Thomas D Bennett

List of Publications by Year
in descending order

133 papers	10,530 citations	29994 54 h-index	33814 99 g-index
151 all docs	151 docs citations	151 times ranked	7896 citing authors

#	Article	IF	Citations
1	Amorphous Metalâ€"Organic Frameworks. Accounts of Chemical Research, 2014, 47, 1555-1562.	7.6	502
2	Chemical structure, network topology, and porosity effects on the mechanical properties of Zeolitic Imidazolate Frameworks. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 9938-9943.	3.3	450
3	The Effect of Pressure on ZIFâ€8: Increasing Pore Size with Pressure and the Formation of a Highâ€Pressure Phase at 1.47â€...GPa. Angewandte Chemie - International Edition, 2009, 48, 7087-7089.	7.2	444
4	Interplay between defects, disorder and flexibility in metal-organic frameworks. Nature Chemistry, 2017, 9, 11-16.	6.6	342
5	Liquid metalâ€"organic frameworks. Nature Materials, 2017, 16, 1149-1154.	13.3	326
6	Liquid, glass and amorphous solid states of coordination polymers and metalâ€"organic frameworks. Nature Reviews Materials, 2018, 3, 431-440.	23.3	314
7	Amorphous metalâ€"organic frameworks for drug delivery. Chemical Communications, 2015, 51, 13878-13881.	2.2	309
8	Melt-Quenched Glasses of Metalâ€"Organic Frameworks. Journal of the American Chemical Society, 2016, 138, 3484-3492.	6.6	252
9	Negative Linear Compressibility of a Metalâ€"Organic Framework. Journal of the American Chemical Society, 2012, 134, 11940-11943.	6.6	251
10	Structure and Properties of an Amorphous Metal-Organic Framework. Physical Review Letters, 2010, 104, 115503.	2.9	246
11	Hybrid glasses from strong and fragile metal-organic framework liquids. Nature Communications, 2015, 6, 8079.	5.8	242
12	Exceptionally Low Shear Modulus in a Prototypical Imidazole-Based Metal-Organic Framework. Physical Review Letters, 2012, 108, 095502.	2.9	210
13	Identifying the Role of Terahertz Vibrations in Metal-Organic Frameworks: From Gate-Opening Phenomenon to Shear-Driven Structural Destabilization. Physical Review Letters, 2014, 113, 215502.	2.9	202
14	The thermal stability of metal-organic frameworks. Coordination Chemistry Reviews, 2020, 419, 213388.	9.5	197
15	A metal-organic framework with ultrahigh glass-forming ability. Science Advances, 2018, 4, eaao6827.	4.7	196
16	Reversible pressure-induced amorphization of a zeolitic imidazolate framework (ZIF-4). Chemical Communications, 2011, 47, 7983.	2.2	192
17	Facile Mechanosynthesis of Amorphous Zeolitic Imidazolate Frameworks. Journal of the American Chemical Society, 2011, 133, 14546-14549.	6.6	184
18	Gel-based morphological design of zirconium metalâ€"organic frameworks. Chemical Science, 2017, 8, 3939-3948.	3.7	177

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19	Metalâ€“organic framework gels and monoliths. Chemical Science, 2020, 11, 310-323.	3.7	173
20	Ballâ€Millingâ€Induced Amorphization of Zeolitic Imidazolate Frameworks (ZIFs) for the Irreversible Trapping of Iodine. Chemistry - A European Journal, 2013, 19, 7049-7055.	1.7	171
21	Mechanical Properties in Metalâ€“Organic Frameworks: Emerging Opportunities and Challenges for Device Functionality and Technological Applications. Advanced Materials, 2018, 30, e1704124.	11.1	165
22	Defects and disorder in metal organic frameworks. Dalton Transactions, 2016, 45, 4113-4126.	1.6	159
23	Coordination cages as permanently porous ionic liquids. Nature Chemistry, 2020, 12, 270-275.	6.6	151
24	Improving the Acidic Stability of Zeolitic Imidazolate Frameworks by Biofunctional Molecules. CheM, 2019, 5, 1597-1608.	5.8	148
25	Metal-organic framework glasses with permanent accessible porosity. Nature Communications, 2018, 9, 5042.	5.8	147
26	The changing state of porous materials. Nature Materials, 2021, 20, 1179-1187.	13.3	147
27	Thermal Amorphization of Zeolitic Imidazolate Frameworks. Angewandte Chemie - International Edition, 2011, 50, 3067-3071.	7.2	146
28	Amorphization of the prototypical zeolitic imidazolate framework ZIF-8 by ball-milling. Chemical Communications, 2012, 48, 7805.	2.2	137
29	Liquid-phase sintering of lead halide perovskites and metal-organic framework glasses. Science, 2021, 374, 621-625.	6.0	137
30	Pressure promoted low-temperature melting of metalâ€“organic frameworks. Nature Materials, 2019, 18, 370-376.	13.3	134
31	Mechanical Properties of Dense Zeolitic Imidazolate Frameworks (ZIFs): A Highâ€Pressure Xâ€ray Diffraction, Nanoindentation and Computational Study of the Zinc Framework Zn(Im)₂, and its Lithiumï£¿Boron Analogue, LiB(Im)₄. Chemistry - A European Journal, 2010, 16, 10684-10690.	1.7	119
32	Improving the mechanical stability of zirconium-based metalâ€“organic frameworks by incorporation of acidic modulators. Journal of Materials Chemistry A, 2015, 3, 1737-1742.	5.2	116
33	Thermochemistry of Zeolitic Imidazolate Frameworks of Varying Porosity. Journal of the American Chemical Society, 2013, 135, 598-601.	6.6	112
34	Mechanically and chemically robust ZIF-8 monoliths with high volumetric adsorption capacity. Journal of Materials Chemistry A, 2015, 3, 2999-3005.	5.2	104
35	A Computational and Experimental Approach Linking Disorder, Highâ€Pressure Behavior, and Mechanical Properties in UiO Frameworks. Angewandte Chemie - International Edition, 2016, 55, 2401-2405.	7.2	103
36	Tackling the Defect Conundrum in UiO-66: A Mixed-Linker Approach to Engineering Missing Linker Defects. Chemistry of Materials, 2017, 29, 10478-10486.	3.2	102

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37	Metal-organic framework crystal-glass composites. Nature Communications, 2019, 10, 2580.	5.8	97
38	Mechanical Properties and Processing Techniques of Bulk Metalâ€“Organic Framework Glasses. Journal of the American Chemical Society, 2019, 141, 1027-1034.	6.6	93
39	Extreme Flexibility in a Zeolitic Imidazolate Framework: Porous to Dense Phase Transition in Desolvated ZIFâ€4. Angewandte Chemie - International Edition, 2015, 54, 6447-6451.	7.2	87
40	Connecting defects and amorphization in UiO-66 and MIL-140 metalâ€“organic frameworks: a combined experimental and computational study. Physical Chemistry Chemical Physics, 2016, 18, 2192-2201.	1.3	85
41	Halogenated Metalâ€“Organic Framework Glasses and Liquids. Journal of the American Chemical Society, 2020, 142, 3880-3890.	6.6	83
42	Porosity in metalâ€“organic framework glasses. Chemical Communications, 2016, 52, 3750-3753.	2.2	76
43	Ionic liquid facilitated melting of the metal-organic framework ZIF-8. Nature Communications, 2021, 12, 5703.	5.8	74
44	Novel metalâ€“organic framework materials: blends, liquids, glasses and crystalâ€“glass composites. Chemical Communications, 2019, 55, 8705-8715.	2.2	72
45	Liquid phase blending of metal-organic frameworks. Nature Communications, 2018, 9, 2135.	5.8	69
46	Rich Polymorphism of a Metalâ€“Organic Framework in Pressureâ€“Temperature Space. Journal of the American Chemical Society, 2019, 141, 9330-9337.	6.6	68
47	Flux melting of metalâ€“organic frameworks. Chemical Science, 2019, 10, 3592-3601.	3.7	67
48	Topochemical conversion of a dense metalâ€“organic framework from a crystalline insulator to an amorphous semiconductor. Chemical Science, 2015, 6, 1465-1473.	3.7	66
49	Linking defects, hierarchical porosity generation and desalination performance in metalâ€“organic frameworks. Chemical Science, 2018, 9, 3508-3516.	3.7	65
50	Synthesis and Properties of a Compositional Series of MIL-53(Al) Metalâ€“Organic Framework Crystal-Glass Composites. Journal of the American Chemical Society, 2019, 141, 15641-15648.	6.6	65
51	Melting of hybrid organicâ€“inorganic perovskites. Nature Chemistry, 2021, 13, 778-785.	6.6	65
52	Crystallography of metalâ€“organic frameworks. IUCrJ, 2014, 1, 563-570.	1.0	62
53	Meltâ€Quenched Hybrid Glasses from Metalâ€“Organic Frameworks. Advanced Materials, 2017, 29, 1601705.	11.1	62
54	Detecting Molecular Rotational Dynamics Complementing the Low-Frequency Terahertz Vibrations in a Zirconium-Based Metal-Organic Framework. Physical Review Letters, 2017, 118, 255502.	2.9	60

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55	Mechanochemical synthesis of mixed metal, mixed linker, glass-forming metalâ€“organic frameworks. Green Chemistry, 2020, 22, 2505-2512.	4.6	58
56	Optical properties of a melt-quenched metalâ€“organic framework glass. Optics Letters, 2019, 44, 1623.	1.7	58
57	Tuning the Swing Effect by Chemical Functionalization of Zeolitic Imidazolate Frameworks. Journal of the American Chemical Society, 2018, 140, 382-387.	6.6	55
58	Mechanical properties of zeolitic metalâ€“organic frameworks: mechanically flexible topologies and stabilization against structural collapse. CrystEngComm, 2015, 17, 286-289.	1.3	53
59	Enabling Computational Design of ZIFs Using ReaxFF. Journal of Physical Chemistry B, 2018, 122, 9616-9624.	1.2	49
60	Ultraselective Pebax Membranes Enabled by Templated Microphase Separation. ACS Applied Materials & Interfaces, 2018, 10, 20006-20013.	4.0	48
61	Mixed hierarchical local structure in a disordered metalâ€“organic framework. Nature Communications, 2021, 12, 2062.	5.8	44
62	Interfacial engineering of a polymerâ€“MOF composite by <i>in situ</i> vitrification. Chemical Communications, 2020, 56, 3609-3612.	2.2	43
63	Mechanochemically Synthesised Flexible Electrodes Based on Bimetallic Metalâ€“Organic Framework Glasses for the Oxygen Evolution Reaction. Angewandte Chemie - International Edition, 2022, 61, .	7.2	41
64	Templated growth of vertically aligned 2D metalâ€“organic framework nanosheets. Journal of Materials Chemistry A, 2019, 7, 5811-5818.	5.2	40
65	Investigating the melting behaviour of polymorphic zeolitic imidazolate frameworks. CrystEngComm, 2020, 22, 3627-3637.	1.3	37
66	Metal-organic framework and inorganic glass composites. Nature Communications, 2020, 11, 5800.	5.8	35
67	Sodium Ion Conductivity in Superionic IL-Impregnated Metal-Organic Frameworks: Enhancing Stability Through Structural Disorder. Scientific Reports, 2020, 10, 3532.	1.6	35
68	Postsynthetic bromination of UiO-66 analogues: altering linker flexibility and mechanical compliance. Dalton Transactions, 2016, 45, 4132-4135.	1.6	34
69	A comparison of the amorphization of zeolitic imidazolate frameworks (ZIFs) and aluminosilicate zeolites by ball-milling. Dalton Transactions, 2016, 45, 4258-4268.	1.6	34
70	Pressure-induced oversaturation and phase transition in zeolitic imidazolate frameworks with remarkable mechanical stability. Dalton Transactions, 2015, 44, 4498-4503.	1.6	32
71	Dielectric Properties of Zeolitic Imidazolate Frameworks in the Broad-Band Infrared Regime. Journal of Physical Chemistry Letters, 2018, 9, 2678-2684.	2.1	31
72	Tracking thermal-induced amorphization of a zeolitic imidazolate framework via synchrotron in situ far-infrared spectroscopy. Chemical Communications, 2017, 53, 7041-7044.	2.2	30

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73	X-ray radiation-induced amorphization of metalâ€“organic frameworks. Physical Chemistry Chemical Physics, 2019, 21, 12389-12395.	1.3	30
74	Prediction of the Glass Transition Temperatures of Zeolitic Imidazolate Glasses through Topological Constraint Theory. Journal of Physical Chemistry Letters, 2018, 9, 6985-6990.	2.1	29
75	Flexibility of zeolitic imidazolate framework structures studied by neutron total scattering and the reverse Monte Carlo method. Journal of Physics Condensed Matter, 2013, 25, 395403.	0.7	28
76	Combined experimental and computational NMR study of crystalline and amorphous zeolitic imidazolate frameworks. Physical Chemistry Chemical Physics, 2015, 17, 25191-25196.	1.3	28
77	Manufacturing Macroporous Monoliths of Microporous Metalâ€“Organic Frameworks. ACS Applied Nano Materials, 2018, 1, 497-500.	2.4	28
78	Functional Group Mapping by Electron Beam Vibrational Spectroscopy from Nanoscale Volumes. Nano Letters, 2020, 20, 1272-1279.	4.5	28
79	Amorphousâ€“amorphous transition in a porous coordination polymer. Chemical Communications, 2017, 53, 7060-7063.	2.2	27
80	Elucidating the Variable-Temperature Mechanical Properties of a Negative Thermal Expansion Metalâ€“Organic Framework. ACS Applied Materials & Interfaces, 2018, 10, 21079-21083.	4.0	27
81	Post-Synthetic Modification of a Metalâ€“Organic Framework Glass. Chemistry of Materials, 2022, 34, 2187-2196.	3.2	27
82	Flexibility and disorder in metalâ€“organic frameworks. Dalton Transactions, 2016, 45, 4058-4059.	1.6	26
83	Relating structural disorder and melting in complex mixed ligand zeolitic imidazolate framework glasses. Dalton Transactions, 2020, 49, 850-857.	1.6	25
84	Identifying the liquid and glassy states of coordination polymers and metalâ€“organic frameworks. Faraday Discussions, 2021, 225, 210-225.	1.6	25
85	A Computational and Experimental Approach Linking Disorder, Highâ€Pressure Behavior, and Mechanical Properties in UiO Frameworks. Angewandte Chemie, 2016, 128, 2447-2451.	1.6	24
86	Thermodynamic features and enthalpy relaxation in a metalâ€“organic framework glass. Physical Chemistry Chemical Physics, 2018, 20, 18291-18296.	1.3	24
87	Structure of Metalâ€“Organic Framework Glasses by <i>Ab Initio</i> Molecular Dynamics. Chemistry of Materials, 2020, 32, 8004-8011.	3.2	24
88	Subwavelength Spatially Resolved Coordination Chemistry of Metalâ€“Organic Framework Glass Blends. Journal of the American Chemical Society, 2018, 140, 17862-17866.	6.6	23
89	Stepwise collapse of a giant pore metalâ€“organic framework. Dalton Transactions, 2021, 50, 5011-5022.	1.6	23
90	Structural investigations of amorphous metalâ€“organic frameworks formed <i>via</i> different routes. Physical Chemistry Chemical Physics, 2018, 20, 7857-7861.	1.3	22

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91	Structural evolution in a melt-quenched zeolitic imidazolate framework glass during heat-treatment. Chemical Communications, 2019, 55, 2521-2524.	2.2	21
92	A new route to porous metalâ€"organic framework crystalâ€"glass composites. Chemical Science, 2020, 11, 9910-9918.	3.7	21
93	Plasticity of Metalâ€"Organic Framework Glasses. Journal of the American Chemical Society, 2021, 143, 20717-20724.	6.6	21
94	Comparison of the ionic conductivity properties of microporous and mesoporous MOFs infiltrated with a Na-ion containing IL mixture. Dalton Transactions, 2020, 49, 15914-15924.	1.6	20
95	Templateâ€based Synthesis of a Formate Metalâ€"Organic Framework/Activated Carbon Fiber Composite for Highâ€performance Methane Adsorptive Separation. Chemistry - an Asian Journal, 2016, 11, 3014-3017.	1.7	19
96	Tuning the Morphological Appearance of Iron(III) Fumarate: Impact on Material Characteristics and Biocompatibility. Chemistry of Materials, 2020, 32, 2253-2263.	3.2	19
97	Phase diagrams of liquid-phase mixing in multi-component metal-organic framework glasses constructed by quantitative elemental nano-tomography. APL Materials, 2019, 7, .	2.2	18
98	Diffraction study of pressure-amorphized ZrW<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow /><mml:mrow><mml:mn>2</mml:mn></mml:mrow></mml:msub></mml:mrow></mml:math>O<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow /><mml:mrow><mml:mn>8</mml:mn></mml:mro	1.1	17
99	Guest size limitation in metalâ€"organic framework crystalâ€"glass composites. Journal of Materials Chemistry A, 2021, 9, 8386-8393.	5.2	15
100	Glassy behaviour of mechanically amorphised ZIF-62 isomorphs. Chemical Communications, 2021, 57, 9272-9275.	2.2	15
101	Melt-quenched porous organic cage glasses. Journal of Materials Chemistry A, 2021, 9, 19807-19816.	5.2	15
102	Disorder classification of the vibrational spectra of modern glasses. Physical Review B, 2021, 104, .	1.1	15
103	Structural integrity, meltability, and variability of thermal properties in the mixed-linker zeolitic imidazolate framework ZIF-62. Journal of Chemical Physics, 2020, 153, 204501.	1.2	14
104	Lowâ€Temperature Melting and Glass Formation of the Zeolitic Imidazolate Frameworks ZIFâ€62 and ZIFâ€76 through Ionic Liquid Incorporation. Advanced Materials Technologies, 2022, 7, .	3.0	14
105	Polymorph formation for a zeolitic imidazolate framework composition - Zn(Im) 2. Microporous and Mesoporous Materials, 2018, 265, 57-62.	2.2	13
106	Structural, electronic, and dielectric properties of a large random network model of amorphous zeolitic imidazolate frameworks and its analogues. Journal of the American Ceramic Society, 2019, 102, 4602-4611.	1.9	13
107	Impact of 1-Methylimidazole on Crystal Formation, Phase Transitions, and Glass Formation in a Zeolitic Imidazolate Framework. Crystal Growth and Design, 2020, 20, 6528-6534.	1.4	13
108	The deformation of short-range order leading to rearrangement of topological network structure in zeolitic imidazolate framework glasses. IScience, 2022, 25, 104351.	1.9	11

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109	From n- to p-Type Material: Effect of Metal Ion on Charge Transport in Metalâ€"Organic Materials. ACS Applied Materials & Interfaces, 2021, 13, 52055-52062.	4.0	10
110	Dicyanamide-perovskites at the edge of dense hybrid organicâ€"inorganic materials. Coordination Chemistry Reviews, 2022, 455, 214337.	9.5	10
111	Multivariate analysis of disorder in metalâ€"organic frameworks. Nature Communications, 2022, 13, 2173.	5.8	10
112	Introducing porosity into metalâ€"organic framework glasses. Journal of Materials Chemistry A, 2022, 10, 19552-19559.	5.2	10
113	Electronic, magnetic and photophysical properties of MOFs and COFs: general discussion. Faraday Discussions, 2017, 201, 87-99.	1.6	9
114	Principles of melting in hybrid organicâ€"inorganic perovskite and polymorphic ABX₃ structures. Chemical Science, 2022, 13, 2033-2042.	3.7	9
115	Uncovering a reconstructive solidâ€"solid phase transition in a metalâ€"organic framework. Royal Society Open Science, 2017, 4, 171355.	1.1	7
116	Mechanochemically Synthesised Flexible Electrodes based on Bimetallic Metalâ€Organic Framework Glasses for the Oxygen Evolution Reaction. Angewandte Chemie, 0, , .	1.6	7
117	Gas adsorption in the topologically disordered Fe-BTC framework. Journal of Materials Chemistry A, 2021, 9, 27019-27027.	5.2	7
118	Materials Formed by Combining Inorganic Glasses and Metalâ€Organic Frameworks. Chemistry - A European Journal, 2022, 28, .	1.7	7
119	New directions in gas sorption and separation with MOFs: general discussion. Faraday Discussions, 2017, 201, 175-194.	1.6	6
120	Neutron and X-ray total scattering study of hydrogen disorder in fully hydrated hydrogrossular, Ca3Al2(O4H4)3. Physics and Chemistry of Minerals, 2018, 45, 333-342.	0.3	5
121	The reactivity of an inorganic glass melt with ZIF-8. Dalton Transactions, 2021, 50, 3529-3535.	1.6	5
122	Mechanochemically synthesised dicyanamide hybrid organicâ€"inorganic perovskites, and their melt-quenched glasses. Chemical Communications, 2022, 58, 3949-3952.	2.2	5
123	Electron Ptychography Using Fast Binary 4D STEM Data. Microscopy and Microanalysis, 2019, 25, 1662-1663.	0.2	3
124	Mapping Non-Crystalline Nanostructure in Beam Sensitive Systems With Low-dose Scanning Electron Pair Distribution Function Analysis. Microscopy and Microanalysis, 2019, 25, 1636-1637.	0.2	3
125	Properties of Singleâ€Component Metalâ€"Organic Framework Crystalâ€Glass Composites. Chemistry - A European Journal, 2022, 28, e202104026.	1.7	2
126	Novel computational tools: general discussion. Faraday Discussions, 2021, 225, 341-357.	1.6	1

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127	Frontispiece: Materials Formed by Combining Inorganic Glasses and Metalâ€Organic Frameworks. Chemistry - A European Journal, 2022, 28, .	1.7	1
128	Highlights from the Faraday Discussion on New Directions in Porous Crystalline Materials, Edinburgh, UK, June 2017. Chemical Communications, 2017, 53, 10750-10756.	2.2	0
129	Local Coordination in Metal-Organic Frameworks Probed in the Vibrational and Optical Regime by EELS. Microscopy and Microanalysis, 2019, 25, 606-607.	0.2	0
130	Gas Permeation of Sulfur Thin-Films and Potential as a Barrier Material. Membranes, 2019, 9, 72.	1.4	0
131	Materials breaking the rules: general discussion. Faraday Discussions, 2021, 225, 255-270.	1.6	0
132	Amorphization of hybrid framework materials. , 2022, , .		0
133	Metalâ€“Organic Frameworks: Special Collection 2020. Chemistry - A European Journal, 2022, 28, e202200607.	1.7	0