Michael O keeffe

List of Publications by Year in Descending Order

130 papers	81,429 citations	71 h-index	139 g-index
139 ext. papers	88,175 ext. citations	17.5 avg, IF	8.04 L-index

#	Paper	IF	Citations
130	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	1.7	1
129	Evolution of 14-Connected Zr Secondary Building Units through Postsynthetic Linker Incorporation. *ACS Applied Materials & Interfaces*, **2021**,	9.5	5
128	Isogonal piecewise linear embeddings of 1-periodic weaves and some related structures. *Acta Crystallographica Section A: Foundations and Advances*, **2021**, 77, 130-137	1.7	4
127	On Borromean links and related structures. *Acta Crystallographica Section A: Foundations and Advances*, **2021**, 77, 379-391	1.7	2
126	Isogonal non-crystallographic periodic graphs based on knotted sodalite cages. *Acta Crystallographica Section A: Foundations and Advances*, **2020**, 76, 735-738	1.7	1
125	Integrating the Pillared-Layer Strategy and Pore-Space Partition Method to Construct Multicomponent MOFs for CH/CO Separation. *Journal of the American Chemical Society*, **2020**, 142, 9258-9266	16.4	64
124	Crystallographic descriptions of regular 2-periodic weavings of threads, loops and nets. *Acta Crystallographica Section A: Foundations and Advances*, **2020**, 76, 110-120	1.7	7
123	Isogonal weavings on the sphere: knots, links, polycatenanes. *Acta Crystallographica Section A: Foundations and Advances*, **2020**, 76, 611-621	1.7	11
122	A Robust and Biocompatible Bismuth Ellagate MOF Synthesized Under Green Ambient Conditions. *Journal of the American Chemical Society*, **2020**, 142, 16795-16804	16.4	52
121	Reticular Chemistry 3.2: Typical Minimal Edge-Transitive and Nets for the Design and Synthesis of Metal-Organic Frameworks. *Chemical Reviews*, **2020**, 120, 8039-8065	68.1	75
120	Enriching the Reticular Chemistry Repertoire with Minimal Edge-Transitive Related Nets: Access to Highly Coordinated Metal-Organic Frameworks Based on Double Six-Membered Rings as Net-Coded Building Units. *Journal of the American Chemical Society*, **2019**, 141, 20480-20489	16.4	28
119	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	16.4	75
118	Programmable Topology in New Families of Heterobimetallic Metal-Organic Frameworks. *Journal of the American Chemical Society*, **2018**, 140, 6194-6198	16.4	58
117	The geometry of periodic knots, polycatenanes and weaving from a chemical perspective: a library for reticular chemistry. *Chemical Society Reviews*, **2018**, 47, 4642-4664	58.5	94
116	Enriching the Reticular Chemistry Repertoire: Merged Nets Approach for the Rational Design of Intricate Mixed-Linker Metal-Organic Framework Platforms. *Journal of the American Chemical Society*, **2018**, 140, 8858-8867	16.4	91
115	Regular Figures, Minimal Transitivity, and Reticular Chemistry. *Israel Journal of Chemistry*, **2018**, 58, 962-970	3.4	6
114	The Organic Secondary Building Unit: Strong Intermolecular Interactions Define Topology in MIT-25, a Mesoporous MOF with Proton-Replete Channels. *Journal of the American Chemical Society*, **2017**, 139, 3619-3622	16.4	59

113	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	16.4	84
112	Bottom-up construction of a superstructure in a porous uranium-organic crystal. *Science*, **2017**, 356, 624-627	33.3	223
111	Edge-2-transitive trinodal polyhedra and 2-periodic tilings. *Acta Crystallographica Section A: Foundations and Advances*, **2017**, 73, 227-230	1.7	10
110	Minimal edge-transitive nets for the design and construction of metal-organic frameworks. *Faraday Discussions*, **2017**, 201, 127-143	3.6	26
109	2-Periodic self-dual tilings. *Acta Crystallographica Section A: Foundations and Advances*, **2017**, 73, 14-18	1.7	2
108	A metal-organic framework with rod secondary building unit based on the Boerdijk-Coxeter helix. *Chemical Communications*, **2016**, 52, 11543-11546	5.8	10
107	Some equivalent two-dimensional weavings at the molecular scale in 2D and 3D metal-organic frameworks. *CrystEngComm*, **2016**, 18, 7607-7613	3.3	9
106	Structures of Metal-Organic Frameworks with Rod Secondary Building Units. *Chemical Reviews*, **2016**, 116, 12466-12535	68.1	570
105	Unprecedented Topological Complexity in a Metal-Organic Framework Constructed from Simple Building Units. *Journal of the American Chemical Society*, **2016**, 138, 1970-6	16.4	105
104	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, 5678-84	16.4	351
103	Pentagonal helices in a periodic metal-organic framework. Crystals as computers for discovering structures of minimal transitivity. *Chemical Communications*, **2015**, 51, 12228-30	5.8	8
102	High-symmetry embeddings of interpenetrating periodic nets. Essential rings and patterns of catenation. *Acta Crystallographica Section A: Foundations and Advances*, **2015**, 71, 82-91	1.7	30
101	A rod-packing microporous hydrogen-bonded organic framework for highly selective separation of C2H2/CO2 at room temperature. *Angewandte Chemie - International Edition*, **2015**, 54, 574-7	16.4	137
100	A Rod-Packing Microporous Hydrogen-Bonded Organic Framework for Highly Selective Separation of C2H2/CO2 at Room Temperature. *Angewandte Chemie*, **2015**, 127, 584-587	3.6	92
99	A stable microporous mixed-metal metal-organic framework with highly active Cu2+ sites for efficient cross-dehydrogenative coupling reactions. *Chemistry - A European Journal*, **2014**, 20, 1447-52	4.8	49
98	Topological analysis of metal-organic frameworks with polytopic linkers and/or multiple building units and the minimal transitivity principle. *Chemical Reviews*, **2014**, 114, 1343-70	68.1	894
97	ROD-8, a rod MOF with a pyrene-cored tetracarboxylate linker: framework disorder, derived nets and selective gas adsorption. *CrystEngComm*, **2014**, 16, 6291-6295	3.3	24
96	A highly stable MOF with a rod SBU and a tetracarboxylate linker: unusual topology and CO2 adsorption behaviour under ambient conditions. *Chemical Communications*, **2014**, 50, 4047-9	5.8	90

95	Multifunctional metal-organic frameworks constructed from meta-benzenedicarboxylate units. *Chemical Society Reviews*, **2014**, 43, 5618-56	58.5	431
94	Rigid, flexible and impossible zeolite and related structures. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2014**, 372, 20120034	3	3
93	Formation of a new archetypal Metal-Organic Framework from a simple monatomic liquid. *Journal of Chemical Physics*, **2014**, 141, 234503	3.9	4
92	Network topology approach to new allotropes of the group 14 elements. *Zeitschrift Fur Kristallographie - Crystalline Materials*, **2013**, 228, 343-346	1	19
91	The chemistry and applications of metal-organic frameworks. *Science*, **2013**, 341, 1230444	33.3	9059
90	A mesoporous lanthanide–organic framework constructed from a dendritic hexacarboxylate with cages of 2.4 nm. *CrystEngComm*, **2013**, 15, 9328	3.3	33
89	Nets with collisions (unstable nets) and crystal chemistry. *Acta Crystallographica Section A: Foundations and Advances*, **2013**, 69, 535-42		16
88	Metastable interwoven mesoporous metal-organic frameworks. *Inorganic Chemistry*, **2013**, 52, 11580-4	5.1	59
87	Low-energy regeneration and high productivity in a lanthanide-hexacarboxylate framework for high-pressure CO2-CH4-H2 separation. *Chemical Communications*, **2013**, 49, 6773-5	5.8	61
86	Minimal nets and minimal minimal surfaces. *Acta Crystallographica Section A: Foundations and Advances*, **2013**, 69, 483-489		9
85	A microporous metal-organic framework of a rare sty topology for high CH4 storage at room temperature. *Chemical Communications*, **2013**, 49, 2043-5	5.8	58
84	An unprecedented (3,4,24)-connected heteropolyoxozincate organic framework as heterogeneous crystalline Lewis acid catalyst for biodiesel production. *Scientific Reports*, **2013**, 3, 2616	4.9	34
83	High separation capacity and selectivity of C2 hydrocarbons over methane within a microporous metal-organic framework at room temperature. *Chemistry - A European Journal*, **2012**, 18, 1901-4	4.8	127
82	A microporous lanthanide-tricarboxylate framework with the potential for purification of natural gas. *Chemical Communications*, **2012**, 48, 10856-8	5.8	120
81	Deconstructing the crystal structures of metal-organic frameworks and related materials into their underlying nets. *Chemical Reviews*, **2012**, 112, 675-702	68.1	1794
80	Large-pore apertures in a series of metal-organic frameworks. *Science*, **2012**, 336, 1018-23	33.3	1425
79	Coordination polymers, metal–organic frameworks and the need for terminology guidelines. *CrystEngComm*, **2012**, 14, 3001	3.3	392
78	Reversible Interpenetration in a Metal–Organic Framework Triggered by Ligand Removal and Addition. *Angewandte Chemie*, **2012**, 124, 8921-8925	3.6	25

77	Second-Order Nonlinear Optical Activity Induced by Ordered Dipolar Chromophores Confined in the Pores of an Anionic Metal□Organic Framework. *Angewandte Chemie*, **2012**, 124, 10694-10697	3.6	47
76	Reversible interpenetration in a metal-organic framework triggered by ligand removal and addition. *Angewandte Chemie - International Edition*, **2012**, 51, 8791-5	16.4	113
75	Second-order nonlinear optical activity induced by ordered dipolar chromophores confined in the pores of an anionic metal-organic framework. *Angewandte Chemie - International Edition*, **2012**, 51, 10542-5	16.4	255
74	Porous, conductive metal-triazolates and their structural elucidation by the charge-flipping method. *Chemistry - A European Journal*, **2012**, 18, 10595-601	4.8	172
73	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, 10638-45	16.4	244
72	Isoreticular expansion of metal-organic frameworks with triangular and square building units and the lowest calculated density for porous crystals. *Inorganic Chemistry*, **2011**, 50, 9147-52	5.1	263
71	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, 13363-74	16.4	433
70	A Metal□Organic Framework with Optimized Open Metal Sites and Pore Spaces for High Methane Storage at Room Temperature. *Angewandte Chemie*, **2011**, 123, 3236-3239	3.6	36
69	A metal-organic framework with optimized open metal sites and pore spaces for high methane storage at room temperature. *Angewandte Chemie - International Edition*, **2011**, 50, 3178-81	16.4	321
68	A robust near infrared luminescent ytterbium metal-organic framework for sensing of small molecules. *Chemical Communications*, **2011**, 47, 5551-3	5.8	321
67	Aspects of crystal structure prediction: some successes and some difficulties. *Physical Chemistry Chemical Physics*, **2010**, 12, 8580-3	3.6	18
66	Ultrahigh porosity in metal-organic frameworks. *Science*, **2010**, 329, 424-8	33.3	2869
65	Synthesis, structure, and carbon dioxide capture properties of zeolitic imidazolate frameworks. *Accounts of Chemical Research*, **2010**, 43, 58-67	24.3	1967
64	Dense quasicrystalline tilings by squares and equilateral triangles. *Acta Crystallographica Section A: Foundations and Advances*, **2010**, 66, 5-9		14
63	Simple tilings by polyhedra with five- and six-sided faces. *Acta Crystallographica Section A: Foundations and Advances*, **2010**, 66, 637-9		15
62	Mit neuen Methoden zu neuen Zeolithen. *Angewandte Chemie*, **2009**, 121, 8328-8330	3.6	
61	Flipping marvelous: new zeolites by new methods. *Angewandte Chemie - International Edition*, **2009**, 48, 8182-4	16.4	9
60	Edge-transitive lattice nets. *Acta Crystallographica Section A: Foundations and Advances*, **2009**, 65, 360-3		23

59	Secondary building units, nets and bonding in the chemistry of metal-organic frameworks. *Chemical Society Reviews*, **2009**, 38, 1257-83	58.5	2025
58	Design of MOFs and intellectual content in reticular chemistry: a personal view. *Chemical Society Reviews*, **2009**, 38, 1215-7	58.5	356
57	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, 3875-7	16.4	1146
56	A crystalline imine-linked 3-D porous covalent organic framework. *Journal of the American Chemical Society*, **2009**, 131, 4570-1	16.4	1005
55	Colossal cages in zeolitic imidazolate frameworks as selective carbon dioxide reservoirs. *Nature*, **2008**, 453, 207-11	50.4	1302
54	The Reticular Chemistry Structure Resource (RCSR) database of, and symbols for, crystal nets. *Accounts of Chemical Research*, **2008**, 41, 1782-9	24.3	1680
53	Control of vertex geometry, structure dimensionality, functionality, and pore metrics in the reticular synthesis of crystalline metal-organic frameworks and polyhedra. *Journal of the American Chemical Society*, **2008**, 130, 11650-61	16.4	467
52	Three-periodic nets and tilings: regular and related infinite polyhedra. *Acta Crystallographica Section A: Foundations and Advances*, **2008**, 64, 425-9		30
51	Reticular chemistry of metal-organic polyhedra. *Angewandte Chemie - International Edition*, **2008**, 47, 5136-47	16.4	760
50	A short history of an elusive yet ubiquitous structure in chemistry, materials, and mathematics. *Angewandte Chemie - International Edition*, **2008**, 47, 7996-8000	16.4	129
49	Retikulre Chemie metall-organischer Polyeder. *Angewandte Chemie*, **2008**, 120, 5214-5225	3.6	148
48	Netze und Gyroide: wenig bekannt und doch in Chemie, Materialwissenschaften und Mathematik allgegenwrtig. *Angewandte Chemie*, **2008**, 120, 8116-8121	3.6	8
47	High-throughput synthesis of zeolitic imidazolate frameworks and application to CO2 capture. *Science*, **2008**, 319, 939-43	33.3	3044
46	Taxonomy of periodic nets and the design of materials. *Physical Chemistry Chemical Physics*, **2007**, 9, 1035-43	3.6	227
45	Designed synthesis of 3D covalent organic frameworks. *Science*, **2007**, 316, 268-72	33.3	1675
44	Three-periodic tilings and nets: face-transitive tilings and edge-transitive nets revisited. *Acta Crystallographica Section A: Foundations and Advances*, **2007**, 63, 344-7		56
43	Three-periodic nets and tilings: natural tilings for nets. *Acta Crystallographica Section A: Foundations and Advances*, **2007**, 63, 418-25		153
42	Zeolite A imidazolate frameworks. *Nature Materials*, **2007**, 6, 501-6	27	809

41	A metal-organic framework with a hierarchical system of pores and tetrahedral building blocks. *Angewandte Chemie - International Edition*, **2006**, 45, 2528-33	16.4	185
40	A Metal□Organic Framework with a Hierarchical System of Pores and Tetrahedral Building Blocks. *Angewandte Chemie*, **2006**, 118, 2590-2595	3.6	27
39	On a simple tiling of Deza and Shtogrin. *Acta Crystallographica Section A: Foundations and Advances*, **2006**, 62, 228-9		10
38	Three-periodic nets and tilings: edge-transitive binodal structures. *Acta Crystallographica Section A: Foundations and Advances*, **2006**, 62, 350-5		190
37	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	11.5	4715
36	Rod packings and metal-organic frameworks constructed from rod-shaped secondary building units. *Journal of the American Chemical Society*, **2005**, 127, 1504-18	16.4	1963
35	Reticular chemistry: occurrence and taxonomy of nets and grammar for the design of frameworks. *Accounts of Chemical Research*, **2005**, 38, 176-82	24.3	1975
34	Porous, crystalline, covalent organic frameworks. *Science*, **2005**, 310, 1166-70	33.3	4039
33	A mesoporous germanium oxide with crystalline pore walls and its chiral derivative. *Nature*, **2005**, 437, 716-9	50.4	262
32	Reticular Chemistry: Occurrence and Taxonomy of Nets and Grammar for the Design of Frameworks. *ChemInform*, **2005**, 36, no		1
31	Isohedral simple tilings: binodal and by tiles with . *Acta Crystallographica Section A: Foundations and Advances*, **2005**, 61, 358-62		38
30	A route to high surface area, porosity and inclusion of large molecules in crystals. *Nature*, **2004**, 427, 523-7	50.4	2337
29	Three-periodic nets and tilings: minimal nets. *Acta Crystallographica Section A: Foundations and Advances*, **2004**, 60, 517-20		91
28	Structures of Carbon Nanocrystals. *Chemistry of Materials*, **2004**, 16, 4905-4911	9.6	24
27	Synthesis and characterization of zirconogermanates. *Inorganic Chemistry*, **2003**, 42, 5954-9	5.1	30
26	Hydrogen storage in microporous metal-organic frameworks. *Science*, **2003**, 300, 1127-9	33.3	4026
25	The CdSO4, rutile, cooperite and quartz dual nets: interpenetration and catenation. *Solid State Sciences*, **2003**, 5, 73-78	3.4	93
24	[Cd16In64S134]44□31-□Tetrahedron with a Large Cavity. *Angewandte Chemie*, **2003**, 115, 1863-1865	3.6	12

23	Titelbild: [Cd16In64S134]44−31-Tetrahedron with a Large Cavity (Angew. Chem. 16/2003). *Angewandte Chemie*, **2003**, 115, 1817-1817	3.6	4
22	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, 3907-9	16.4	187
21	Cover Picture: [Cd16In64S134]44−31-Tetrahedron with a Large Cavity (Angew. Chem. Int. Ed. 16/2003). *Angewandte Chemie - International Edition*, **2003**, 42, 1775-1775	16.4	2
20	Three-periodic nets and tilings: regular and quasiregular nets. *Acta Crystallographica Section A: Foundations and Advances*, **2003**, 59, 22-7		385
19	Identification of and symmetry computation for crystal nets. *Acta Crystallographica Section A: Foundations and Advances*, **2003**, 59, 351-60		240
18	Three-periodic nets and tilings: semiregular nets. *Acta Crystallographica Section A: Foundations and Advances*, **2003**, 59, 515-25		199
17	Reticular synthesis and the design of new materials. *Nature*, **2003**, 423, 705-14	50.4	7597
16	Layered Structures Constructed from New Linkages of Ge7(O,OH,F)19 Clusters. *Chemistry of Materials*, **2003**, 15, 714-718	9.6	46
15	Infinite Secondary Building Units and Forbidden Catenation in Metal-Organic Frameworks. *Angewandte Chemie*, **2002**, 114, 294-297	3.6	52
14	Infinite secondary building units and forbidden catenation in metal-organic frameworks. *Angewandte Chemie - International Edition*, **2002**, 41, 284-7	16.4	263
13	Systematic design of pore size and functionality in isoreticular MOFs and their application in methane storage. *Science*, **2002**, 295, 469-72	33.3	6475
12	Cu(2)[o-Br-C(6)H(3)(CO(2))(2)](2)(H(2)O)(2).(DMF)(8)(H(2)O)(2): a framework deliberately designed to have the NbO structure type. *Journal of the American Chemical Society*, **2002**, 124, 376-7	16.4	345
11	Advances in the chemistry of metal-organic frameworks. *CrystEngComm*, **2002**, 4, 401-404	3.3	239
10	One-step synthesis and structure of an oligo(spiro-orthocarbonate). *Journal of the American Chemical Society*, **2002**, 124, 4942-3	16.4	15
9	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, 4900-4	11.5	327
8	Modular chemistry: secondary building units as a basis for the design of highly porous and robust metal-organic carboxylate frameworks. *Accounts of Chemical Research*, **2001**, 34, 319-30	24.3	4600
7	Tertiary building units: synthesis, structure, and porosity of a metal-organic dendrimer framework (MODF-1). *Journal of the American Chemical Society*, **2001**, 123, 11482-3	16.4	109
6	Assembly of metal-organic frameworks from large organic and inorganic secondary building units: new examples and simplifying principles for complex structures. *Journal of the American Chemical Society*, **2001**, 123, 8239-47	16.4	734

5	A flexible germanate structure containing 24-ring channels and with very low framework density. *Journal of the American Chemical Society*, **2001**, 123, 12706-7	16.4	144
4	New ice outdoes related nets in smallest-ring size. *Nature*, **1998**, 392, 879-879	50.4	37
3	Icosahedral packing of B12 icosahedra in boron suboxide (B6O). *Nature*, **1998**, 391, 376-378	50.4	212
2	Optimal circular packing. *Nature*, **1991**, 352, 27-27	50.4	1
1	Madelung Constants for the C3 and C9 Structures. *Journal of Chemical Physics*, **1963**, 38, 3035-3035	3.9	11