Peter Budd

List of Publications by Year
in descending order

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132 papers	14,525 citations	28190 55 h-index	18606 119 g-index
137 all docs	137 docs citations	137 times ranked	8485 citing authors

#	ARTICLE	IF	CITATIONS
1	Polymers of intrinsic microporosity (PIMs): organic materials for membrane separations, heterogeneous catalysis and hydrogen storage. Chemical Society Reviews, 2006, 35, 675.	18.7	1,545
2	Polymers of intrinsic microporosity (PIMs): robust, solution-processable, organic nanoporous materials. Chemical Communications, 2004, , 230.	2.2	1,084
3	Gas separation membranes from polymers of intrinsic microporosity. Journal of Membrane Science, 2005, 251, 263-269.	4.1	730
4	Exploitation of Intrinsic Microporosity in Polymer-Based Materials. Macromolecules, 2010, 43, 5163-5176.	2.2	725
5	Gas permeation parameters and other physicochemical properties of a polymer of intrinsic microporosity: Polybenzodioxane PIM-1. Journal of Membrane Science, 2008, 325, 851-860.	4.1	470
6	Polymers of Intrinsic Microporosity (PIMs): Bridging the Void between Microporous and Polymeric Materials. Chemistry - A European Journal, 2005, 11, 2610-2620.	1.7	461
7	Towards Polymer-Based Hydrogen Storage Materials: Engineering Ultramicroporous Cavities within Polymers of Intrinsic Microporosity. Angewandte Chemie - International Edition, 2006, 45, 1804-1807.	7.2	421
8	Gas Permeation Properties, Physical Aging, and Its Mitigation in High Free Volume Glassy Polymers. Chemical Reviews, 2018, 118, 5871-5911.	23.0	414
9	Free volume and intrinsic microporosity in polymers. Journal of Materials Chemistry, 2005, 15, 1977.	6.7	364
10	Gas permeation parameters of mixed matrix membranes based on the polymer of intrinsic microporosity PIM-1 and the zeolitic imidazolate framework ZIF-8. Journal of Membrane Science, 2013, 427, 48-62.	4.1	312
11	Highly permeable polymers for gas separation membranes. Polymer Chemistry, 2010, 1, 63.	1.9	308
12	Highâ€Performance Membranes from Polyimides with Intrinsic Microporosity. Advanced Materials, 2008, 20, 2766-2771.	11.1	307
13	A triptycene-based polymer of intrinsic microposity that displays enhanced surface area and hydrogen adsorption. Chemical Communications, 2007, , 67-69.	2.2	282
14	Triptycene-Based Polymers of Intrinsic Microporosity: Organic Materials That Can Be Tailored for Gas Adsorption. Macromolecules, 2010, 43, 5287-5294.	2.2	275
15	Nanoporous Organic Polymer/Cage Composite Membranes. Angewandte Chemie - International Edition, 2013, 52, 1253-1256.	7.2	263
16	Synthesis, Characterization, and Gas Permeation Properties of a Novel Group of Polymers with Intrinsic Microporosity: PIM-Polyimides. Macromolecules, 2009, 42, 7881-7888.	2.2	250
17	Catalysis by microporous phthalocyanine and porphyrin network polymers. Journal of Materials Chemistry, 2008, 18, 573-578.	6.7	246
18	Polymer of Intrinsic Microporosity Incorporating Thioamide Functionality: Preparation and Gas Transport Properties. Macromolecules, 2011, 44, 6471-6479.	2.2	233

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19	Sustainable wastewater treatment and recycling in membrane manufacturing. Green Chemistry, 2015, 17, 5196-5205.	4.6	229
20	Atomistic packing model and free volume distribution of a polymer with intrinsic microporosity (PIM-1). Journal of Membrane Science, 2008, 318, 84-99.	4.1	227
21	Enhancement of CO₂ Affinity in a Polymer of Intrinsic Microporosity by Amine Modification. Macromolecules, 2014, 47, 1021-1029.	2.2	204
22	The potential of organic polymer-based hydrogen storage materials. Physical Chemistry Chemical Physics, 2007, 9, 1802.	1.3	197
23	Microporous Polymers as Potential Hydrogen Storage Materials. Macromolecular Rapid Communications, 2007, 28, 995-1002.	2.0	176
24	Mechanically robust thermally rearranged (TR) polymer membranes with spirobisindane for gas separation. Journal of Membrane Science, 2013, 434, 137-147.	4.1	171
25	Characterization ofAnacardiumoccidentale exudate polysaccharide. Polymer International, 1998, 45, 27-35.	1.6	154
26	Polymers of Intrinsic Microporosity Derived from Bis(phenazyl) Monomers. Macromolecules, 2008, 41, 1640-1646.	2.2	150
27	Mixed matrix membranes based on UiO-66 MOFs in the polymer of intrinsic microporosity PIM-1. Separation and Purification Technology, 2017, 173, 304-313.	3.9	148
28	A nanoporous network polymer derived from hexaazatrinaphthylene with potential as an adsorbent and catalyst support. Journal of Materials Chemistry, 2003, 13, 2721-2726.	6.7	128
29	PIM-1 mixed matrix membranes for gas separations using cost-effective hypercrosslinked nanoparticle fillers. Chemical Communications, 2016, 52, 5581-5584.	2.2	121
30	Thermally Rearrangeable PIM-Polyimides for Gas Separation Membranes. Macromolecules, 2014, 47, 5595-5606.	2.2	118
31	Solvent nanofiltration through high permeability glassy polymers: Effect of polymer and solute nature. Journal of Membrane Science, 2012, 423-424, 65-72.	4.1	116
32	Control of mesostructured silica particle morphology. Journal of Materials Chemistry, 2001, 11, 951-957.	6.7	106
33	Adsorption Studies of a Microporous Phthalocyanine Network Polymer. Langmuir, 2006, 22, 4225-4229.	1.6	103
34	Free Volume Investigation of Polymers of Intrinsic Microporosity (PIMs): PIM-1 and PIM1 Copolymers Incorporating Ethanoanthracene Units. Macromolecules, 2010, 43, 6075-6084.	2.2	100
35	Base-catalysed hydrolysis of PIM-1: amide versus carboxylate formation. RSC Advances, 2014, 4, 52189-52198.	1.7	91
36	The synthesis, chain-packing simulation and long-term gas permeability of highly selective spirobifluorene-based polymers of intrinsic microporosity. Journal of Materials Chemistry A, 2018, 6, 10507-10514.	5.2	91

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37	Graphene oxideâ€“polybenzimidazolium nanocomposite anion exchange membranes for electrodialysis. Journal of Materials Chemistry A, 2018, 6, 24728-24739.	5.2	87
38	Selective dye adsorption by chemically-modified and thermally-treated polymers of intrinsic microporosity. Journal of Colloid and Interface Science, 2017, 492, 81-91.	5.0	85
39	Boosting gas separation performance and suppressing the physical aging of polymers of intrinsic microporosity (PIM-1) by nanomaterial blending. Nanoscale, 2020, 12, 23333-23370.	2.8	81
40	Polymers of Intrinsic Microporosity (PIMs): High Free Volume Polymers for Membrane Applications. Macromolecular Symposia, 2006, 245-246, 403-405.	0.4	80
41	High-flux PIM-1/PVDF thin film composite membranes for 1-butanol/water pervaporation. Journal of Membrane Science, 2017, 529, 207-214.	4.1	79
42	Review of nanomaterials-assisted ion exchange membranes for electromembrane desalination. Npj Clean Water, 2018, 1, .	3.1	79
43	Structural Characterization of a Polymer of Intrinsic Microporosity: X-ray Scattering with Interpretation Enhanced by Molecular Dynamics Simulations. Macromolecules, 2011, 44, 14-16.	2.2	76
44	Physical aging of polymers of intrinsic microporosity: a SAXS/WAXS study. Journal of Materials Chemistry A, 2014, 2, 11742-11752.	5.2	71
45	Ultrahigh-permeance PIM-1 based thin film nanocomposite membranes on PAN supports for CO2 separation. Journal of Membrane Science, 2018, 564, 878-886.	4.1	69
46	First Clear-Cut Experimental Evidence of a Glass Transition in a Polymer with Intrinsic Microporosity: PIM-1. Journal of Physical Chemistry Letters, 2018, 9, 2003-2008.	2.1	67
47	New organophilic mixed matrix membranes derived from a polymer of intrinsic microporosity and silicalite-1. Polymer, 2013, 54, 2222-2230.	1.8	66
48	Hydroxyalkylaminoalkylamide PIMs: Selective Adsorption by Ethanolamine- and Diethanolamine-Modified PIM-1. Macromolecules, 2015, 48, 5663-5669.	2.2	65
49	Impeded physical aging in PIM-1 membranes containing graphene-like fillers. Journal of Membrane Science, 2018, 563, 513-520.	4.1	65
50	The origin of size-selective gas transport through polymers of intrinsic microporosity. Journal of Materials Chemistry A, 2019, 7, 20121-20126.	5.2	63
51	Understanding the Topology of the Polymer of Intrinsic Microporosity PIM-1: Cyclics, Tadpoles, and Network Structures and Their Impact on Membrane Performance. Macromolecules, 2020, 53, 569-583.	2.2	59
52	Study of glassy polymers fractional accessible volume (FAV) by extended method of hydrostatic weighing: Effect of porous structure on liquid transport. Reactive and Functional Polymers, 2015, 86, 269-281.	2.0	58
53	Temperature Dependence of Gas Permeation and Diffusion in Triptycene-Based Ultrapermeable Polymers of Intrinsic Microporosity. ACS Applied Materials & Interfaces, 2018, 10, 36475-36482.	4.0	58
54	Enhanced organophilic separations with mixed matrix membranes of polymers of intrinsic microporosity and graphene-like fillers. Journal of Membrane Science, 2017, 526, 437-449.	4.1	57

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55	Polymerization and carbonization of high internal phase emulsions. Polymer International, 2005, 54, 297-303.	1.6	56
56	Synergistic enhancement of gas selectivity in thin film composite membranes of PIM-1. Journal of Materials Chemistry A, 2019, 7, 6417-6430.	5.2	55
57	PIM-1/graphene composite: A combined experimental and molecular simulation study. Microporous and Mesoporous Materials, 2015, 209, 126-134.	2.2	53
58	Mixed matrix membranes based on MIL-101 metalâ€“organic frameworks in polymer of intrinsic microporosity PIM-1. Separation and Purification Technology, 2019, 212, 545-554.	3.9	53
59	Systematic hydrolysis of PIM-1 and electrospinning of hydrolyzed PIM-1 ultrafine fibers for an efficient removal of dye from water. Reactive and Functional Polymers, 2017, 121, 67-75.	2.0	52
60	2D boron nitride nanosheets in PIM-1 membranes for CO2/CH4 separation. Journal of Membrane Science, 2021, 636, 119527.	4.1	52
61	Electrospun Adsorptive Nanofibrous Membranes from Ion Exchange Polymers to Snare Textile Dyes from Wastewater. Advanced Materials Technologies, 2021, 6, 2000955.	3.0	52
62	The influence of few-layer graphene on the gas permeability of the high-free-volume polymer PIM-1. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2016, 374, 20150031.	1.6	51
63	Gas separation performance of MMMs containing (PIM-1)-functionalized GO derivatives. Journal of Membrane Science, 2021, 623, 118902.	4.1	48
64	Mitigation of Physical Aging with Mixed Matrix Membranes Based on Cross-Linked PIM-1 Fillers and PIM-1. ACS Applied Materials & Interfaces, 2020, 12, 46756-46766.	4.0	47
65	Temperature and pressure dependence of gas permeation in amine-modified PIM-1. Journal of Membrane Science, 2018, 555, 483-496.	4.1	45
66	Bridging the interfacial gap in mixed-matrix membranes by nature-inspired design: precise molecular sieving with polymer-grafted metalâ€“organic frameworks. Journal of Materials Chemistry A, 2021, 9, 23793-23801.	5.2	41
67	Comparison of pure and mixed gas permeation of the highly fluorinated polymer of intrinsic microporosity PIM-2 under dry and humid conditions: Experiment and modelling. Journal of Membrane Science, 2020, 594, 117460.	4.1	39
68	Polymerized high internal phase emulsion monoliths for the chromatographic separation of engineered nanoparticles. Journal of Applied Polymer Science, 2015, 132, .	1.3	38
69	Study on the formation of thin film nanocomposite (TFN) membranes of polymers of intrinsic microporosity and graphene-like fillers: Effect of lateral flake size and chemical functionalization. Journal of Membrane Science, 2018, 565, 390-401.	4.1	38
70	Highly monodisperse, lanthanideâ€containing polystyrene nanoparticles as potential standard reference materials for environmental â€œnanoâ€•fate analysis. Journal of Applied Polymer Science, 2015, 132, .	1.3	37
71	Molecular Mobility of the High Performance Membrane Polymer PIM-1 as Investigated by Dielectric Spectroscopy. ACS Macro Letters, 2016, 5, 528-532.	2.3	35
72	Poly(vinylphosphonic acidâ€<i>co</i>â€acrylic acid) hydrogels: The effect of copolymer composition on osteoblast adhesion and proliferation. Journal of Biomedical Materials Research - Part A, 2018, 106, 255-264.	2.1	35

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73	Effect of Backbone Rigidity on the Glass Transition of Polymers of Intrinsic Microporosity Probed by Fast Scanning Calorimetry. ACS Macro Letters, 2019, 8, 1022-1028.	2.3	35
74	Aging of polymers of intrinsic microporosity tracked by methanol vapour permeation. Journal of Membrane Science, 2016, 520, 895-906.	4.1	34
75	Synthesis and characterization of composite membranes made of graphene and polymers of intrinsic microporosity. Carbon, 2016, 102, 357-366.	5.4	34
76	Title is missing!. Journal of Materials Chemistry, 2001, 11, 2979-2984.	6.7	33
77	CHEMISTRY: Putting Order into Polymer Networks. Science, 2007, 316, 210-211.	6.0	33
78	Synthesis and Characterization of Poly(vinylphosphonic acid-<i>co</i>-acrylic acid) Copolymers for Application in Bone Tissue Scaffolds. Macromolecules, 2016, 49, 2656-2662.	2.2	33
79	Unusual temperature dependence of the positron lifetime in a polymer of intrinsic microporosity. Physica Status Solidi - Rapid Research Letters, 2007, 1, 190-192.	1.2	32
80	Enhanced gas separation factors of microporous polymer constrained in the channels of anodic alumina membranes. Scientific Reports, 2016, 6, 31183.	1.6	32
81	Synthesis and Transport Properties of Novel MOF/PIM-1/MOF Sandwich Membranes for Gas Separation. Membranes, 2017, 7, 7.	1.4	32
82	Importance of small loops within PIM-1 topology on gas separation selectivity in thin film composite membranes. Journal of Materials Chemistry A, 2021, 9, 21807-21823.	5.2	30
83	Pervaporation and vapour permeation of methanol â€“ dimethyl carbonate mixtures through PIM-1 membranes. Separation and Purification Technology, 2019, 217, 206-214.	3.9	29
84	Gas sorption in polymers of intrinsic microporosity: The difference between solubility coefficients determined via time-lag and direct sorption experiments. Journal of Membrane Science, 2019, 570-571, 522-536.	4.1	29
85	Ultrapermeable Polymers of Intrinsic Microporosity Containing Spirocyclic Units with Fused Triptycenes. Advanced Functional Materials, 2021, 31, 2104474.	7.8	29
86	Molecular mobility and gas transport properties of nanocomposites based on PIM-1 and polyhedral oligomeric phenethyl-silsesquioxanes (POSS). Journal of Membrane Science, 2017, 529, 274-285.	4.1	28
87	PIM-1 membranes containing POSS - graphene oxide for CO2 separation. Separation and Purification Technology, 2022, 298, 121447.	3.9	28
88	Electrostatically-coupled graphene oxide nanocomposite cation exchange membrane. Journal of Membrane Science, 2020, 594, 117457.	4.1	26
89	Correlating Gas Permeability and Youngâ€™s Modulus during the Physical Aging of Polymers of Intrinsic Microporosity Using Atomic Force Microscopy. Industrial & Engineering Chemistry Research, 2020, 59, 5381-5391.	1.8	25
90	Dimethylamino- and trimethylammonium-tipped oxyethyleneâ€“oxybutylene diblock copolymers and their use as structure-directing agents in the preparation of mesoporous silica. Journal of Materials Chemistry, 2002, 12, 2286-2291.	6.7	23

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91	Intrinsically Microporous Polymer Nanosheets for Highâ€Performance Gas Separation Membranes. Macromolecular Rapid Communications, 2020, 41, e1900572.	2.0	23
92	Upgrading of raw biogas using membranes based on the ultrapermeable polymer of intrinsic microporosity PIM-TMN-Trip. Journal of Membrane Science, 2021, 618, 118694.	4.1	23
93	PIM-1/Holey Graphene Oxide Mixed Matrix Membranes for Gas Separation: Unveiling the Role of Holes. ACS Applied Materials & Interfaces, 2021, 13, 55517-55533.	4.0	22
94	The potential of polymers of intrinsic microporosity (PIMs) and PIM/graphene composites for pervaporation membranes. BMC Chemical Engineering, 2019, 1, .	3.4	21
95	Characterization ofAnadenanthera macrocarpa exudate polysaccharide. Polymer International, 1997, 44, 55-60.	1.6	19
96	Poly[oxymethylene-oligo(oxyethylene)] for use in subambient temperature electrochromic devices. Polymer International, 2000, 49, 371-376.	1.6	19
97	Novel Mixed Matrix Membranes Based on Polymer of Intrinsic Microporosity PIM-1 Modified with Metal-Organic Frameworks for Removal of Heavy Metal Ions and Food Dyes by Nanofiltration. Membranes, 2022, 12, 14.	1.4	19
98	Anomalies in the low frequency vibrational density of states for a polymer with intrinsic microporosity â€“ the Boson peak of PIM-1. Physical Chemistry Chemical Physics, 2018, 20, 1355-1363.	1.3	17
99	The unique calcium chelation property of poly(vinyl phosphonic acidâ€coâ€acrylic acid) and effects on osteogenesis <i>in vitro</i>. Journal of Biomedical Materials Research - Part A, 2018, 106, 168-179.	2.1	15
100	High-Flux Thin Film Composite PIM-1 Membranes for Butanol Recovery: Experimental Study and Process Simulations. ACS Applied Materials & Interfaces, 2021, 13, 42635-42649.	4.0	15
101	Gas Transport in Mixed Matrix Membranes: Two Methods for Time Lag Determination. Computation, 2020, 8, 28.	1.0	14
102	Nuclear magnetic relaxation of Î±-13C nuclei of helical poly(Î³-hexyl-L-glutamate) and poly(Î³-benzyl-L-glutamate). Journal of Polymer Science, Part B: Polymer Physics, 1991, 29, 451-456.	2.4	13
103	Recovery of free volume in PIM-1 membranes through alcohol vapor treatment. Frontiers of Chemical Science and Engineering, 2021, 15, 872-881.	2.3	13
104	Enhancing the organophilic separations with mixed matrix membranes of PIM-1 and bimetallic Zn/Co-ZIF filler. Separation and Purification Technology, 2022, 283, 120216.	3.9	13
105	Harnessing the enantiomeric recognition ability of hydrophobic polymers of intrinsic microporosity (PIM-1) toward amino acids by converting them into hydrophilic polymer dots. Journal of Materials Chemistry C, 2020, 8, 13827-13835.	2.7	12
106	Glassy PEEK-WC vs. Rubbery PebaxÂ®1657 Polymers: Effect on the Gas Transport in CuNi-MOF Based Mixed Matrix Membranes. Applied Sciences (Switzerland), 2020, 10, 1310.	1.3	12
107	Influence of Polymer Topology on Gas Separation Membrane Performance of the Polymer of Intrinsic Microporosity PIM-Py. ACS Applied Polymer Materials, 2021, 3, 3485-3495.	2.0	11
108	Molecular Mobility of a Polymer of Intrinsic Microporosity Revealed by Quasielastic Neutron Scattering. Macromolecules, 2020, 53, 6731-6739.	2.2	10

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109	Advanced methods for analysis of mixed gas diffusion in polymeric membranes. Journal of Membrane Science, 2022, 648, 120356.	4.1	10
110	Environmentally benign and diastereoselective synthesis of 2,4,5-trisubstituted-2-imidazolines. RSC Advances, 2017, 7, 53278-53289.	1.7	9
111	Quantification of gas permeability of epoxy resin composites with graphene nanoplatelets. Composites Science and Technology, 2019, 184, 107875.	3.8	9
112	Micelle properties of a dimethylamino- and a trimethylammonium-tipped oxyethyleneâ€"oxybutylene diblock copolymer in water. Physical Chemistry Chemical Physics, 2003, 5, 3968-3972.	1.3	8
113	Graphene-PSS/<scp>l</scp>-DOPA nanocomposite cation exchange membranes for electrodialysis desalination. Environmental Science: Nano, 2020, 7, 3108-3123.	2.2	8
114	PEEKâ€"WC-Based Mixed Matrix Membranes Containing Polyimine Cages for Gas Separation. Molecules, 2021, 26, 5557.	1.7	8
115	Sieving gases with twisty polymers. Science, 2022, 375, 1354-1355.	6.0	8
116	Determination of Physical Properties and Crystallization Kinetics of Oil From Allanblackia Seeds and Shea Nuts Under Different Thermal Conditions. European Journal of Lipid Science and Technology, 2018, 120, 1700156.	1.0	7
117	Superglassy Polymers to Treat Natural Gas by Hybrid Membrane/Amine Processes: Can Fillers Help?. Membranes, 2020, 10, 413.	1.4	7
118	Graphene/Polyamide Laminates for Supercritical CO₂ and H₂S Barrier Applications: An Approach toward Permeation Shutdown. Advanced Materials Interfaces, 2018, 5, 1800304.	1.9	6
119	Thin film nanocomposite membranes of PIM-1 and graphene oxide/ZIF-8 nanohybrids for organophilic pervaporation. Separation and Purification Technology, 2022, 299, 121693.	3.9	6
120	Effect of end-group modification on the adsorption of poly(ethylene oxide)-b-poly(butylene oxide) diblock copolymers at the solidâ€"liquid interface. Polymer Bulletin, 2010, 65, 521-531.	1.7	5
121	Optical Analysis of the Internal Void Structure in Polymer Membranes for Gas Separation. Membranes, 2020, 10, 328.	1.4	5
122	Seeking synergy in membranes: blends and mixtures with polymers of intrinsic microporosity. Current Opinion in Chemical Engineering, 2022, 36, 100792.	3.8	5
123	Ordered Langmuirâ€"Blodgett films derived from a mesogenic polymer amphiphile. Journal of Materials Chemistry, 2000, 10, 2270-2273.	6.7	4
124	Poly[3-ethyl-1-vinyl-imidazolium] diethyl phosphate/PebaxÂ® 1657 Composite Membranes and Their Gas Separation Performance. Membranes, 2020, 10, 224.	1.4	4
125	Electrophoresis of polymeric dyes in macroporous polymer. Polymer Bulletin, 2002, 49, 33-37.	1.7	3
126	Polymers of Intrinsic Microporosity and Their Potential in Process Intensification. , 2020, , 231-264.		2

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127	Mixed matrix membranes derived from a spirobifluorene polymer of intrinsic microporosity and polyphenylene networks for the separation of toluene from dimethyl sulfoxide. Arkivoc, 2022, 2021, 120-130.	0.3	2
128	1.9 Membranes Made of Polymers of Intrinsic Microporosity (PIMs). , 2017, , 216-235.		1
129	Cross-Linked PIM-1 Membranes with Improved Stability to Aromatics. Key Engineering Materials, 0, 869, 431-436.	0.4	1
130	Gas Barriers: Graphene/Polyamide Laminates for Supercritical CO2 and H2 S Barrier Applications: An Approach toward Permeation Shutdown (Adv. Mater. Interfaces 15/2018). Advanced Materials Interfaces, 2018, 5, 1870076.	1.9	0
131	Designer Polymers Boost Cation Exchange. Trends in Chemistry, 2019, 1, 797-798.	4.4	0
132	Electrospun Adsorptive Nanofibrous Membranes from Ion Exchange Polymers to Snare Textile Dyes from Wastewater (Adv. Mater. Technol. 10/2021). Advanced Materials Technologies, 2021, 6, 2170059.	3.0	0