

Michael O keeffe

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130
papers

81,429
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h-index

139
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139
ext. papers

88,175
ext. citations

17.5
avg, IF

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L-index

#	Paper	IF	Citations
130	The chemistry and applications of metal-organic frameworks. <i>Science</i> , 2013 , 341, 1230444	33.3	9059
129	Reticular synthesis and the design of new materials. <i>Nature</i> , 2003 , 423, 705-14	50.4	7597
128	Systematic design of pore size and functionality in isorecticular MOFs and their application in methane storage. <i>Science</i> , 2002 , 295, 469-72	33.3	6475
127	Exceptional chemical and thermal stability of zeolitic imidazolate frameworks. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2006 , 103, 10186-10191	11.5	4715
126	Modular chemistry: secondary building units as a basis for the design of highly porous and robust metal-organic carboxylate frameworks. <i>Accounts of Chemical Research</i> , 2001 , 34, 319-30	24.3	4600
125	Porous, crystalline, covalent organic frameworks. <i>Science</i> , 2005 , 310, 1166-70	33.3	4039
124	Hydrogen storage in microporous metal-organic frameworks. <i>Science</i> , 2003 , 300, 1127-9	33.3	4026
123	High-throughput synthesis of zeolitic imidazolate frameworks and application to CO ₂ capture. <i>Science</i> , 2008 , 319, 939-43	33.3	3044
122	Ultrahigh porosity in metal-organic frameworks. <i>Science</i> , 2010 , 329, 424-8	33.3	2869
121	A route to high surface area, porosity and inclusion of large molecules in crystals. <i>Nature</i> , 2004 , 427, 523-7	50.4	2337
120	Secondary building units, nets and bonding in the chemistry of metal-organic frameworks. <i>Chemical Society Reviews</i> , 2009 , 38, 1257-83	58.5	2025
119	Reticular chemistry: occurrence and taxonomy of nets and grammar for the design of frameworks. <i>Accounts of Chemical Research</i> , 2005 , 38, 176-82	24.3	1975
118	Synthesis, structure, and carbon dioxide capture properties of zeolitic imidazolate frameworks. <i>Accounts of Chemical Research</i> , 2010 , 43, 58-67	24.3	1967
117	Rod packings and metal-organic frameworks constructed from rod-shaped secondary building units. <i>Journal of the American Chemical Society</i> , 2005 , 127, 1504-18	16.4	1963
116	Deconstructing the crystal structures of metal-organic frameworks and related materials into their underlying nets. <i>Chemical Reviews</i> , 2012 , 112, 675-702	68.1	1794
115	The Reticular Chemistry Structure Resource (RCSR) database of, and symbols for, crystal nets. <i>Accounts of Chemical Research</i> , 2008 , 41, 1782-9	24.3	1680
114	Designed synthesis of 3D covalent organic frameworks. <i>Science</i> , 2007 , 316, 268-72	33.3	1675

113	Large-pore apertures in a series of metal-organic frameworks. <i>Science</i> , 2012 , 336, 1018-23	33.3	1425
112	Colossal cages in zeolitic imidazolate frameworks as selective carbon dioxide reservoirs. <i>Nature</i> , 2008 , 453, 207-11	50.4	1302
111	Control of pore size and functionality in isorecticular zeolitic imidazolate frameworks and their carbon dioxide selective capture properties. <i>Journal of the American Chemical Society</i> , 2009 , 131, 3875-7	16.4	1146
110	A crystalline imine-linked 3-D porous covalent organic framework. <i>Journal of the American Chemical Society</i> , 2009 , 131, 4570-1	16.4	1005
109	Topological analysis of metal-organic frameworks with polytopic linkers and/or multiple building units and the minimal transitivity principle. <i>Chemical Reviews</i> , 2014 , 114, 1343-70	68.1	894
108	Zeolite A imidazolate frameworks. <i>Nature Materials</i> , 2007 , 6, 501-6	27	809
107	Reticular chemistry of metal-organic polyhedra. <i>Angewandte Chemie - International Edition</i> , 2008 , 47, 5136-47	16.4	760
106	Assembly of metal-organic frameworks from large organic and inorganic secondary building units: new examples and simplifying principles for complex structures. <i>Journal of the American Chemical Society</i> , 2001 , 123, 8239-47	16.4	734
105	Structures of Metal-Organic Frameworks with Rod Secondary Building Units. <i>Chemical Reviews</i> , 2016 , 116, 12466-12535	68.1	570
104	Control of vertex geometry, structure dimensionality, functionality, and pore metrics in the reticular synthesis of crystalline metal-organic frameworks and polyhedra. <i>Journal of the American Chemical Society</i> , 2008 , 130, 11650-61	16.4	467
103	Polyoxometalate-based metal organic frameworks (POMOFs): structural trends, energetics, and high electrocatalytic efficiency for hydrogen evolution reaction. <i>Journal of the American Chemical Society</i> , 2011 , 133, 13363-74	16.4	433
102	Multifunctional metal-organic frameworks constructed from meta-benzenedicarboxylate units. <i>Chemical Society Reviews</i> , 2014 , 43, 5618-56	58.5	431
101	Coordination polymers, metal-organic frameworks and the need for terminology guidelines. <i>CrystEngComm</i> , 2012 , 14, 3001	3.3	392
100	Three-periodic nets and tilings: regular and quasiregular nets. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2003 , 59, 22-7		385
99	Design of MOFs and intellectual content in reticular chemistry: a personal view. <i>Chemical Society Reviews</i> , 2009 , 38, 1215-7	58.5	356
98	UTSA-74: A MOF-74 Isomer with Two Accessible Binding Sites per Metal Center for Highly Selective Gas Separation. <i>Journal of the American Chemical Society</i> , 2016 , 138, 5678-84	16.4	351
97	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. <i>Journal of the American Chemical Society</i> , 2002 , 124, 376-7	16.4	345
96	Geometric requirements and examples of important structures in the assembly of square building blocks. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2002 , 99, 4900-4	11.5	327

95	A metal-organic framework with optimized open metal sites and pore spaces for high methane storage at room temperature. <i>Angewandte Chemie - International Edition</i> , 2011 , 50, 3178-81	16.4	321
94	A robust near infrared luminescent ytterbium metal-organic framework for sensing of small molecules. <i>Chemical Communications</i> , 2011 , 47, 5551-3	5.8	321
93	Isorecticular expansion of metal-organic frameworks with triangular and square building units and the lowest calculated density for porous crystals. <i>Inorganic Chemistry</i> , 2011 , 50, 9147-52	5.1	263
92	Infinite secondary building units and forbidden catenation in metal-organic frameworks. <i>Angewandte Chemie - International Edition</i> , 2002 , 41, 284-7	16.4	263
91	A mesoporous germanium oxide with crystalline pore walls and its chiral derivative. <i>Nature</i> , 2005 , 437, 716-9	50.4	262
90	Second-order nonlinear optical activity induced by ordered dipolar chromophores confined in the pores of an anionic metal-organic framework. <i>Angewandte Chemie - International Edition</i> , 2012 , 51, 10542-5	16.4	255
89	Porous metalloporphyrinic frameworks constructed from metal 5,10,15,20-tetrakis(3,5-biscarboxylphenyl)porphyrin for highly efficient and selective catalytic oxidation of alkylbenzenes. <i>Journal of the American Chemical Society</i> , 2012 , 134, 10638-45	16.4	244
88	Identification of and symmetry computation for crystal nets. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2003 , 59, 351-60		240
87	Advances in the chemistry of metal-organic frameworks. <i>CrystEngComm</i> , 2002 , 4, 401-404	3.3	239
86	Taxonomy of periodic nets and the design of materials. <i>Physical Chemistry Chemical Physics</i> , 2007 , 9, 1035-43	5.43	227
85	Bottom-up construction of a superstructure in a porous uranium-organic crystal. <i>Science</i> , 2017 , 356, 624-627	5.27	223
84	Icosahedral packing of B12 icosahedra in boron suboxide (B ₆ O). <i>Nature</i> , 1998 , 391, 376-378	50.4	212
83	Three-periodic nets and tilings: semiregular nets. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2003 , 59, 515-25		199
82	Three-periodic nets and tilings: edge-transitive binodal structures. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2006 , 62, 350-5		190
81	Design of frameworks with mixed triangular and octahedral building blocks exemplified by the structure of [Zn ₄ O(TCA) ₂] having the pyrite topology. <i>Angewandte Chemie - International Edition</i> , 2003 , 42, 3907-9	16.4	187
80	A metal-organic framework with a hierarchical system of pores and tetrahedral building blocks. <i>Angewandte Chemie - International Edition</i> , 2006 , 45, 2528-33	16.4	185
79	Porous, conductive metal-triazolates and their structural elucidation by the charge-flipping method. <i>Chemistry - A European Journal</i> , 2012 , 18, 10595-601	4.8	172
78	Three-periodic nets and tilings: natural tilings for nets. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2007 , 63, 418-25		153

77	Retikuläre Chemie metall-organischer Polyeder. <i>Angewandte Chemie</i> , 2008 , 120, 5214-5225	3.6	148
76	A flexible germanate structure containing 24-ring channels and with very low framework density. <i>Journal of the American Chemical Society</i> , 2001 , 123, 12706-7	16.4	144
75	A rod-packing microporous hydrogen-bonded organic framework for highly selective separation of C ₂ H ₂ /CO ₂ at room temperature. <i>Angewandte Chemie - International Edition</i> , 2015 , 54, 574-7	16.4	137
74	A short history of an elusive yet ubiquitous structure in chemistry, materials, and mathematics. <i>Angewandte Chemie - International Edition</i> , 2008 , 47, 7996-8000	16.4	129
73	High separation capacity and selectivity of C ₂ hydrocarbons over methane within a microporous metal-organic framework at room temperature. <i>Chemistry - A European Journal</i> , 2012 , 18, 1901-4	4.8	127
72	A microporous lanthanide-tricarboxylate framework with the potential for purification of natural gas. <i>Chemical Communications</i> , 2012 , 48, 10856-8	5.8	120
71	Reversible interpenetration in a metal-organic framework triggered by ligand removal and addition. <i>Angewandte Chemie - International Edition</i> , 2012 , 51, 8791-5	16.4	113
70	Tertiary building units: synthesis, structure, and porosity of a metal-organic dendrimer framework (MODF-1). <i>Journal of the American Chemical Society</i> , 2001 , 123, 11482-3	16.4	109
69	Unprecedented Topological Complexity in a Metal-Organic Framework Constructed from Simple Building Units. <i>Journal of the American Chemical Society</i> , 2016 , 138, 1970-6	16.4	105
68	The geometry of periodic knots, polycatenanes and weaving from a chemical perspective: a library for reticular chemistry. <i>Chemical Society Reviews</i> , 2018 , 47, 4642-4664	58.5	94
67	The CdSO ₄ , rutile, cooperite and quartz dual nets: interpenetration and catenation. <i>Solid State Sciences</i> , 2003 , 5, 73-78	3.4	93
66	A Rod-Packing Microporous Hydrogen-Bonded Organic Framework for Highly Selective Separation of C ₂ H ₂ /CO ₂ at Room Temperature. <i>Angewandte Chemie</i> , 2015 , 127, 584-587	3.6	92
65	Enriching the Reticular Chemistry Repertoire: Merged Nets Approach for the Rational Design of Intricate Mixed-Linker Metal-Organic Framework Platforms. <i>Journal of the American Chemical Society</i> , 2018 , 140, 8858-8867	16.4	91
64	Three-periodic nets and tilings: minimal nets. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2004 , 60, 517-20		91
63	A highly stable MOF with a rod SBU and a tetracarboxylate linker: unusual topology and CO ₂ adsorption behaviour under ambient conditions. <i>Chemical Communications</i> , 2014 , 50, 4047-9	5.8	90
62	Applying the Power of Reticular Chemistry to Finding the Missing alb-MOF Platform Based on the (6,12)-Coordinated Edge-Transitive Net. <i>Journal of the American Chemical Society</i> , 2017 , 139, 3265-3274	16.4	84
61	Mesoporous Cages in Chemically Robust MOFs Created by a Large Number of Vertices with Reduced Connectivity. <i>Journal of the American Chemical Society</i> , 2019 , 141, 488-496	16.4	75
60	Reticular Chemistry 3.2: Typical Minimal Edge-Transitive and Nets for the Design and Synthesis of Metal-Organic Frameworks. <i>Chemical Reviews</i> , 2020 , 120, 8039-8065	68.1	75

- 59 Integrating the Pillared-Layer Strategy and Pore-Space Partition Method to Construct Multicomponent MOFs for CH₄/CO Separation. *Journal of the American Chemical Society*, **2020**, 142, 9258-9266 16.4 64
- 58 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
- 57 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
- 56 Metastable interwoven mesoporous metal-organic frameworks. *Inorganic Chemistry*, **2013**, 52, 11580-4 5.1 59
- 55 Programmable Topology in New Families of Heterobimetallic Metal-Organic Frameworks. *Journal of the American Chemical Society*, **2018**, 140, 6194-6198 16.4 58
- 54 A microporous metal-organic framework of a rare topology for high CH₄ storage at room temperature. *Chemical Communications*, **2013**, 49, 2043-5 5.8 58
- 53 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
- 52 Infinite Secondary Building Units and Forbidden Catenation in Metal-Organic Frameworks. *Angewandte Chemie*, **2002**, 114, 294-297 3.6 52
- 51 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
- 50 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
- 49 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
- 48 Layered Structures Constructed from New Linkages of Ge₇(O,OH,F)₁₉ Clusters. *Chemistry of Materials*, **2003**, 15, 714-718 9.6 46
- 47 Isohedral simple tilings: binodal and by tiles with . *Acta Crystallographica Section A: Foundations and Advances*, **2005**, 61, 358-62 38
- 46 New ice outdoes related nets in smallest-ring size. *Nature*, **1998**, 392, 879-879 50.4 37
- 45 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
- 44 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
- 43 A mesoporous lanthanide-organic framework constructed from a dendritic hexacarboxylate with cages of 2.4 nm. *CrystEngComm*, **2013**, 15, 9328 3.3 33
- 42 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

41	Three-periodic nets and tilings: regular and related infinite polyhedra. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2008 , 64, 425-9		30
40	Synthesis and characterization of zirconogermanates. <i>Inorganic Chemistry</i> , 2003 , 42, 5954-9	5.1	30
39	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. <i>Journal of the American Chemical Society</i> , 2019 , 141, 20480-20489	16.4	28
38	A Metal-Organic Framework with a Hierarchical System of Pores and Tetrahedral Building Blocks. <i>Angewandte Chemie</i> , 2006 , 118, 2590-2595	3.6	27
37	Minimal edge-transitive nets for the design and construction of metal-organic frameworks. <i>Faraday Discussions</i> , 2017 , 201, 127-143	3.6	26
36	Reversible Interpenetration in a Metal-Organic Framework Triggered by Ligand Removal and Addition. <i>Angewandte Chemie</i> , 2012 , 124, 8921-8925	3.6	25
35	ROD-8, a rod MOF with a pyrene-cored tetracarboxylate linker: framework disorder, derived nets and selective gas adsorption. <i>CrystEngComm</i> , 2014 , 16, 6291-6295	3.3	24
34	Structures of Carbon Nanocrystals. <i>Chemistry of Materials</i> , 2004 , 16, 4905-4911	9.6	24
33	Edge-transitive lattice nets. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2009 , 65, 360-3		23
32	Network topology approach to new allotropes of the group 14 elements. <i>Zeitschrift Fur Kristallographie - Crystalline Materials</i> , 2013 , 228, 343-346	1	19
31	Aspects of crystal structure prediction: some successes and some difficulties. <i>Physical Chemistry Chemical Physics</i> , 2010 , 12, 8580-3	3.6	18
30	Nets with collisions (unstable nets) and crystal chemistry. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2013 , 69, 535-42		16
29	Simple tilings by polyhedra with five- and six-sided faces. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2010 , 66, 637-9		15
28	One-step synthesis and structure of an oligo(spiro-orthocarbonate). <i>Journal of the American Chemical Society</i> , 2002 , 124, 4942-3	16.4	15
27	Dense quasicrystalline tilings by squares and equilateral triangles. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2010 , 66, 5-9		14
26	[Cd ₁₆ In ₆₄ S ₁₃₄] ₄₄ ⊂ Γ -Tetrahedron with a Large Cavity. <i>Angewandte Chemie</i> , 2003 , 115, 1863-1865	3.6	12
25	Madelung Constants for the C ₃ and C ₉ Structures. <i>Journal of Chemical Physics</i> , 1963 , 38, 3035-3035	3.9	11
24	Isogonal weavings on the sphere: knots, links, polycatenanes. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2020 , 76, 611-621	1.7	11

23	Edge-2-transitive trinodal polyhedra and 2-periodic tilings. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2017 , 73, 227-230	1.7	10
22	A metal-organic framework with rod secondary building unit based on the Boerdijk-Coxeter helix. <i>Chemical Communications</i> , 2016 , 52, 11543-11546	5.8	10
21	On a simple tiling of Deza and Shtogrin. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2006 , 62, 228-9		10
20	Some equivalent two-dimensional weavings at the molecular scale in 2D and 3D metal-organic frameworks. <i>CrystEngComm</i> , 2016 , 18, 7607-7613	3.3	9
19	Minimal nets and minimal minimal surfaces. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2013 , 69, 483-489		9
18	Flipping marvelous: new zeolites by new methods. <i>Angewandte Chemie - International Edition</i> , 2009 , 48, 8182-4	16.4	9
17	Pentagonal helices in a periodic metal-organic framework. Crystals as computers for discovering structures of minimal transitivity. <i>Chemical Communications</i> , 2015 , 51, 12228-30	5.8	8
16	Netze und Gyroide: wenig bekannt und doch in Chemie, Materialwissenschaften und Mathematik allgegenwärtig. <i>Angewandte Chemie</i> , 2008 , 120, 8116-8121	3.6	8
15	Crystallographic descriptions of regular 2-periodic weavings of threads, loops and nets. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2020 , 76, 110-120	1.7	7
14	Regular Figures, Minimal Transitivity, and Reticular Chemistry. <i>Israel Journal of Chemistry</i> , 2018 , 58, 962-970		6
13	Evolution of 14-Connected Zr Secondary Building Units through Postsynthetic Linker Incorporation. <i>ACS Applied Materials & Interfaces</i> , 2021 ,	9.5	5
12	Formation of a new archetypal Metal-Organic Framework from a simple monatomic liquid. <i>Journal of Chemical Physics</i> , 2014 , 141, 234503	3.9	4
11	Titelbild: [Cd ₁₆ In ₆₄ S ₁₃₄] ₄₄ β ₃₁ -Tetrahedron with a Large Cavity (Angew. Chem. 16/2003). <i>Angewandte Chemie</i> , 2003 , 115, 1817-1817	3.6	4
10	Isogonal piecewise linear embeddings of 1-periodic weaves and some related structures. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2021 , 77, 130-137	1.7	4
9	Rigid, flexible and impossible zeolite and related structures. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2014 , 372, 20120034	3	3
8	2-Periodic self-dual tilings. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2017 , 73, 14-18	1.7	2
7	Cover Picture: [Cd ₁₆ In ₆₄ S ₁₃₄] ₄₄ β ₃₁ -Tetrahedron with a Large Cavity (Angew. Chem. Int. Ed. 16/2003). <i>Angewandte Chemie - International Edition</i> , 2003 , 42, 1775-1775	16.4	2
6	On Borromean links and related structures. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2021 , 77, 379-391	1.7	2

- 5 Isogonal non-crystallographic periodic graphs based on knotted sodalite cages. *Acta Crystallographica Section A: Foundations and Advances*, **2020**, 76, 735-738 1.7 1
- 4 Reticular Chemistry: Occurrence and Taxonomy of Nets and Grammar for the Design of Frameworks. *ChemInform*, **2005**, 36, no 1
- 3 Optimal circular packing. *Nature*, **1991**, 352, 27-27 50.4 1
- 2 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
- 1 Mit neuen Methoden zu neuen Zeolithen. *Angewandte Chemie*, **2009**, 121, 8328-8330 3.6