The Effect of Transition Metal (M = V, Ti) Tj ETQq1 1 0.784314 rgBT /Ove Materials & Interfaces, 2018, 10, 21957-21964.	4.0	37
40	Enhanced optical limiting and carrier dynamics in metal oxide-hydrogen exfoliated graphene hybrids. Journal of Materials Chemistry C, 2014, 2, 10116-10123.	2.7	36
41	Nitrogen Rich Hierarchically Organized Porous Carbon/Sulfur Composite Cathode Electrode for High Performance Li/S Battery: A Mechanistic Investigation by Operando Spectroscopic Studies. Advanced Materials Interfaces, 2016, 3, 1600372.	1.9	36
42	An efficient electrode material for high performance solid-state hybrid supercapacitors based on a Cu/CuO/porous carbon nanofiber/TiO <sub>2</sub> hybrid composite. Beilstein Journal of Nanotechnology, 2019, 10, 781-793.	1.5	36
43	Enhanced red emission from YVO <sub>4</sub> :Eu <sup>3+</sup> nano phosphors prepared by simple Co-Precipitation Method. Electronic Materials Letters, 2011, 7, 161-165.	1.0	35
44	Platinum-decorated chemically modified reduced graphene oxide–multiwalled carbon nanotube sandwich composite as cathode catalyst for a proton exchange membrane fuel cell. RSC Advances, 2014, 4, 26140.	1.7	35
45	Iron encapsulated nitrogen and sulfur co-doped few layer graphene as a non-precious ORR catalyst for PEMFC application. RSC Advances, 2015, 5, 66494-66501.	1.7	34
46	Tri-iodide reduction activity of ultra-small size PtFe nanoparticles supported nitrogen-doped graphene as counter electrode for dye-sensitized solar cell. Journal of Colloid and Interface Science, 2017, 488, 309-316.	5.0	34
47	Enhanced hydrogen storage performance in Pd <sub>3</sub> Co decorated nitrogen/boron doped graphene composites. International Journal of Hydrogen Energy, 2018, 43, 8018-8025.	3.8	34
48	Oxygen Activity in Li-Rich Disordered Rock-Salt Oxide and the Influence of LiNbO <sub>3</sub> Surface Modification on the Electrochemical Performance. Chemistry of Materials, 2019, 31, 4330-4340.	3.2	33
49	Magnesium oxide modified nitrogen-doped porous carbon composite as an efficient candidate for high pressure carbon dioxide capture and methane storage. Journal of Colloid and Interface Science, 2019, 539, 245-256.	5.0	33
50	Soft functionalization of graphene for enhanced tri-iodide reduction in dye sensitized solar cells. Journal of Materials Chemistry, 2012, 22, 8377.	6.7	32
51	Magnetic field assisted high capacity durable Li-ion battery using magnetic $\gamma$ -Fe <sub>2</sub> O <sub>3</sub> nanoparticles decorated expired drug derived N-doped carbon anode. Scientific Reports, 2020, 10, 9945.	1.6	31
52	Synthesis of a nitrogen rich (2D–1D) hybrid carbon nanomaterial using a MnO <sub>2</sub> nanorod template for high performance Li-ion battery applications. Journal of Materials Chemistry A, 2015, 3, 6810-6818.	5.2	29
53	Spontaneous and specific myogenic differentiation of human mesenchymal stem cells on polyethylene glycol-linked multi-walled carbon nanotube films for skeletal muscle engineering. Nanoscale, 2015, 7, 18239-18249.	2.8	29
54	Magnetite decorated graphite nanoplatelets as cost effective CO <sub>2</sub> adsorbent. Journal of Materials Chemistry, 2011, 21, 7467.	6.7	28

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55	Oxygen reduction reaction activity of platinum nanoparticles decorated nitrogen doped carbon in proton exchange membrane fuel cell under real operating conditions. <i>International Journal of Hydrogen Energy</i> , 2016, 41, 13163-13170.	3.8	28
56	Palladium nanoparticles decorated graphite nanoplatelets for room temperature carbon dioxide adsorption. <i>Chemical Engineering Journal</i> , 2012, 187, 10-15.	6.6	27
57	Highly Durable Platinum based Cathode Electrocatalysts for PEMFC Application using Oxygen and Nitrogen Functional Groups Attached Nanocarbon Supports. <i>Fuel Cells</i> , 2015, 15, 278-287.	1.5	27
58	Platinum and platinum-iron alloy nanoparticles dispersed nitrogen-doped graphene as high performance room temperature hydrogen sensor. <i>International Journal of Hydrogen Energy</i> , 2015, 40, 10346-10353.	3.8	27
59	Synergistic Role of Electrolyte and Binder for Enhanced Electrochemical Storage for Sodium-Ion Battery. <i>ACS Omega</i> , 2018, 3, 9945-9955.	1.6	27
60	Suppressing Dissolution of Vanadium from Cation-Disordered $\text{Li}_2\text{VO}_2\text{F}$ via a Concentrated Electrolyte Approach. <i>Chemistry of Materials</i> , 2019, 31, 7941-7950.	3.2	27
61	Alkali metal insertion into hard carbon – the full picture. <i>Journal of Materials Chemistry A</i> , 2020, 8, 14205-14213.	5.2	27
62	Combining Quinone-Based Cathode with an Efficient Borate Electrolyte for High-Performance Magnesium Batteries. <i>Batteries and Supercaps</i> , 2021, 4, 1850-1857.	2.4	26
63	Boron and nitrogen co-doped carbon nanosheets encapsulating nano iron as an efficient catalyst for electrochemical CO <sub>2</sub> reduction utilizing a proton exchange membrane CO <sub>2</sub> conversion cell. <i>Journal of Colloid and Interface Science</i> , 2020, 559, 169-177.	5.0	24
64	Rechargeable Calcium-Sulfur Batteries Enabled by an Efficient Borate-Based Electrolyte. <i>Small</i> , 2020, 16, e2001806.	5.2	24
65	Development of a nitrogen-doped 2D material for tribological applications in the boundary-lubrication regime. <i>Beilstein Journal of Nanotechnology</i> , 2017, 8, 1476-1483.	1.5	23
66	Performance of Partially Exfoliated Nitrogen-Doped Carbon Nanotubes Wrapped with Hierarchical Porous Carbon in Electrolytes. <i>ChemSusChem</i> , 2018, 11, 1664-1677.	3.6	23
67	Hydrogen Storage Studies of Palladium Decorated Nitrogen Doped Graphene Nanoplatelets. <i>Journal of Nanoscience and Nanotechnology</i> , 2012, 12, 6608-6614.	0.9	22
68	One time nose-only inhalation of MWCNTs: Exploring the mechanism of toxicity by intermittent sacrifice in Wistar rats. <i>Toxicology Reports</i> , 2015, 2, 111-120.	1.6	21
69	Design and Tuning of the Electrochemical Properties of Vanadium-Based Cation-Disordered Rock-Salt Oxide Positive Electrode Material for Lithium-Ion Batteries. <i>ACS Applied Materials &amp; Interfaces</i> , 2019, 11, 39848-39858.	4.0	21
70	Studies on graphene enfolded olivine composite electrode material via polyol technique for high rate performance lithium-ion batteries. <i>Electronic Materials Letters</i> , 2015, 11, 841-852.	1.0	20
71	Vanadium Oxyfluoride/Few-Layer Graphene Composite as a High-Performance Cathode Material for Lithium Batteries. <i>Inorganic Chemistry</i> , 2016, 55, 3789-3796.	1.9	20
72	Graphene supported MgNi alloy nanocomposite as a room temperature hydrogen storage material – Experiments and theoretical insights. <i>Acta Materialia</i> , 2021, 215, 117040.	3.8	20

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73	Catalytic performance of non-platinum-based hybrid carbon hetero-structure for oxygen reduction and hydrogen oxidation reactions in proton exchange membrane fuel cell. <i>International Journal of Hydrogen Energy</i> , 2018, 43, 18477-18487.	3.8	19
74	Mechanical Milling Assisted Synthesis and Electrochemical Performance of High Capacity LiFeBO <sub>3</sub> for Lithium Batteries. <i>ACS Applied Materials &amp; Interfaces</i> , 2016, 8, 2166-2172.	4.0	18
75	Utilization of TiO <sub>2</sub> /gC <sub>3</sub> N <sub>4</sub> nanoadditive to boost oxidative properties of vegetable oil for tribological application. <i>Friction</i> , 2021, 9, 273-287.	3.4	18
76	An optically transparent cathode for dye sensitized solar cells based on cationically functionalized and metal decorated graphene. <i>Nano Energy</i> , 2012, 1, 757-763.	8.2	17
77	Diatom frustule-graphene based nanomaterial for room temperature hydrogen storage. <i>International Journal of Hydrogen Energy</i> , 2020, 45, 764-773.	3.8	17
78	Multi-Electron Reactions Enabled by Anion-Based Redox Chemistry for High-Energy Multivalent Rechargeable Batteries. <i>Angewandte Chemie</i> , 2020, 132, 11580-11587.	1.6	15
79	Multi-walled carbon nanotube-induced inhalation toxicity: Recognizing nano bis-demethoxy curcumin analog as an ameliorating candidate. <i>Nanomedicine: Nanotechnology, Biology, and Medicine</i> , 2018, 14, 1809-1822.	1.7	13
80	Optimizing metal-support interphase for efficient fuel cell oxygen reduction reaction catalyst. <i>Journal of Colloid and Interface Science</i> , 2020, 561, 439-448.	5.0	13
81	Carbon nanostructure grown using bi-metal oxide as electrocatalyst support for proton exchange membrane fuel cell. <i>International Journal of Hydrogen Energy</i> , 2013, 38, 6460-6468.	3.8	12
82	1D-2D integrated hybrid carbon nanostructure supported bimetallic alloy catalyst for ethanol oxidation and oxygen reduction reactions. <i>International Journal of Hydrogen Energy</i> , 2019, 44, 4951-4961.	3.8	11
83	Toxicity of Graphene: An Update. <i>Reviews of Environmental Contamination and Toxicology</i> , 2021, 259, 51-76.	0.7	10
84	Investigations of hydrogen storage in palladium decorated graphene nanoplatelets. <i>Transactions of the Indian Institute of Metals</i> , 2011, 64, 169-173.	0.7	9
85	Electrochemical catalytic activity study of nitrogen-containing hierarchically porous carbon and its application in dye-sensitized solar cells. <i>RSC Advances</i> , 2016, 6, 96109-96120.	1.7	9
86	Multi-edged wrinkled graphene-like carbon-wrapped carbon nanotubes and highly conductive Pt-free counter electrode for dye-sensitized solar cells. <i>Journal of Nanoparticle Research</i> , 2014, 16, 1.	0.8	8
87	Investigation of the Anode-Electrolyte Interface in a Magnesium Full-Cell with Fluorinated Alkoxyborate-Based Electrolyte. <i>Batteries and Supercaps</i> , 2022, 5, .	2.4	8
88	Heteroatom-Doped Graphene-Based Hybrid Materials for Hydrogen Energy Conversion. , 2016, , .		7
89	Theoretical Insights into the Experimental Observation of Stable p-Type Conductivity and Ferromagnetic Ordering in Vacuum-Hydrogenated TiO <sub>2</sub> . <i>Journal of Physical Chemistry C</i> , 2017, 121, 14359-14366.	1.5	7
90	Photocatalysts for hydrogen generation and organic contaminants degradation. , 2018, , 215-236.		7

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91	Binary reaction ingrained high current density and long cycle life novel anode material for lithium ion battery. Journal of Materials Chemistry A, 2017, 5, 2784-2791.	5.2	6
92	Platinum Nanoparticle Decorated Expired Drug-Derived N-Doped Ketjenblack Carbon as Efficient Catalyst for PEM Fuel Cells. Journal of the Electrochemical Society, 2021, 168, 064517.	1.3	6
93	Nitrogen-Containing Hierarchically Porous Tubular Carbon as an Efficient Counter Electrode for Dye-Sensitized Solar Cells. IEEE Journal of Photovoltaics, 2019, 9, 700-709.	1.5	5
94	Calcium-Sulfur Batteries: Rechargeable Calcium-Sulfur Batteries Enabled by an Efficient Borate-Based Electrolyte (Small 39/2020). Small, 2020, 16, 2070216.	5.2	5
95	A novel, highly sensitive electrochemical 1,4-dioxane sensor based on reduced graphene oxide-curcumin nanocomposite. RSC Advances, 2022, 12, 19375-19383.	1.7	5
96	Graphene/Ionic Liquid Binary Electrode Material for High Performance Supercapacitor. , 2011, , .		4
97	Facile Synthesis of Platinum Decorated Graphene Wrapped Multiwalled Carbon Nanotube and Its Hydrogen Storage Properties. Nano Communications, 2014, 1, 4-10.	0.0	3
98	Au/TiO <sub>2</sub> NANOTUBES FOR SELECTIVE DETECTION OF DOPAMINE. International Journal of Nanoscience, 2011, 10, 1185-1189.	0.4	2
99	Platinum-Iron Alloy Nanoparticles Dispersed Multiwalled Carbon Nanotubes As Cathode Electrocatalyst for PEMFC. , 2011, , .		2
100	Investigation of oxygen reduction and methanol oxidation reaction activity of PtAu nano-alloy on surface modified porous hybrid nanocarbon supports. Materials Research Express, 2016, 3, 095017.	0.8	2
101	Solid-State Batteries: Overcoming the Interfacial Limitations Imposed by the Solid-Solid Interface in Solid-State Batteries Using Ionic Liquid-Based Interlayers (Small 14/2020). Small, 2020, 16, 2070078.	5.2	2
102	Design and development of an automated experimental setup for ion transport measurements. Review of Scientific Instruments, 2022, 93, 064104.	0.6	2
103	High pressure CO <sub>2</sub> adsorption in functionalized graphite nanoplatelets. , 2010, , .		1
104	Hydrogen Exfoliated Graphene As Counter Electrode for Dye Sensitized Solar Cells. , 2011, , .		1
105	Metal-semiconductor core-shell nanomaterials for energy applications. , 2017, , 99-132.		1
106	Nitrogen-Containing Tubular Hollow Carbon Frameworks: A Nongraphitic Carbon for a Robust Room Temperature Hydrogen Gas Sensing Application. , 2021, 5, 1-4.		1
107	Invasive Species Prosopis juliflora Derived Carbon Biomass/SnO <sub>2</sub> based Hazardous NO <sub>2</sub> Gas Sensor. , 2021, , .		1
108	The High Pressure Hydrogen Storage Study of Functionalized Graphite Nanoplatelets. , 2011, , .		0

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109	Battery Technology: Nitrogen Rich Hierarchically Organized Porous Carbon/Sulfur Composite Cathode Electrode for High Performance Li/S Battery: A Mechanistic Investigation by Operando Spectroscopic Studies (Adv. Mater. Interfaces 19/2016). Advanced Materials Interfaces, 2016, 3, .	1.9	0
110	High Pressure Hydrogen Storage Study of Few Layer Graphene-Transition Metal Alloy Nanocomposite. Graphene, 2014, 2, 123-127.	0.2	0
111	An Investigation of the Electrochemical Processes in Magnesium-Sulfur Batteries By Operando Spectroscopy Techniques. ECS Meeting Abstracts, 2020, MA2020-02, 353-353.	0.0	0