Michael O'keeffe

List of Publications by Year
in descending order

123 papers	95,728 citations	10650 74 h-index	14779 131 g-index
139 all docs	139 docs citations	139 times ranked	45547 citing authors

#	Article	IF	Citations
1	Isogonal piecewise-linear embeddings of 1-periodic knots and links, and related 2-periodic chain-link and knitting patterns. Acta Crystallographica Section A: Foundations and Advances, 2022, 78, 234-241.	0.0	3
2	Isogonal piecewise linear embeddings of 1-periodic weaves and some related structures. Acta Crystallographica Section A: Foundations and Advances, 2021, 77, 130-137.	0.0	4
3	Evolution of 14-Connected Zr₆ Secondary Building Units through Postsynthetic Linker Incorporation. ACS Applied Materials & Interfaces, 2021, 13, 51945-51953.	4.0	15
4	On Borromean links and related structures. Acta Crystallographica Section A: Foundations and Advances, 2021, 77, 379-391.	0.0	9
5	Isogonal weavings on the sphere: knots, links, polycatenanes. Acta Crystallographica Section A: Foundations and Advances, 2020, 76, 611-621.	0.0	16
6	A Robust and Biocompatible Bismuth Ellagate MOF Synthesized Under Green Ambient Conditions. Journal of the American Chemical Society, 2020, 142, 16795-16804.	6.6	115
7	Isogonal non-crystallographic periodic graphs based on knotted sodalite cages. Acta Crystallographica Section A: Foundations and Advances, 2020, 76, 735-738.	0.0	3
8	Integrating the Pillared-Layer Strategy and Pore-Space Partition Method to Construct Multicomponent MOFs for C₂H₂/CO₂ Separation. Journal of the American Chemical Society, 2020, 142, 9258-9266.	6.6	141
9	Reticular Chemistry 3.2: Typical Minimal Edge-Transitive Derived and Related Nets for the Design and Synthesis of Metalâ€“Organic Frameworks. Chemical Reviews, 2020, 120, 8039-8065.	23.0	149
10	Crystallographic descriptions of regular 2-periodic weavings of threads, loops and nets. Acta Crystallographica Section A: Foundations and Advances, 2020, 76, 110-120.	0.0	16
11	Enriching the Reticular Chemistry Repertoire with Minimal Edge-Transitive Related Nets: Access to Highly Coordinated Metalâ€“Organic Frameworks Based on Double Six-Membered Rings as Net-Coded Building Units. Journal of the American Chemical Society, 2019, 141, 20480-20489.	6.6	42
12	Mesoporous Cages in Chemically Robust MOFs Created by a Large Number of Vertices with Reduced Connectivity. Journal of the American Chemical Society, 2019, 141, 488-496.	6.6	126
13	Programmable Topology in New Families of Heterobimetallic Metalâ€“Organic Frameworks. Journal of the American Chemical Society, 2018, 140, 6194-6198.	6.6	78
14	The geometry of periodic knots, polycatenanes and weaving from a chemical perspective: a library for reticular chemistry. Chemical Society Reviews, 2018, 47, 4642-4664.	18.7	126
15	Regular Figures, Minimal Transitivity, and Reticular Chemistry. Israel Journal of Chemistry, 2018, 58, 962-970.	1.0	9
16	Enriching the Reticular Chemistry Repertoire: Merged Nets Approach for the Rational Design of Intricate Mixed-Linker Metalâ€“Organic Framework Platforms. Journal of the American Chemical Society, 2018, 140, 8858-8867.	6.6	129
17	The Organic Secondary Building Unit: Strong Intermolecular Ï€ Interactions Define Topology in MIT-25, a Mesoporous MOF with Proton-Replete Channels. Journal of the American Chemical Society, 2017, 139, 3619-3622.	6.6	72
18	Applying the Power of Reticular Chemistry to Finding the Missing alb-MOF Platform Based on the (6,12)-Coordinated Edge-Transitive Net. Journal of the American Chemical Society, 2017, 139, 3265-3274.	6.6	104

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19	Bottom-up construction of a superstructure in a porous uranium-organic crystal. Science, 2017, 356, 624-627.	6.0	286
20	Edge-2-transitive trinodal polyhedra and 2-periodic tilings. Acta Crystallographica Section A: Foundations and Advances, 2017, 73, 227-230.	0.0	13
21	Minimal edge-transitive nets for the design and construction of metalâ€“organic frameworks. Faraday Discussions, 2017, 201, 127-143.	1.6	32
22	2-Periodic self-dual tilings. Acta Crystallographica Section A: Foundations and Advances, 2017, 73, 14-18.	0.0	2
23	UTSA-74: A MOF-74 Isomer with Two Accessible Binding Sites per Metal Center for Highly Selective Gas Separation. Journal of the American Chemical Society, 2016, 138, 5678-5684.	6.6	489
24	A metalâ€“organic framework with rod secondary building unit based on the Boerdijkâ€“Coxeter helix. Chemical Communications, 2016, 52, 11543-11546.	2.2	11
25	Some equivalent two-dimensional weavings at the molecular scale in 2D and 3D metalâ€“organic frameworks. CrystEngComm, 2016, 18, 7607-7613.	1.3	11
26	Structures of Metalâ€“Organic Frameworks with Rod Secondary Building Units. Chemical Reviews, 2016, 116, 12466-12535.	23.0	732
27	Unprecedented Topological Complexity in a Metalâ€“Organic Framework Constructed from Simple Building Units. Journal of the American Chemical Society, 2016, 138, 1970-1976.	6.6	155
28	A Rodâ€Packing Microporous Hydrogenâ€Bonded Organic Framework for Highly Selective Separation of C₂H₂/CO₂ at Room Temperature. Angewandte Chemie - International Edition, 2015, 54, 574-577.	7.2	289
29	Pentagonal helices in a periodic metalâ€“organic framework. Crystals as computers for discovering structures of minimal transitivity. Chemical Communications, 2015, 51, 12228-12230.	2.2	8
30	High-symmetry embeddings of interpenetrating periodic nets. Essential rings and patterns of catenation. Acta Crystallographica Section A: Foundations and Advances, 2015, 71, 82-91.	0.0	41
31	Formation of a new archetypal Metal-Organic Framework from a simple monatomic liquid. Journal of Chemical Physics, 2014, 141, 234503.	1.2	6
32	A Stable Microporous Mixedâ€Metal Metalâ€“Organic Framework with Highly Active Cu²⁺ Sites for Efficient Crossâ€Dehydrogenative Coupling Reactions. Chemistry - A European Journal, 2014, 20, 1447-1452.	1.7	55
33	Topological Analysis of Metalâ€“Organic Frameworks with Polytopic Linkers and/or Multiple Building Units and the Minimal Transitivity Principle. Chemical Reviews, 2014, 114, 1343-1370.	23.0	1,010
34	ROD-8, a rod MOF with a pyrene-cored tetracarboxylate linker: framework disorder, derived nets and selective gas adsorption. CrystEngComm, 2014, 16, 6291-6295.	1.3	28
35	A highly stable MOF with a rod SBU and a tetracarboxylate linker: unusual topology and CO₂adsorption behaviour under ambient conditions. Chemical Communications, 2014, 50, 4047-4049.	2.2	104
36	Multifunctional metalâ€“organic frameworks constructed from meta-benzenedicarboxylate units. Chemical Society Reviews, 2014, 43, 5618-5656.	18.7	476

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37	Rigid, flexible and impossible zeolite and related structures. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2014, 372, 20120034.	1.6	4
38	Network topology approach to new allotropes of the group 14 elements. Zeitschrift Fur Kristallographie - Crystalline Materials, 2013, 228, 343-346.	0.4	24
39	The Chemistry and Applications of Metal-Organic Frameworks. Science, 2013, 341, 1230444.	6.0	12,032
40	A mesoporous lanthanideâ€“organic framework constructed from a dendritic hexacarboxylate with cages of 2.4 nm. CrystEngComm, 2013, 15, 9328.	1.3	36
41	Nets with collisions (unstable nets) and crystal chemistry. Acta Crystallographica Section A: Foundations and Advances, 2013, 69, 535-542.	0.3	18
42	Metastable Interwoven Mesoporous Metalâ€“Organic Frameworks. Inorganic Chemistry, 2013, 52, 11580-11584.	1.9	60
43	Low-energy regeneration and high productivity in a lanthanideâ€“hexacarboxylate framework for high-pressure CO2â€“CH4â€“H2 separation. Chemical Communications, 2013, 49, 6773.	2.2	66
44	Minimal nets and minimal minimal surfaces. Acta Crystallographica Section A: Foundations and Advances, 2013, 69, 483-489.	0.3	13
45	A microporous metalâ€“organic framework of a rare sty topology for high CH4 storage at room temperature. Chemical Communications, 2013, 49, 2043.	2.2	61
46	An unprecedented (3,4,24)-connected heteropolyoxozincate organic framework as heterogeneous crystalline Lewis acid catalyst for biodiesel production. Scientific Reports, 2013, 3, 2616.	1.6	39
47	A microporous lanthanide-tricarboxylate framework with the potential for purification of natural gas. Chemical Communications, 2012, 48, 10856.	2.2	134
48	Deconstructing the Crystal Structures of Metalâ€“Organic Frameworks and Related Materials into Their Underlying Nets. Chemical Reviews, 2012, 112, 675-702.	23.0	1,942
49	Large-Pore Apertures in a Series of Metal-Organic Frameworks. Science, 2012, 336, 1018-1023.	6.0	1,729
50	Coordination polymers, metalâ€“organic frameworks and the need for terminology guidelines. CrystEngComm, 2012, 14, 3001.	1.3	464
51	Reversible Interpenetration in a Metalâ€“Organic Framework Triggered by Ligand Removal and Addition. Angewandte Chemie - International Edition, 2012, 51, 8791-8795.	7.2	129
52	Secondâ€Order Nonlinear Optical Activity Induced by Ordered Dipolar Chromophores Confined in the Pores of an Anionic Metalâ€“Organic Framework. Angewandte Chemie - International Edition, 2012, 51, 10542-10545.	7.2	279
53	Porous, Conductive Metalâ€Triazolates and Their Structural Elucidation by the Chargeâ€Flipping Method. Chemistry - A European Journal, 2012, 18, 10595-10601.	1.7	227
54	Porous Metalloporphyrinic Frameworks Constructed from Metal 5,10,15,20-Tetrakis(3,5-biscarboxylphenyl)porphyrin for Highly Efficient and Selective Catalytic Oxidation of Alkylbenzenes. Journal of the American Chemical Society, 2012, 134, 10638-10645.	6.6	265

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55	High Separation Capacity and Selectivity of C₂ Hydrocarbons over Methane within a Microporous Metalâ€“Organic Framework at Room Temperature. Chemistry - A European Journal, 2012, 18, 1901-1904.	1.7	142
56	A robust near infrared luminescent ytterbium metalâ€“organic framework for sensing of small molecules. Chemical Communications, 2011, 47, 5551-5553.	2.2	345
57	Isoreticular Expansion of Metalâ€“Organic Frameworks with Triangular and Square Building Units and the Lowest Calculated Density for Porous Crystals. Inorganic Chemistry, 2011, 50, 9147-9152.	1.9	322
58	Polyoxometalate-Based Metal Organic Frameworks (POMOFs): Structural Trends, Energetics, and High Electrocatalytic Efficiency for Hydrogen Evolution Reaction. Journal of the American Chemical Society, 2011, 133, 13363-13374.	6.6	490
59	A Metalâ€“Organic Framework with Optimized Open Metal Sites and Pore Spaces for High Methane Storage at Room Temperature. Angewandte Chemie - International Edition, 2011, 50, 3178-3181.	7.2	340
60	Synthesis, Structure, and Carbon Dioxide Capture Properties of Zeolitic Imidazolate Frameworks. Accounts of Chemical Research, 2010, 43, 58-67.	7.6	2,268
61	Dense quasicrystalline tilings by squares and equilateral triangles. Acta Crystallographica Section A: Foundations and Advances, 2010, 66, 5-9.	0.3	16
62	Simple tilings by polyhedra with five- and six-sided faces. Acta Crystallographica Section A: Foundations and Advances, 2010, 66, 637-639.	0.3	18
63	Aspects of crystal structure prediction: some successes and some difficulties. Physical Chemistry Chemical Physics, 2010, 12, 8580.	1.3	21
64	Ultrahigh Porosity in Metal-Organic Frameworks. Science, 2010, 329, 424-428.	6.0	3,306
65	Flipping Marvelous: New Zeolites by New Methods. Angewandte Chemie - International Edition, 2009, 48, 8182-8184.	7.2	11
66	Edge-transitive lattice nets. Acta Crystallographica Section A: Foundations and Advances, 2009, 65, 360-363.	0.3	24
67	Secondary building units, nets and bonding in the chemistry of metalâ€“organic frameworks. Chemical Society Reviews, 2009, 38, 1257.	18.7	2,243
68	Design of MOFs and intellectual content in reticular chemistry: a personal view. Chemical Society Reviews, 2009, 38, 1215.	18.7	407
69	Control of Pore Size and Functionality in Isoreticular Zeolitic Imidazolate Frameworks and their Carbon Dioxide Selective Capture Properties. Journal of the American Chemical Society, 2009, 131, 3875-3877.	6.6	1,297
70	A Crystalline Imine-Linked 3-D Porous Covalent Organic Framework. Journal of the American Chemical Society, 2009, 131, 4570-4571.	6.6	1,299
71	Three-periodic nets and tilings: regular and related infinite polyhedra. Acta Crystallographica Section A: Foundations and Advances, 2008, 64, 425-429.	0.3	34
72	Reticular Chemistry of Metalâ€“Organic Polyhedra. Angewandte Chemie - International Edition, 2008, 47, 5136-5147.	7.2	849

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73	A Short History of an Elusive Yet Ubiquitous Structure in Chemistry, Materials, and Mathematics. Angewandte Chemie - International Edition, 2008, 47, 7996-8000.	7.2	147
74	High-Throughput Synthesis of Zeolitic Imidazolate Frameworks and Application to CO ₂ Capture. Science, 2008, 319, 939-943.	6.0	3,592
75	Colossal cages in zeolitic imidazolate frameworks as selective carbon dioxide reservoirs. Nature, 2008, 453, 207-211.	13.7	1,452
76	The Reticular Chemistry Structure Resource (RCSR) Database of, and Symbols for, Crystal Nets. Accounts of Chemical Research, 2008, 41, 1782-1789.	7.6	1,953
77	Control of Vertex Geometry, Structure Dimensionality, Functionality, and Pore Metrics in the Reticular Synthesis of Crystalline Metalâ˜Organic Frameworks and Polyhedra. Journal of the American Chemical Society, 2008, 130, 11650-11661.	6.6	498
78	Taxonomy of periodic nets and the design of materials. Physical Chemistry Chemical Physics, 2007, 9, 1035-1043.	1.3	239
79	Designed Synthesis of 3D Covalent Organic Frameworks. Science, 2007, 316, 268-272.	6.0	2,024
80	Three-periodic tilings and nets: face-transitive tilings and edge-transitive nets revisited. Acta Crystallographica Section A: Foundations and Advances, 2007, 63, 344-347.	0.3	65
81	Three-periodic nets and tilings: natural tilings for nets. Acta Crystallographica Section A: Foundations and Advances, 2007, 63, 418-425.	0.3	188
82	Zeolite A imidazolate frameworks. Nature Materials, 2007, 6, 501-506.	13.3	917
83	On a simple tiling of Deza and Shtogrin. Acta Crystallographica Section A: Foundations and Advances, 2006, 62, 228-229.	0.3	12
84	Three-periodic nets and tilings: edge-transitive binodal structures. Acta Crystallographica Section A: Foundations and Advances, 2006, 62, 350-355.	0.3	206
85	Exceptional chemical and thermal stability of zeolitic imidazolate frameworks. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 10186-10191.	3.3	5,906
86	A Metalâ€“Organic Framework with a Hierarchical System of Pores and Tetrahedral Building Blocks. Angewandte Chemie - International Edition, 2006, 45, 2528-2533.	7.2	196
87	Porous, Crystalline, Covalent Organic Frameworks. Science, 2005, 310, 1166-1170.	6.0	5,574
88	A mesoporous germanium oxide with crystalline pore walls and its chiral derivative. Nature, 2005, 437, 716-719.	13.7	283
89	Reticular Chemistry: Occurrence and Taxonomy of Nets and Grammar for the Design of Frameworks. ChemInform, 2005, 36, no.	0.1	2
90	A Mesoporous Germanium Oxide with Crystalline Pore Walls and Its Chiral Derivative.. ChemInform, 2005, 36, no.	0.1	0

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91	Isohedral simple tilings: binodal and by tiles with â‰¤16 faces. Acta Crystallographica Section A: Foundations and Advances, 2005, 61, 358-362.	0.3	40
92	Rod Packings and Metalâ^'Organic Frameworks Constructed from Rod-Shaped Secondary Building Units. Journal of the American Chemical Society, 2005, 127, 1504-1518.	6.6	2,186
93	Reticular Chemistry:â€‰ Occurrence and Taxonomy of Nets and Grammar for the Design of Frameworks. Accounts of Chemical Research, 2005, 38, 176-182.	7.6	2,072
94	A route to high surface area, porosity and inclusion of large molecules in crystals. Nature, 2004, 427, 523-527.	13.7	2,574
95	Three-periodic nets and tilings: minimal nets. Acta Crystallographica Section A: Foundations and Advances, 2004, 60, 517-520.	0.3	101
96	Structures of Carbon Nanocrystals. Chemistry of Materials, 2004, 16, 4905-4911.	3.2	27
97	Hydrogen Storage in Microporous Metal-Organic Frameworks. Science, 2003, 300, 1127-1129.	6.0	4,435
98	The CdSO4, rutile, cooperite and quartz dual nets: interpenetration and catenation. Solid State Sciences, 2003, 5, 73-78.	1.5	101
99	[Cd16In64S134]44â^': 31-Ã... Tetrahedron with a Large Cavity. Angewandte Chemie, 2003, 115, 1863-1865.	1.6	17
100	Titelbild: [Cd16In64S134]44: 31-Ã... Tetrahedron with a Large Cavity (Angew. Chem. 16/2003). Angewandte Chemie, 2003, 115, 1817-1817.	1.6	4
101	Design of Frameworks with Mixed Triangular and Octahedral Building Blocks Exemplified by the Structure of[Zn4O(TCA)2] Having the Pyrite Topology. Angewandte Chemie - International Edition, 2003, 42, 3907-3909.	7.2	200
102	Cover Picture: [Cd16In64S134]44: 31-Ã... Tetrahedron with a Large Cavity (Angew. Chem. Int. Ed. 16/2003). Angewandte Chemie - International Edition, 2003, 42, 1775-1775.	7.2	2
103	Three-periodic nets and tilings: regular and quasiregular nets. Acta Crystallographica Section A: Foundations and Advances, 2003, 59, 22-27.	0.3	425
104	Identification of and symmetry computation for crystal nets. Acta Crystallographica Section A: Foundations and Advances, 2003, 59, 351-360.	0.3	295
105	Three-periodic nets and tilings: semiregular nets. Acta Crystallographica Section A: Foundations and Advances, 2003, 59, 515-525.	0.3	222
106	Reticular synthesis and the design of new materials. Nature, 2003, 423, 705-714.	13.7	8,374
107	Layered Structures Constructed from New Linkages of Ge7(O,OH,F)19Clusters. Chemistry of Materials, 2003, 15, 714-718.	3.2	50
108	Synthesis and Characterization of Zirconogermanates. Inorganic Chemistry, 2003, 42, 5954-5959.	1.9	43

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109	Cu2[o-Br-C6H3(CO2)2]2(H2O)2Â·(DMF)8(H2O)2:â€‰ A Framework Deliberately Designed To Have the NbO Structure Type. Journal of the American Chemical Society, 2002, 124, 376-377.	6.6	383
110	Advances in the chemistry of metalâ€“organic frameworks. CrystEngComm, 2002, 4, 401-404.	1.3	271
111	One-Step Synthesis and Structure of an Oligo(spiro-orthocarbonate). Journal of the American Chemical Society, 2002, 124, 4942-4943.	6.6	18
112	Geometric requirements and examples of important structures in the assembly of square building blocks. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 4900-4904.	3.3	353
113	Infinite Secondary Building Units and Forbidden Catenation in Metal-Organic Frameworks The National Science Foundation support to M.O'K. (DMR- 9804817) and O.M.Y. (DMR-9980469) is gratefully acknowledged.. Angewandte Chemie - International Edition, 2002, 41, 284.	7.2	293
114	Systematic Design of Pore Size and Functionality in Isoreticular MOFs and Their Application in Methane Storage. Science, 2002, 295, 469-472.	6.0	7,254
115	Tertiary Building Units:Â Synthesis, Structure, and Porosity of a Metalâ^'Organic Dendrimer Framework (MODF-1)âŠ¥. Journal of the American Chemical Society, 2001, 123, 11482-11483.	6.6	113
116	Assembly of Metalâ^'Organic Frameworks from Large Organic and Inorganic Secondary Building Units:Â New Examples and Simplifying Principles for Complex Structuresâ–µ. Journal of the American Chemical Society, 2001, 123, 8239-8247.	6.6	789
117	A Flexible Germanate Structure Containing 24-Ring Channels and with Very Low Framework Density. Journal of the American Chemical Society, 2001, 123, 12706-12707.	6.6	163
118	Modular Chemistry:â€‰ Secondary Building Units as a Basis for the Design of Highly Porous and Robust Metalâ^'Organic Carboxylate Frameworks. Accounts of Chemical Research, 2001, 34, 319-330.	7.6	4,980
119	Tiling by numbers. Nature, 1999, 400, 617-618.	13.7	29
120	New ice outdoes related nets in smallest-ring size. Nature, 1998, 392, 879-879.	13.7	45
121	Icosahedral packing of B12 icosahedra in boron suboxide (B6O). Nature, 1998, 391, 376-378.	13.7	242
122	Optimal circular packing. Nature, 1991, 352, 27-27.	13.7	2
123	Madelung Constants for the C3 and C9 Structures. Journal of Chemical Physics, 1963, 38, 3035-3035.	1.2	11