

Aditya Rawal

List of Publications by Year in descending order

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112
papers

3,549
citations

172207

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161609

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g-index

116
all docs

116
docs citations

116
times ranked

5469
citing authors

#	ARTICLE	IF	CITATIONS
1	Strongly bound citrate stabilizes the apatite nanocrystals in bone. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 22425-22429.	3.3	438
2	Shifting paradigms: development of high-efficiency biochar fertilizers based on nano-structures and soluble components. Carbon Management, 2013, 4, 323-343.	1.2	310
3	Mineralâ€Biochar Composites: Molecular Structure and Porosity. Environmental Science & Technology, 2016, 50, 7706-7714.	4.6	148
4	Improving the Acidic Stability of Zeolitic Imidazolate Frameworks by Biofunctional Molecules. Chem, 2019, 5, 1597-1608.	5.8	148
5	Chloride diffusion resistance and chloride binding capacity of fly ash-based geopolymer concrete. Cement and Concrete Composites, 2020, 105, 103290.	4.6	139
6	Hierarchically Porous Biocatalytic MOF Microreactor as a Versatile Platform towards Enhanced Multienzyme and Cofactorâ€Dependent Biocatalysis. Angewandte Chemie - International Edition, 2021, 60, 5421-5428.	7.2	98
7	Molecular Silicate and Aluminate Species in Anhydrous and Hydrated Cements. Journal of the American Chemical Society, 2010, 132, 7321-7337.	6.6	83
8	Biochar-based fertilizer: Supercharging root membrane potential and biomass yield of rice. Science of the Total Environment, 2020, 713, 136431.	3.9	78
9	Feeding Biochar to Cows: An Innovative Solution for Improving Soil Fertility and Farm Productivity. Pedosphere, 2015, 25, 666-679.	2.1	74
10	Biocatalytic self-propelled submarine-like metal-organic framework microparticles with pH-triggered buoyancy control for directional vertical motion. Materials Today, 2019, 28, 10-16.	8.3	73
11	Enhanced colloidal stability and protein resistance of layered double hydroxide nanoparticles with phosphonic acid-terminated PEG coating for drug delivery. Journal of Colloid and Interface Science, 2018, 521, 242-251.	5.0	62
12	Origins of saccharide-dependent hydration at aluminate, silicate, and aluminosilicate surfaces. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 8949-8954.	3.3	61
13	Nanoconfined lithium aluminium hydride (LiAlH ₄) and hydrogen reversibility. International Journal of Hydrogen Energy, 2017, 42, 14144-14153.	3.8	58
14	Transformation of E-Waste Plastics into Sustainable Filaments for 3D Printing. ACS Sustainable Chemistry and Engineering, 2018, 6, 14432-14440.	3.2	56
15	Redox tunable viologen-based porous organic polymers. Journal of Materials Chemistry C, 2016, 4, 2535-2544.	2.7	55
16	Understanding and Controlling Organicâ€Inorganic Interfaces in Mesosstructured Hybrid Photovoltaic Materials. Journal of the American Chemical Society, 2011, 133, 10119-10133.	6.6	54
17	Analysis of Phase Separation in High Performance PbTeâ€PbS Thermoelectric Materials. Advanced Functional Materials, 2013, 23, 747-757.	7.8	52
18	The Effect of Drug Loading on Micelle Properties: Solidâ€State NMR as a Tool to Gain Structural Insight. Angewandte Chemie - International Edition, 2017, 56, 8441-8445.	7.2	50

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19	Nanocellulose characteristics from the inner and outer layer of banana pseudo-stem prepared by TEMPO-mediated oxidation. <i>Cellulose</i> , 2016, 23, 3023-3037.	2.4	49
20	Analysis of thermal degradation kinetics and carbon structure changes of co-pyrolysis between macadamia nut shell and PET using thermogravimetric analysis and ¹³ C solid state nuclear magnetic resonance. <i>Energy Conversion and Management</i> , 2014, 86, 154-164.	4.4	47
21	Hydrogen storage properties of nanoconfined aluminium hydride (AlH ₃). <i>Chemical Engineering Science</i> , 2019, 194, 64-70.	1.9	46
22	A new NMR method for determining the particle thickness in nanocomposites, using T ₂ H-selective X{H1} recoupling. <i>Journal of Chemical Physics</i> , 2007, 126, 054701.	1.2	42
23	Superior Chemotherapeutic Benefits from the Ruthenium-Based Anti-Metastatic Drug NAMI-A through Conjugation to Polymeric Micelles. <i>Macromolecules</i> , 2014, 47, 1646-1655.	2.2	40
24	Synthesis and characterization of self-assembled block copolymer templated calcium phosphate nanocomposite gels. <i>Journal of Materials Chemistry</i> , 2007, 17, 1570.	6.7	36
25	Unifying Design Strategies in Demosponge and Hexactinellid Skeletal Systems. <i>Journal of Adhesion</i> , 2010, 86, 72-95.	1.8	36
26	Pyrolysis of attapulgite clay blended with yak dung enhances pasture growth and soil health: Characterization and initial field trials. <i>Science of the Total Environment</i> , 2017, 607-608, 184-194.	3.9	36
27	Molecular interactions in coupled PMMA- ⁶⁶ bioglass hybrid networks. <i>Journal of Materials Chemistry B</i> , 2013, 1, 1835.	2.9	34
28	Synthesis and Characterization of Ionic Block Copolymer Templated Calcium Phosphate Nanocomposites. <i>Chemistry of Materials</i> , 2008, 20, 5922-5932.	3.2	33
29	Exploiting stable radical states for multifunctional properties in triarylamine-based porous organic polymers. <i>Journal of Materials Chemistry A</i> , 2014, 2, 12466-12474.	5.2	33
30	Amorphous nanoparticles by self-assembly: processing for controlled release of hydrophobic molecules. <i>Soft Matter</i> , 2019, 15, 2400-2410.	1.2	29
31	Molecular structures driving pseudo-capacitance in hydrothermal nanostructured carbons. <i>RSC Advances</i> , 2016, 6, 12964-12976.	1.7	28
32	Hierarchically Porous Biocatalytic MOF Microreactor as a Versatile Platform towards Enhanced Multienzyme and Cofactor-Dependent Biocatalysis. <i>Angewandte Chemie</i> , 2021, 133, 5481-5488.	1.6	27
33	Zirconium phosphonate sorbents with tunable structure and function. <i>Microporous and Mesoporous Materials</i> , 2017, 252, 90-104.	2.2	27
34	Detection of Nanometer-Scale Mixing in Phosphate-Glass/Polyamide-6 Hybrids by ¹ H- ³¹ P NMR. <i>Chemistry of Materials</i> , 2006, 18, 6333-6338.	3.2	26
35	Sodium insertion/extraction from single-walled and multi-walled carbon nanotubes: The differences and similarities. <i>Journal of Power Sources</i> , 2016, 314, 102-108.	4.0	26
36	Liquid-phase exfoliation of F-diamane-like nanosheets. <i>Carbon</i> , 2021, 175, 124-130.	5.4	26

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37	Specific molecular structure changes and radical evolution during biomassâ€“polyethylene terephthalate co-pyrolysis detected by ¹³ C and ¹ H solid-state NMR. <i>Bioresource Technology</i> , 2014, 170, 248-255.	4.8	25
38	High population and dispersion of pentacoordinated AlV species on the surface of flame-made amorphous silica-alumina. <i>Science Bulletin</i> , 2019, 64, 516-523.	4.3	25
39	Microstructural characterization of white charcoal. <i>Journal of Analytical and Applied Pyrolysis</i> , 2014, 109, 215-221.	2.6	24
40	Carborane functionalization of the aromatic network in chemically-synthesized graphene. <i>Chemical Communications</i> , 2014, 50, 11332.	2.2	23
41	Dispersion of Silicate in Tricalcium Phosphate Elucidated by Solid-State NMR. <i>Chemistry of Materials</i> , 2008, 20, 2583-2591.	3.2	22
42	Nanostructured LiMnO ₂ with Li ₃ PO ₄ Integrated at the Atomic Scale for High-Energy Electrode Materials with Reversible Anionic Redox. <i>ACS Central Science</i> , 2020, 6, 2326-2338.	5.3	22
43	Lattice evolution and enhanced piezoelectric properties of hydrothermally synthesised 0.94(Bi _{0.5} Na _{0.5})TiO ₃ â€“0.06BaTiO ₃ nanofibers. <i>Journal of Materials Chemistry C</i> , 2017, 5, 10976-10984.	2.7	21
44	Novel multidimensional carbons from structural transformations of waste lignin: A low temperature pyrolysis investigation. <i>Fuel Processing Technology</i> , 2017, 166, 312-321.	3.7	20
45	DNP NMR spectroscopy reveals new structures, residues and interactions in wild spider silks. <i>Chemical Communications</i> , 2019, 55, 4687-4690.	2.2	20
46	Shock Exfoliation of Graphene Fluoride in Microwave. <i>Small</i> , 2020, 16, e1903397.	5.2	20
47	Electrochemical phase evolution of tetradymite-type Bi ₂ Te ₃ in lithium, sodium and potassium ion half cells. <i>Journal of Alloys and Compounds</i> , 2021, 854, 155621.	2.8	20
48	Structural Complexity of Graphene Oxide: The Kirigami Model. <i>ACS Applied Materials & Interfaces</i> , 2021, 13, 18255-18263.	4.0	20
49	Reduced Crystallinity and Mobility of Nylon-6 Confined near the Organicâ€“Inorganic Interface in a Phosphate Glass-Rich Nanocomposite Detected by ¹³ C NMR. <i>Macromolecules</i> , 2011, 44, 8100-8105.	2.2	19
50	Predictive Model of Setting Times and Compressive Strengths for Low-Alkali, Ambient-Cured, Fly Ash/Slag-Based Geopolymers. <i>Minerals (Basel, Switzerland)</i> , 2020, 10, 920.	0.8	19
51	Mechanisms of Sodium Insertion/Extraction on the Surface of Defective Graphenes. <i>ACS Applied Materials & Interfaces</i> , 2017, 9, 431-438.	4.0	18
52	Electroactive Co(salen) metal complexes and the electrophoretic deposition of their porous organic polymers onto glassy carbon. <i>RSC Advances</i> , 2018, 8, 24128-24142.	1.7	18
53	The electronic, optical and magnetic consequences of delocalization in multifunctional donorâ€“acceptor organic polymers. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 11252-11259.	1.3	17
54	Nanosizing Ammonia Borane with Nickel: A Path toward the Direct Hydrogen Release and Uptake of Bi ₂ Ni ₂ H Systems. <i>Advanced Sustainable Systems</i> , 2018, 2, 1700122.	2.7	17

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55	Polymorphic Transformation of Drugs Induced by Glycopolymers Vesicles Designed for Anticancer Therapy Probed by Solid-State NMR Spectroscopy. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 28278-28288.	4.0	17
56	Photo-driven synthesis of polymer-coated platinumized ZnO nanoparticles with enhanced photoelectrochemical charge transportation. <i>Journal of Materials Chemistry A</i> , 2017, 5, 4568-4575.	5.2	16
57	Cooperative defect-enriched SiO ₂ for oxygen activation and organic dehydrogenation. <i>Journal of Catalysis</i> , 2019, 376, 168-179.	3.1	16
58	Nanoconfinement of Complex Borohydrides for Hydrogen Storage. <i>ACS Applied Nano Materials</i> , 2021, 4, 973-978.	2.4	16
59	Formation of carbyne-like materials during low temperature pyrolysis of lignocellulosic biomass: A natural resource of linear sp carbons. <i>Scientific Reports</i> , 2017, 7, 16832.	1.6	15
60	Formation of aluminium hydride (AlH ₃) via the decomposition of organoaluminium and hydrogen storage properties. <i>International Journal of Hydrogen Energy</i> , 2018, 43, 16749-16757.	3.8	15
61	Aliphatic hydrocarbon content of interstellar dust. <i>Monthly Notices of the Royal Astronomical Society</i> , 2018, 479, 4336-4344.	1.6	15
62	Aprotic vs Protic Ionic Liquids for Lignocellulosic Biomass Pretreatment: Anion Effects, Enzymatic Hydrolysis, Solid-State NMR, Distillation, and Recycle. <i>ACS Sustainable Chemistry and Engineering</i> , 0, , .	3.2	15
63	Evidence of Decoupling Protein Structure from Spidroin Expression in Spider Dragline Silks. <i>International Journal of Molecular Sciences</i> , 2016, 17, 1294.	1.8	14
64	Zirconium bistriazolylpyridine phosphonate materials for efficient, selective An(<i>iii</i>)/Ln(<i>iii</i>) separations. <i>Chemical Communications</i> , 2019, 55, 1168-1171.	2.2	14
65	Facile Self-Forming Superionic Conductors Based on Complex Borohydride Surface Oxidation. <i>Advanced Sustainable Systems</i> , 2020, 4, 1900113.	2.7	14
66	Core-Shell NaBH ₄ @Na ₂ B ₁₂ H ₁₂ Nanoparticles as Fast Ionic Conductors for Sodium-Ion Batteries. <i>ACS Applied Nano Materials</i> , 2022, 5, 373-379.	2.4	14
67	Green Synthesis of Zwitterion-Functionalized Nano-Octahedral Ceria for Enhanced Intracellular Delivery and Cancer Therapy. <i>ACS Sustainable Chemistry and Engineering</i> , 2019, 7, 9189-9201.	3.2	13
68	Mechanistic impacts of long-term gamma irradiation on physicochemical, structural, and mechanical stabilities of radiation-responsive geopolymer pastes. <i>Journal of Hazardous Materials</i> , 2021, 407, 124805.	6.5	13
69	Investigating the Factors Affecting the Ionic Conduction in Nanoconfined NaBH ₄ . <i>Inorganics</i> , 2021, 9, 2.	1.2	13
70	Synthesis of per-deuterated alkyl amines for the preparation of deuterated organic pyromellitimide gelators. <i>Tetrahedron Letters</i> , 2013, 54, 2538-2541.	0.7	12
71	Effect of clay and iron sulphate on volatile and water-extractable organic compounds in bamboo biochars. <i>Journal of Analytical and Applied Pyrolysis</i> , 2018, 133, 22-29.	2.6	12
72	Approaching Piezoelectric Response of Pb-Piezoelectrics in Hydrothermally Synthesized Bi _{0.5} (Na _{1-x} K _x) _{0.5} TiO ₃ Nanotubes. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 20816-20825.	4.0	12

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73	Investigation of K modified P2 Na _{0.7} Mn _{0.8} Mg _{0.2} O ₂ as a cathode material for sodium-ion batteries. CrystEngComm, 2019, 21, 172-181.	1.3	12
74	An Unusual Mercury(II) Diisopropyldithiocarbamate Coordination Polymer. Crystal Growth and Design, 2019, 19, 1125-1133.	1.4	12
75	The effect of deuteration on the keto-enol equilibrium and photostability of the sunscreen agent avobenzene. Photochemical and Photobiological Sciences, 2020, 19, 1410-1422.	1.6	12
76	Nanoporous Zirconium Phosphonate Materials with Enhanced Chemical and Thermal Stability for Sorbent Applications. ACS Applied Nano Materials, 2020, 3, 3717-3729.	2.4	12
77	Total quantification and extraction of shikimic acid from star anise (Ilicium verum) using solid-state NMR and cellulose-dissolving aqueous hydroxide solutions. Sustainable Chemistry and Pharmacy, 2017, 5, 115-121.	1.6	11
78	Preparation of composite zeolites in polymer hydrogels and their catalytic performances in the methanol-to-olefin reaction. Fuel Processing Technology, 2017, 165, 87-93.	3.7	11
79	Imprinting the location of an in-built RAFT agent and selective grafting of polymer chains inside or outside the pores of mesoporous silica nanoparticles. Microporous and Mesoporous Materials, 2020, 294, 109898.	2.2	11
80	Evidence of phase coexistence in hydrothermally synthesized K _{0.5} Na _{0.5} NbO ₃ nanofibers. Journal of Materials Chemistry A, 2020, 8, 8731-8739.	5.2	11
81	Stage-1 cationic C60 intercalated graphene oxide films. Carbon, 2021, 175, 131-140.	5.4	11
82	Complex microstructural evolution in high temperature pyrolysis of plastic and biomass. Fuel, 2021, 291, 120153.	3.4	10
83	Promotion of the Î³ phase of polyamide 6 in its nanocomposite with phosphate glass. Journal of Polymer Science, Part B: Polymer Physics, 2008, 46, 857-860.	2.4	9
84	Effect of Ionothermal Synthesis on the Acidity and Catalytic Performance of a SAPO-5 Molecular Sieve. ChemistrySelect, 2019, 4, 10520-10524.	0.7	9
85	Alkali Metal-Modified P2 Na _x MnO ₂ : Crystal Structure and Application in Sodium-Ion Batteries. Inorganic Chemistry, 2020, 59, 12143-12155.	1.9	9
86	2D polyaniline with exchangeable interlayer fluid for fast and stable volumetric dual ion storage. Journal of Energy Chemistry, 2021, 54, 587-594.	7.1	9
87	Long-Term Strength Evolution in Ambient-Cured Solid-Activator Geopolymer Compositions. Minerals (Basel, Switzerland), 2021, 11, 143.	0.8	9
88	Bulk magnetization and nuclear magnetic resonance of magnetically purified layered silicates and their polymer-based nanocomposites. Journal of Applied Physics, 2005, 98, 114315.	1.1	8
89	Application of low-field, ¹ H/ ¹³ C high-field solution and solid state NMR for characterisation of oil fractions responsible for wettability change in sandstones. Magnetic Resonance Imaging, 2019, 56, 77-85.	1.0	8
90	F-diamane-like nanosheets from expanded fluorinated graphite. Applied Surface Science, 2022, 583, 152534.	3.1	8

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91	Elucidation of structures and lithium environments for an organo-sulfur cathode. <i>Physical Chemistry Chemical Physics</i> , 2019, 21, 18667-18679.	1.3	7
92	Nanovoid formation induces property variation within and across individual silkworm silk threads. <i>Journal of Materials Chemistry B</i> , 2022, 10, 5561-5570.	2.9	7
93	Decoupling the effects of hydrophilic and hydrophobic moieties at the neuron–nanofibre interface. <i>Chemical Science</i> , 2020, 11, 1375-1382.	3.7	6
94	<i>S</i> -Mg ₂ (dobpc): a metal–organic framework for determining chirality in amino acids. <i>Chemical Communications</i> , 2020, 56, 14829-14832.	2.2	6
95	Modulating catalytic oxygen activation over Pt–TiO ₂ /SiO ₂ catalysts by defect engineering of a TiO ₂ /SiO ₂ support. <i>Catalysis Science and Technology</i> , 2022, 12, 1049-1059.	2.1	6
96	Bioactive poly(methyl methacrylate) for bone fixation. <i>RSC Advances</i> , 2015, 5, 60681-60690.	1.7	5
97	Mechanistic implications of Li–S cell function through modification of organo-sulfur cathode architectures. <i>Physical Chemistry Chemical Physics</i> , 2021, 23, 14075-14092.	1.3	5
98	A comparison between the characteristics of a biochar-NPK granule and a commercial NPK granule for application in the soil. <i>Science of the Total Environment</i> , 2022, 832, 155021.	3.9	5
99	Electrochemically activated solid synthesis: an alternative solid-state synthetic method. <i>Dalton Transactions</i> , 2018, 47, 14604-14611.	1.6	4
100	Rb/Cs-Modified P2 Na _{0.7} Mn _{0.8} Mg _{0.2} O ₂ : Application in Sodium-Ion Batteries. <i>ACS Omega</i> , 2019, 4, 5784-5794.	1.6	4
101	High volumetric capacity nanoparticle electrodes enabled by nanofluidic fillers. <i>Energy Storage Materials</i> , 2021, 43, 202-211.	9.5	4
102	Green Stealth Engineering of Lifetime-Biocatalytic Nanocatalyst for Neuroblastoma Therapy. <i>Applied Surface Science</i> , 2022, 572, 151464.	3.1	4
103	Solid-state NMR as a probe of anion binding: molecular dynamics and associations in a [5]polynorbornane bisurea host complexed with terephthalate. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 22195-22203.	1.3	3
104	Site-specific synthesis of a hybrid boron–graphene salt. <i>Chemical Communications</i> , 2016, 52, 1290-1292.	2.2	3
105	Redox-State Dependent Spectroscopic Properties of Porous Organic Polymers Containing Furan, Thiophene, and Selenophene. <i>Australian Journal of Chemistry</i> , 2017, 70, 1227.	0.5	3
106	Millisecond Self-Assembly of Stable Nanodispersed Drug Formulations. <i>Molecular Pharmaceutics</i> , 2018, 15, 495-507.	2.3	3
107	Solid-State NMR Structure Characterization of a ¹³ CO-Labeled Ir(I) Complex with a P,N-Donor Ligand Including Ultrafast MAS Methods. <i>Inorganic Chemistry</i> , 2014, 53, 7146-7153.	1.9	2
108	Development of Low-Alkali, Fly Ash/Slag Geopolymers: Predictive Strength Modelling and Analyses of Impact of Curing Temperatures. <i>Minerals (Basel, Switzerland)</i> , 2021, 11, 60.	0.8	2

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109	Physicochemical Characterization of a Na ⁺ /H ⁺ Thermal Battery Material. Journal of Physical Chemistry C, 2020, 124, 5053-5060.	1.5	1
110	Salen-Based Metal Complexes and the Physical Properties of their Porous Organic Polymers. Australian Journal of Chemistry, 2019, 72, 916.	0.5	1
111	Templated and Bioinspired Aqueous Phase Synthesis and Characterization of Mesoporous Zirconia. Science of Advanced Materials, 2013, 5, 354-365.	0.1	1
112	Defect structure and property consequence when small Li ⁺ ions meet BaTiO ₃ . Physical Review Materials, 2020, 4, .	0.9	1