Ravichandar Babarao

List of Publications by Year
in descending order

85 papers	6,829 citations	61945 43 h-index	58549 82 g-index
88 all docs	88 docs citations	88 times ranked	7705 citing authors

#	Article	IF	Citations
1	Systematic review on sono-assisted CO2 stripping, solvent recovery and energy demand aspects in solvent-based post-combustion carbon dioxide capture process. Chemical Engineering and Processing: Process Intensification, 2022, 170, 108723.	1.8	10
2	Threeâ€inâ€One C₂H₂â€Selectivityâ€Guided Adsorptive Separation across an Isoreticular Family of Cationic Squareâ€Lattice MOFs. Angewandte Chemie, 2022, 134, e202114132.	1.6	2
3	Threeâ€inâ€One C₂H₂â€Selectivityâ€Guided Adsorptive Separation across an Isoreticular Family of Cationic Squareâ€Lattice MOFs. Angewandte Chemie - International Edition, 2022, 61, .	7.2	33
4	Hetero-metallic metal-organic frameworks for room-temperature NO2 sensing. Journal of Colloid and Interface Science, 2022, 610, 304-312.	5.0	15
5	Residual solvent induced physical morphology and gas permeation in polyamide-imide membrane: Experimental investigation and molecular simulations. European Polymer Journal, 2022, 165, 111012.	2.6	6
6	Prediction of O₂/N₂ Selectivity in Metalâ€“Organic Frameworks via High-Throughput Computational Screening and Machine Learning. ACS Applied Materials & Interfaces, 2022, 14, 736-749.	4.0	30
7	Highâ€Alkaline Waterâ€Splitting Activity of Mesoporous 3D Heterostructures: An Amorphousâ€Shell@Crystallineâ€Core Nanoâ€Assembly of Coâ€Niâ€Phosphate Ultrathinâ€Nanosheets and Vâ€Doped Cobaltâ€Nitride Nanowires. Advanced Science, 2022, 9, .	9.5	41
8	Porous crystalline frameworks for thermocatalytic CO₂ reduction: an emerging paradigm. Energy and Environmental Science, 2021, 14, 320-352.	15.6	61
9	Rapid, selective capture of toxic oxo-anions of Se(<scp>iv</scp>), Se(<scp>vi</scp>) and As(<scp>v</scp>) from water by an ionic metalâ€“organic framework (iMOF). Journal of Materials Chemistry A, 2021, 9, 6499-6507.	5.2	39
10	Selective capture of carbon dioxide from hydrocarbons using a metal-organic framework. Nature Communications, 2021, 12, 197.	5.8	177
11	Plasmonic metal-organic framework nanocomposites enabled by degenerately doped molybdenum oxides. Journal of Colloid and Interface Science, 2021, 588, 305-314.	5.0	21
12	Stabilizing the Extrinsic Porosity in Metalâ€“Organic Cages-Based Supramolecular Framework by In Situ Catalytic Polymerization. CCS Chemistry, 2021, 3, 1382-1390.	4.6	25
13	Reversing Benzene/Cyclohexane Selectivity through Varying Supramolecular Interactions Using Aliphatic, Isoreticular MOFs. ACS Applied Materials & Interfaces, 2021, 13, 30885-30890.	4.0	24
14	Advances in adsorptive separation of benzene and cyclohexane by metal-organic framework adsorbents. Coordination Chemistry Reviews, 2021, 437, 213852.	9.5	74
15	Elucidating the mechanisms of Paraffin-Olefin separations using nanoporous adsorbents: An overview. IScience, 2021, 24, 103042.	1.9	11
16	Tuneable CO₂ binding enthalpies by redox modulation of an electroactive MOF-74 framework. Materials Advances, 2021, 2, 2112-2119.	2.6	1
17	Heterometallic Metal Organic Frameworks for Air Separation: A Computational Study. Industrial & Engineering Chemistry Research, 2020, 59, 15718-15731.	1.8	14
18	Mixed donor, phenanthroline photoactive MOFs with favourable CO₂ selectivity. Chemical Communications, 2020, 56, 13377-13380.	2.2	2

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19	A Water-Stable Cationic Metalâ€“Organic Framework with Hydrophobic Pore Surfaces as an Efficient Scavenger of Oxo-Anion Pollutants from Water. ACS Applied Materials & Interfaces, 2020, 12, 41810-41818.	4.0	51
20	The Effect of Sterically Active Ligand Substituents on Gas Adsorption within a Family of 3D Zn-Based Coordination Polymers. Inorganic Chemistry, 2020, 59, 8871-8881.	1.9	7
21	On/off porosity switching and post-assembly modifications of Cu₄L₄ metalâ€“organic polyhedra. Chemical Science, 2020, 11, 3664-3671.	3.7	31
22	Enhancing Multicomponent Metalâ€“Organic Frameworks for Low Pressure Liquid Organic Hydrogen Carrier Separations. Angewandte Chemie, 2020, 132, 6146-6154.	1.6	10
23	Enhancing Multicomponent Metalâ€“Organic Frameworks for Low Pressure Liquid Organic Hydrogen Carrier Separations. Angewandte Chemie - International Edition, 2020, 59, 6090-6098.	7.2	50
24	Metalâ€“Organic Framework-Enhanced Solid-Phase Microextraction Mass Spectrometry for the Direct and Rapid Detection of Perfluorooctanoic Acid in Environmental Water Samples. Analytical Chemistry, 2020, 92, 6900-6908.	3.2	41
25	Multipurpose Metalâ€“Organic Framework for the Adsorption of Acetylene: Ethylene Purification and Carbon Dioxide Removal. Chemistry of Materials, 2019, 31, 4919-4926.	3.2	120
26	Computational design of multilayer frameworks to achieve DOE target for on-board methane delivery. Carbon, 2019, 152, 206-217.	5.4	5
27	Acoustomicrofluidic assembly of oriented and simultaneously activated metalâ€“organic frameworks. Nature Communications, 2019, 10, 2282.	5.8	33
28	A Robust Ethane-Trapping Metalâ€“Organic Framework with a High Capacity for Ethylene Purification. Journal of the American Chemical Society, 2019, 141, 5014-5020.	6.6	272
29	CUB-5: A Contoured Aliphatic Pore Environment in a Cubic Framework with Potential for Benzene Separation Applications. Journal of the American Chemical Society, 2019, 141, 3828-3832.	6.6	87
30	Aqueous contaminant detection via UiO-66 thin film optical fiber sensor platform with fast Fourier transform based spectrum analysis. Journal Physics D: Applied Physics, 2018, 51, 025601.	1.3	8
31	Methane Adsorption and Separation in Slipped and Functionalized Covalent Organic Frameworks. Industrial & Engineering Chemistry Research, 2018, 57, 4767-4778.	1.8	36
32	Multifunctional Behavior of Sulfonate-Based Hydrolytically Stable Microporous Metalâ€“Organic Frameworks. ACS Applied Materials & Interfaces, 2018, 10, 39049-39055.	4.0	18
33	Polar Pore Surface Guided Selective CO₂ Adsorption in a Prefunctionalized Metalâ€“Organic Framework. Crystal Growth and Design, 2017, 17, 3581-3587.	1.4	34
34	CO₂adsorption and separation in covalent organic frameworks with interlayer slipping. CrystEngComm, 2017, 19, 6950-6963.	1.3	51
35	Computational materials chemistry for carbon capture using porous materials. Journal Physics D: Applied Physics, 2017, 50, 463002.	1.3	7
36	Gas Adsorption and Separation by the Al-Based Metalâ€“Organic Framework MIL-160. Journal of Physical Chemistry C, 2017, 121, 26822-26832.	1.5	51

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37	Lattice response of the porous coordination framework Zn(hba) to guest adsorption. Powder Diffraction, 2017, 32, S49-S53.	0.4	1
38	CO₂ Adsorption in Azobenzene Functionalized Stimuli Responsive Metalâ€“Organic Frameworks. Journal of Physical Chemistry C, 2016, 120, 16658-16667.	1.5	53
39	Metalâ€Organicâ€Frameworkâ€Coated Optical Fibers as Lightâ€Triggered Drug Delivery Vehicles. Advanced Functional Materials, 2016, 26, 3244-3249.	7.8	88
40	Facile stabilization of cyclodextrin metalâ€“organic frameworks under aqueous conditions via the incorporation of C₆₀ in their matrices. Chemical Communications, 2016, 52, 5973-5976.	2.2	81
41	Direct Synthesis of Hierarchically Porous Metalâ€“Organic Frameworks with High Stability and Strong BrÃ¸nsted Acidity: The Decisive Role of Hafnium in Efficient and Selective Fructose Dehydration. Chemistry of Materials, 2016, 28, 2659-2667.	3.2	160
42	Harnessing Lewis acidic open metal sites of metalâ€“organic frameworks: the foremost route to achieve highly selective benzene sorption over cyclohexane. Chemical Communications, 2016, 52, 8215-8218.	2.2	76
43	A QCM-based â€˜onâ€“offâ€™ mechanistic study of gas adsorption by plasmid DNA and DNAâ€“[Bmim][PF6] construct. RSC Advances, 2016, 6, 81318-81329.	1.7	3
44	Interpenetrated Zirconiumâ€“Organic Frameworks: Small Cavities versus Functionalization for CO₂ Capture. Journal of Physical Chemistry C, 2016, 120, 13013-13023.	1.5	13
45	Defect engineering of UiO-66 for CO₂ and H₂O uptake â€“ a combined experimental and simulation study. Dalton Transactions, 2016, 45, 4496-4500.	1.6	171
46	Defects in metalâ€“organic frameworks: a compromise between adsorption and stability?. Dalton Transactions, 2016, 45, 4352-4359.	1.6	140
47	A New Structural Family of Gasâ€Sorbing Coordination Polymers Derived from Phenolic Carboxylic Acids. Chemistry - A European Journal, 2015, 21, 18057-18061.	1.7	21
48	Tuning the cavities of zirconium-based MIL-140 frameworks to modulate CO₂adsorption. Chemical Communications, 2015, 51, 11286-11289.	2.2	47
49	Porous Aromatic Frameworks Impregnated with Lithiated Fullerenes for Natural Gas Purification. Journal of Physical Chemistry C, 2015, 119, 9347-9354.	1.5	17
50	Lead(<scp>ii</scp>) uptake by aluminium based magnetic framework composites (MFCs) in water. Journal of Materials Chemistry A, 2015, 3, 19822-19831.	5.2	141
51	The first example of a zirconium-oxide based metalâ€“organic framework constructed from monocarboxylate ligands. Dalton Transactions, 2015, 44, 1516-1519.	1.6	26
52	Phosphoric Acid Loaded Azo (â^'Nâ•Nâ^') Based Covalent Organic Framework for Proton Conduction. Journal of the American Chemical Society, 2014, 136, 6570-6573.	6.6	562
53	Porous Aromatic Frameworks Impregnated with Fullerenes for Enhanced Methanol/Water Separation. Langmuir, 2014, 30, 14621-14630.	1.6	12
54	Exploiting stable radical states for multifunctional properties in triarylamine-based porous organic polymers. Journal of Materials Chemistry A, 2014, 2, 12466-12474.	5.2	33

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55	Does functionalisation enhance CO₂ uptake in interpenetrated MOFs? An examination of the IRMOF-9 series. Chemical Communications, 2014, 50, 3238-3241.	2.2	57
56	Microwave-Assisted Solvothermal Synthesis and Optical Properties of Tagged MIL-140A Metalâ€“Organic Frameworks. Inorganic Chemistry, 2013, 52, 12878-12880.	1.9	72
57	Chemically Stable Multilayered Covalent Organic Nanosheets from Covalent Organic Frameworks via Mechanical Delamination. Journal of the American Chemical Society, 2013, 135, 17853-17861.	6.6	717
58	Postcombustion CO₂ Capture in Functionalized Porous Coordination Networks. Journal of Physical Chemistry C, 2013, 117, 26976-26987.	1.5	21
59	A route to drastic increase of CO2 uptake in Zr metal organic framework UiO-66. Chemical Communications, 2013, 49, 3634.	2.2	201
60	Post-synthetic Structural Processing in a Metalâ€“Organic Framework Material as a Mechanism for Exceptional CO₂/N₂ Selectivity. Journal of the American Chemical Society, 2013, 135, 10441-10448.	6.6	190
61	Enhancing selective CO2 adsorption via chemical reduction of a redox-active metalâ€“organic framework. Dalton Transactions, 2013, 42, 9831.	1.6	64
62	Strategies toward Enhanced Low-Pressure Volumetric Hydrogen Storage in Nanoporous Cryoadsorbents. Langmuir, 2013, 29, 15689-15697.	1.6	11
63	Nitrogen-Doped Mesoporous Carbon for Carbon Capture â€“ A Molecular Simulation Study. Journal of Physical Chemistry C, 2012, 116, 7106-7110.	1.5	48
64	Computer-Aided Design of Interpenetrated Tetrahydrofuran-Functionalized 3D Covalent Organic Frameworks for CO₂ Capture. Crystal Growth and Design, 2012, 12, 5349-5356.	1.4	37
65	Hysteretic carbon dioxide sorption in a novel copper(ii)-indazole-carboxylate porous coordination polymer. Chemical Communications, 2012, 48, 11558.	2.2	39
66	Corresponding States Theory for the Freezing of Ionic Liquids. Industrial & Engineering Chemistry Research, 2011, 50, 234-238.	1.8	2
67	Cation Characterization and CO2Capture in Li+-Exchanged Metalâ€'Organic Frameworks: From First-Principles Modeling to Molecular Simulationâ€. Industrial & Engineering Chemistry Research, 2011, 50, 62-68.	1.8	43
68	Molecular simulations for energy, environmental and pharmaceutical applications of nanoporous materials: from zeolites, metalâ€“organic frameworks to protein crystals. Chemical Society Reviews, 2011, 40, 3599.	18.7	130
69	Functionalizing Porous Aromatic Frameworks with Polar Organic Groups for High-Capacity and Selective CO₂ Separation: A Molecular Simulation Study. Langmuir, 2011, 27, 3451-3460.	1.6	124
70	Effect of Pore Topology and Accessibility on Gas Adsorption Capacity in Zeoliticâ€'Imidazolate Frameworks: Bringing Molecular Simulation Close to Experiment. Journal of Physical Chemistry C, 2011, 115, 8126-8135.	1.5	47
71	Understanding the High Solubility of CO₂ in an Ionic Liquid with the Tetracyanoborate Anion. Journal of Physical Chemistry B, 2011, 115, 9789-9794.	1.2	132
72	Highly Porous Ionic rht Metalâ€'Organic Framework for H2 and CO2 Storage and Separation: A Molecular Simulation Study. Langmuir, 2010, 26, 11196-11203.	1.6	72

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73	A Highly Hydrophobic Metalâ"Organic Framework Zn(BDC)(TED)0.5 for Adsorption and Separation of CH3OH/H2O and CO2/CH4: An Integrated Experimental and Simulation Study. Journal of Physical Chemistry C, 2010, 114, 6602-6609.	1.5	94
74	Molecular Computations of Adsorption in Nanoporous Materials. , 2010, , 69-100.		2
75	Metalâ"Organic Framework MIL-101 for Adsorption and Effect of Terminal Water Molecules: From Quantum Mechanics to Molecular Simulation. Langmuir, 2010, 26, 8743-8750.	1.6	113
76	Atomistic Insight into Adsorption, Mobility, and Vibration of Water in Ion-Exchanged Zeolite-like Metalâ"Organic Frameworks. ACS Nano, 2009, 3, 2563-2572.	7.3	28
77	Molecular Insight into Adsorption and Diffusion of Alkane Isomer Mixtures in Metalâ"Organic Frameworks. Journal of Physical Chemistry B, 2009, 113, 9129-9136.	1.2	48
78	Unprecedentedly High Selective Adsorption of Gas Mixtures in rho Zeolite-like Metalâ"Organic Framework: A Molecular Simulation Study. Journal of the American Chemical Society, 2009, 131, 11417-11425.	6.6	202
79	Unraveling the Energetics and Dynamics of Ibuprofen in Mesoporous Metalâ"Organic Frameworks. Journal of Physical Chemistry C, 2009, 113, 18287-18291.	1.5	97
80	Molecular Simulations for Adsorptive Separation of CO₂/CH₄ Mixture in Metal-Exposed, Catenated, and Charged Metalâ"Organic Frameworks. Langmuir, 2009, 25, 5239-5247.	1.6	134
81	Upgrade of natural gas in rho zeolite-like metalâ€"organic framework and effect of water: a computational study. Energy and Environmental Science, 2009, 2, 1088.	15.6	67
82	Molecular Screening of Metalâ"Organic Frameworks for CO₂ Storage. Langmuir, 2008, 24, 6270-6278.	1.6	227
83	Exceptionally high CO2 storage in covalent-organic frameworks: Atomistic simulation study. Energy and Environmental Science, 2008, 1, 139.	15.6	126
84	Diffusion and Separation of CO₂ and CH₄ in Silicalite, C₁₆₈ Schwarzite, and IRMOF-1: A Comparative Study from Molecular Dynamics Simulation. Langmuir, 2008, 24, 5474-5484.	1.6	140
85	Storage and Separation of CO2and CH4in Silicalite, C168Schwarzite, and IRMOF-1:Â A Comparative Study from Monte Carlo Simulation. Langmuir, 2007, 23, 659-666.	1.6	388