Michael D Guiver

List of Publications by Citations

268 papers	19,927 citations	77 h-index	132 g-index
275 ext. papers	22,451 ext. citations	9.8 avg, IF	7.01 L-index

#	Paper	IF	Citations
268	Synthesis and characterization of sulfonated poly(ether ether ketone) for proton exchange membranes. *Journal of Membrane Science*, **2004**, 229, 95-106	9.6	771
267	Proton conducting composite membranes from polyether ether ketone and heteropolyacids for fuel cell applications. *Journal of Membrane Science*, **2000**, 173, 17-34	9.6	737
266	Polymer nanosieve membranes for CO2-capture applications. *Nature Materials*, **2011**, 10, 372-5	27	647
265	Sulfonated hydrocarbon membranes for medium-temperature and low-humidity proton exchange membrane fuel cells (PEMFCs). *Progress in Polymer Science*, **2011**, 36, 1443-1498	29.6	530
264	Hydrocarbon-Based Polymer Electrolyte Membranes: Importance of Morphology on Ion Transport and Membrane Stability. *Chemical Reviews*, **2017**, 117, 4759-4805	68.1	525
263	Advances in high permeability polymer-based membrane materials for CO2 separations. *Energy and Environmental Science*, **2016**, 9, 1863-1890	35.4	475
262	Polysulfone/silica nanoparticle mixed-matrix membranes for gas separation. *Journal of Membrane Science*, **2008**, 314, 123-133	9.6	474
261	Advances in high permeability polymeric membrane materials for CO2 separations. *Energy and Environmental Science*, **2012**, 5, 7306-7322	35.4	391
260	Ion Transport by Nanochannels in Ion-Containing Aromatic Copolymers. *Macromolecules*, **2014**, 47, 2175-2198	5.5	332
259	Aromatic Poly(ether ketone)s with Pendant Sulfonic Acid Phenyl Groups Prepared by a Mild Sulfonation Method for Proton Exchange Membranes *Macromolecules*, **2007**, 40, 1934-1944	5.5	322
258	Proton conducting membranes based on cross-linked sulfonated poly(ether ether ketone) (SPEEK). *Journal of Membrane Science*, **2004**, 233, 93-99	9.6	304
257	Nanocrack-regulated self-humidifying membranes. *Nature*, **2016**, 532, 480-3	50.4	281
256	Sulfonated Poly(aryl ether ketone)s Containing the Hexafluoroisopropylidene Diphenyl Moiety Prepared by Direct Copolymerization, as Proton Exchange Membranes for Fuel Cell Application *Macromolecules*, **2004**, 37, 7960-7967	5.5	274
255	Nanostructured Ion-Exchange Membranes for Fuel Cells: Recent Advances and Perspectives. *Advanced Materials*, **2015**, 27, 5280-95	24	273
254	Polymers of Intrinsic Microporosity Containing Trifluoromethyl and Phenylsulfone Groups as Materials for Membrane Gas Separation. *Macromolecules*, **2008**, 41, 9656-9662	5.5	244
253	Gas transport behavior of mixed-matrix membranes composed of silica nanoparticles in a polymer of intrinsic microporosity (PIM-1). *Journal of Membrane Science*, **2010**, 346, 280-287	9.6	223
252	Pure- and mixed-gas permeation properties of a microporous spirobisindane-based ladder polymer (PIM-1). *Journal of Membrane Science*, **2009**, 333, 125-131	9.6	214

251	High-Performance Carboxylated Polymers of Intrinsic Microporosity (PIMs) with Tunable Gas Transport Properties *Macromolecules*, **2009**, 42, 6038-6043	5.5	209
250	Casting solvent interactions with sulfonated poly(ether ether ketone) during proton exchange membrane fabrication. *Journal of Membrane Science*, **2003**, 219, 113-121	9.6	206
249	Properties of SPEEK based PEMs for fuel cell application. *Catalysis Today*, **2003**, 82, 213-222	5.3	206
248	Toward Improved Conductivity of Sulfonated Aromatic Proton Exchange Membranes at Low Relative Humidity. *Chemistry of Materials*, **2008**, 20, 5636-5642	9.6	198
247	Materials science. Polymer rigidity improves microporous membranes. *Science*, **2013**, 339, 284-5	33.3	188
246	Fluorene-Based Poly(arylene ether sulfone)s Containing Clustered Flexible Pendant Sulfonic Acids as Proton Exchange Membranes. *Macromolecules*, **2011**, 44, 7296-7306	5.5	187
245	Intrinsically Microporous Soluble Polyimides Incorporating Tröger's Base for Membrane Gas Separation. *Macromolecules*, **2014**, 47, 3254-3262	5.5	185
244	Guanidinium-Functionalized Anion Exchange Polymer Electrolytes via Activated Fluorophenyl-Amine Reaction. *Chemistry of Materials*, **2011**, 23, 3795-3797	9.6	179
243	Highly Fluorinated Comb-Shaped Copolymers as Proton Exchange Membranes (PEMs): Improving PEM Properties Through Rational Design. *Advanced Functional Materials*, **2006**, 16, 1814-1822	15.6	157
242	A highly permeable graphene oxide membrane with fast and selective transport nanochannels for efficient carbon capture. *Energy and Environmental Science*, **2016**, 9, 3107-3112	35.4	155
241	Harnessing Filler Materials for Enhancing Biogas Separation Membranes. *Chemical Reviews*, **2018**, 118, 8655-8769	68.1	154
240	Phenyltrimethylammonium Functionalized Polysulfone Anion Exchange Membranes *Macromolecules*, **2012**, 45, 2411-2419	5.5	152
239	Designing the next generation of proton-exchange membrane fuel cells. *Nature*, **2021**, 595, 361-369	50.4	152
238	Static protein adsorption, ultrafiltration behavior and cleanability of hydrophilized polysulfone membranes. *Journal of Membrane Science*, **1999**, 158, 63-75	9.6	150
237	Highly Conductive Anion-Exchange Membranes from Microporous Tröger's Base Polymers. *Angewandte Chemie - International Edition*, **2016**, 55, 11499-502	16.4	146
236	Comb-Shaped Poly(arylene ether sulfone)s as Proton Exchange Membranes *Macromolecules*, **2008**, 41, 2126-2134	5.5	142
235	Enhancement of proton transport by nanochannels in comb-shaped copoly(arylene ether sulfone)s. *Angewandte Chemie - International Edition*, **2011**, 50, 9158-61	16.4	140
234	Proton exchange membranes modified with sulfonated silica nanoparticles for direct methanol fuel cells?. *Journal of Membrane Science*, **2007**, 296, 21-28	9.6	138

233	Copoly(arylene ether)s Containing Pendant Sulfonic Acid Groups as Proton Exchange Membranes NRCC Publication No. 50899.. *Macromolecules*, **2009**, 42, 957-963	5.5	136
232	Synthesis of Copoly(aryl ether ether nitrile)s Containing Sulfonic Acid Groups for PEM Application *Macromolecules*, **2005**, 38, 3237-3245	5.5	134
231	Tangential flow streaming potential measurements: Hydrodynamic cell characterization and zeta potentials of carboxylated polysulfone membranes. *Journal of Membrane Science*, **1998**, 145, 211-222	9.6	131
230	Polymers of Intrinsic Microporosity Derived from Novel Disulfone-Based Monomers *Macromolecules*, **2009**, 42, 6023-6030	5.5	127
229	A new class of highly-conducting polymer electrolyte membranes: Aromatic ABA triblock copolymers. *Energy and Environmental Science*, **2012**, 5, 5346-5355	35.4	121
228	Sulfonated poly(aryl ether ketone)s containing naphthalene moieties obtained by direct copolymerization as novel polymers for proton exchange membranes. *Journal of Polymer Science Part A*, **2004**, 42, 2866-2876	2.5	121
227	Azide-based cross-linking of polymers of intrinsic microporosity (PIMs) for condensable gas separation. *Macromolecular Rapid Communications*, **2011**, 32, 631-6	4.8	118
226	Highly stable anion exchange membranes based on quaternized polypropylene. *Journal of Materials Chemistry A*, **2015**, 3, 12284-12296	13	113
225	Metal-induced ordered microporous polymers for fabricating large-area gas separation membranes. *Nature Materials*, **2019**, 18, 163-168	27	113
224	Polymers of Intrinsic Microporosity with Dinaphthyl and Thianthrene Segments *Macromolecules*, **2010**, 43, 8580-8587	5.5	110
223	Influence of Intermolecular Interactions on the Observable Porosity in Intrinsically Microporous Polymers. *Macromolecules*, **2011**, 44, 1763-1767	5.5	109
222	Preparation of ion exchange membranes for fuel cell based on crosslinked poly(vinyl alcohol) with poly(styrene sulfonic acid-co-maleic acid). *Journal of Membrane Science*, **2006**, 281, 156-162	9.6	109
221	Structural characterization and gas-transport properties of brominated matrimid polyimide. *Journal of Polymer Science Part A*, **2002**, 40, 4193-4204	2.5	109
220	Decarboxylation-Induced Cross-Linking of Polymers of Intrinsic Microporosity (PIMs) for Membrane Gas Separation. *Macromolecules*, **2012**, 45, 5134-5139	5.5	108
219	Blend membranes based on sulfonated poly(ether ether ketone) and polysulfone bearing benzimidazole side groups for proton exchange membrane fuel cells. *Electrochemistry Communications*, **2006**, 8, 1386-1390	5.1	107
218	Synthesis and characterization of poly(aryl ether ketone) copolymers containing (hexafluoroisopropylidene)-diphenol moiety as proton exchange membrane materials. *Polymer*, **2005**, 46, 3257-3263	3.9	107
217	Towards high conductivity in anion-exchange membranes for alkaline fuel cells. *ChemSusChem*, **2013**, 6, 1376-83	8.3	105
216	High-strength, soluble polyimide membranes incorporating Tröger's Base for gas separation. *Journal of Membrane Science*, **2016**, 504, 55-65	9.6	103

215	Linear High Molecular Weight Ladder Polymer via Fast Polycondensation of 5,5?,6,6?-Tetrahydroxy-3,3,3?,3?-tetramethylspirobisindane with 1,4-Dicyanotetrafluorobenzene. *Macromolecular Rapid Communications*, **2008**, 29, 783-788	4.8	103
214	Synthesis of Poly(arylene ether ether ketone ketone) Copolymers Containing Pendant Sulfonic Acid Groups Bonded to Naphthalene as Proton Exchange Membrane Materials *Macromolecules*, **2004**, 37, 6748-6754	5.5	103
213	Stable Superhydrophobic Ceramic-Based Carbon Nanotube Composite Desalination Membranes. *Nano Letters*, **2018**, 18, 5514-5521	11.5	102
212	Sulfonation of poly(phthalazinones) with fuming sulfuric acid mixtures for proton exchange membrane materials. *Journal of Membrane Science*, **2003**, 227, 39-50	9.6	101
211	1,2,3-Triazolium-Based Poly(2,6-Dimethyl Phenylene Oxide) Copolymers as Anion Exchange Membranes. *ACS Applied Materials & Interfaces*, **2016**, 8, 4651-60	9.5	98
210	Polymer Electrolyte Membranes Derived from New Sulfone Monomers with Pendent Sulfonic Acid Groups *Macromolecules*, **2010**, 43, 9810-9820	5.5	97
209	Synthesis and characterization of sulfonated poly(phthalazinone ether ketone) for proton exchange membrane materials. *Journal of Polymer Science Part A*, **2003**, 41, 497-507	2.5	96
208	Graphene Oxide Membranes with Heterogeneous Nanodomains for Efficient CO Separations. *Angewandte Chemie - International Edition*, **2017**, 56, 14246-14251	16.4	95
207	Durable Sulfonated Poly(arylene sulfide sulfone nitrile)s Containing Naphthalene Units for Direct Methanol Fuel Cells (DMFCs). *Macromolecules*, **2013**, 46, 3452-3460	5.5	92
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203	Densely Sulfophenylated Segmented Copoly(arylene ether sulfone) Proton Exchange Membranes. *Macromolecules*, **2011**, 44, 4901-4910	5.5	89
202	Constructing efficient ion nanochannels in alkaline anion exchange membranes by the in situ assembly of a poly(ionic liquid) in metal rganic frameworks. *Journal of Materials Chemistry A*, **2016**, 4, 2340-2348	13	86
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200	Practical implementation of bis-six-membered N-cyclic quaternary ammonium cations in advanced anion exchange membranes for fuel cells: Synthesis and durability. *Journal of Membrane Science*, **2019**, 578, 239-250	9.6	86
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198	Linear High Molecular Weight Ladder Polymers by Optimized Polycondensation of Tetrahydroxytetramethylspirobisindane and 1,4-Dicyanotetrafluorobenzene *Macromolecules*, **2008**, 41, 7411-7417	5.5	85

197	Low-swelling proton-conducting copoly(aryl ether nitrile)s containing naphthalene structure with sulfonic acid groups meta to the ether linkage. *Polymer*, **2006**, 47, 808-816	3.9	85
196	Influence of silica content in sulfonated poly(arylene ether ether ketone ketone) (SPAEEKK) hybrid membranes on properties for fuel cell application. *Polymer*, **2006**, 47, 7871-7880	3.9	84
195	Sulfonated copoly(phthalazinone ether ketone nitrile)s as proton exchange membrane materials. *Journal of Membrane Science*, **2006**, 278, 26-34	9.6	84
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193	Morphological transformation during cross-linking of a highly sulfonated poly(phenylene sulfide nitrile) random copolymer. *Energy and Environmental Science*, **2012**, 5, 9795	35.4	80
192	Comparison of PEM Properties of Copoly(aryl ether ether nitrile)s Containing Sulfonic Acid Bonded to Naphthalene in Structurally Different Ways. *Macromolecules*, **2007**, 40, 1512-1520	5.5	80
191	Polymers of intrinsic microporosity (PIMs) substituted with methyl tetrazole. *Polymer*, **2012**, 53, 4367-4372	3.9	77
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186	Phase separation and water channel formation in sulfonated block copolyimide. *Journal of Physical Chemistry B*, **2010**, 114, 12036-45	3.4	71
185	Effects of Brominating Matrimid Polyimide on the Physical and Gas Transport Properties of Derived Carbon Membranes. *Macromolecules*, **2005**, 38, 10042-10049	5.5	70
184	Magnetic field alignment of stable proton-conducting channels in an electrolyte membrane. *Nature Communications*, **2019**, 10, 842	17.4	70
183	Poly(aryl ether ketone)s with carboxylic acid groups: synthesis, sulfonation and crosslinking. *Journal of Materials Chemistry*, **2008**, 18, 4675		69
182	Synthesis, cross-linking and carbonization of co-polyimides containing internal acetylene units for gas separation. *Journal of Membrane Science*, **2007**, 302, 254-264	9.6	69
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180	Hydrocarbon/hydrogen mixed-gas permeation properties of PIM-1, an amorphous microporous spirobisindane polymer. *Journal of Membrane Science*, **2009**, 338, 1-4	9.6	68

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177	Soluble, microporous, Tröger's Base copolyimides with tunable membrane performance for gas separation. *Chemical Communications*, **2016**, 52, 3817-20	5.8	66
176	Using silica nanoparticles for modifying sulfonated poly(phthalazinone ether ketone) membrane for direct methanol fuel cell: A significant improvement on cell performance. *Journal of Power Sources*, **2006**, 155, 111-117	8.9	66
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169	Effect of Isomerism on Molecular Packing and Gas Transport Properties of Poly(benzoxazole-co-imide)s. *Macromolecules*, **2014**, 47, 7947-7957	5.5	63
168	Naphthalene-based poly(arylene ether ketone) anion exchange membranes. *Journal of Materials Chemistry A*, **2013**, 1, 6481	13	63
167	Direct copolymerization of sulfonated poly(phthalazinone arylene ether)s for proton-exchange-membrane materials. *Journal of Polymer Science Part A*, **2003**, 41, 2731-2742	2.5	63
166	Proton-conducting membranes from poly(ether sulfone)s grafted with sulfoalkylamine. *Journal of Membrane Science*, **2013**, 427, 443-450	9.6	62
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164	Azide-assisted self-crosslinking of highly ion conductive anion exchange membranes. *Journal of Membrane Science*, **2016**, 509, 48-56	9.6	60
163	Effect of methanol treatment on gas sorption and transport behavior of intrinsically microporous polyimide membranes incorporating Tröger?s base. *Journal of Membrane Science*, **2015**, 480, 104-114	9.6	59
162	Structural determination of Torlon® 4000T polyamide–imide by NMR spectroscopy. *Polymer*, **2004**, 45, 1111-1117	3.9	58

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156	Fluorinated Poly(aryl ether) Containing a 4-Bromophenyl Pendant Group and its Phosphonated Derivative. *Macromolecular Rapid Communications*, **2006**, 27, 1411-1417	4.8	55
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153	Synthesis and characterization of sulfonated poly(phthalazinone ether sulfone ketone) for ultrafiltration and nanofiltration membranes. *Journal of Applied Polymer Science*, **2001**, 79, 1685-1692	2.9	50
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150	Increases in the proton conductivity and selectivity of proton exchange membranes for direct methanol fuel cells by formation of nanocomposites having proton conducting channels. *Journal of Power Sources*, **2009**, 194, 206-213	8.9	48
149	Exploring Torlon/P84 co-polyamide-imide blended hollow fibers and their chemical cross-linking modifications for pervaporation dehydration of isopropanol. *Separation and Purification Technology* , **2008**, 61, 404-413	8.3	48
148	Measurements of PEM conductivity by impedance spectroscopy. *Solid State Ionics*, **2008**, 179, 619-624	3.3	47
147	A Highly Permeable Aligned Montmorillonite Mixed-Matrix Membrane for CO2 Separation. *Angewandte Chemie - International Edition*, **2016**, 55, 9321-5	16.4	47
146	Simulation of membrane-based CO2 capture in a coal-fired power plant. *Journal of Membrane Science*, **2013**, 427, 451-459	9.6	45
145	Novel approaches to fabricate carbon molecular sieve membranes based on chemical modified and solvent treated polyimides. *Microporous and Mesoporous Materials*, **2004**, 73, 151-160	5.3	45
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140	A Novel Bisphenol Monomer with Grafting Capability and the Resulting Poly(arylene ether sulfone)s *Macromolecules*, **2006**, 39, 6990-6996	5.5	42
139	Preparation and Characterization of Polysulfones Containing Both Hexafluoroisopropylidene and Trimethylsilyl Groups as Gas Separation Membrane Materials *Macromolecules*, **2004**, 37, 1403-1410	5.5	42
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137	Carbon hollow fiber membranes for a molecular sieve with precise-cutoff ultramicropores for superior hydrogen separation. *Nature Communications*, **2021**, 12, 268	17.4	42
136	Highly fluorinated comb-shaped copolymer as proton exchange membranes (PEMs): Fuel cell performance. *Journal of Power Sources*, **2008**, 182, 100-105	8.9	41
135	Membrane-Based Olefin/Paraffin Separations. *Advanced Science*, **2020**, 7, 2001398	13.6	39
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131	Radiation-induced grafting of styrene onto ultra-high molecular weight polyethylene powder for polymer electrolyte fuel cell application: II. Sulfonation and characterization. *Journal of Membrane Science*, **2009**, 333, 59-67	9.6	37
130	Sulfonated naphthalenic polyimides containing ether and ketone linkages as polymer electrolyte membranes. *Journal of Membrane Science*, **2011**, 366, 73-81	9.6	37
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128	Copoly(arylene ether nitrile)s High-Performance Polymer Electrolytes for Direct Methanol Fuel Cells. *Journal of the Electrochemical Society*, **2008**, 155, B21	3.9	37
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124	Chiral separation membranes from modified polysulfone having myrtenal-derived terpenoid side groups. *European Polymer Journal*, **2006**, 42, 2532-2539	5.2	35
123	Proton exchange membranes based on sulfonated poly(phthalazinone ether ketone)s/aminated polymer blends. *Solid State Ionics*, **2005**, 176, 409-415	3.3	35
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121	Spinel-based ceramic membranes coupling solid sludge recycling with oily wastewater treatment. *Water Research*, **2020**, 169, 115180	12.5	35
120	Molecularly Imprinted Nanofiber Membranes from Carboxylated Polysulfone by Electrospray Deposition. *Macromolecular Rapid Communications*, **2007**, 28, 2100-2105	4.8	34
119	Vapor permeation of aqueous 2-propanol solutions through gelatin/Torlon® poly(amide imide) blended membranes. *Journal of Membrane Science*, **2004**, 243, 89-95	9.6	34
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117	Fabrication of mullite ceramic-supported carbon nanotube composite membranes with enhanced performance in direct separation of high-temperature emulsified oil droplets. *Journal of Membrane Science*, **2019**, 582, 140-150	9.6	33
116	Unobstructed Ultrathin Gas Transport Channels in Composite Membranes by Interfacial Self-Assembly. *Advanced Materials*, **2020**, 32, e1907701	24	33
115	Homopolymer-like sulfonated phenyl- and diphenyl-poly(arylene ether ketone)s for fuel cell applications. *Journal of Power Sources*, **2008**, 185, 899-903	8.9	33
114	Evaluation of the recognition ability of molecularly imprinted materials by surface plasmon resonance (SPR) spectroscopy. *Analytica Chimica Acta*, **2003**, 489, 191-198	6.6	33
113	Highly Conductive Anion-Exchange Membranes from Microporous Tröger's Base Polymers. *Angewandte Chemie*, **2016**, 128, 11671-11674	3.6	31
112	Oriented proton-conductive nano-sponge-facilitated polymer electrolyte membranes. *Energy and Environmental Science*, **2020**, 13, 297-309	35.4	30
111	Flexible Superhydrophobic Metal-Based Carbon Nanotube Membrane for Electrochemically Enhanced Water Treatment. *Environmental Science & Technology*, **2020**, 54, 9074-9082	10.3	29
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