

# Raphael Semiat

## List of Publications by Year in descending order

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142  
papers

6,198  
citations

66234

42  
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79541

73  
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157  
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157  
docs citations

157  
times ranked

5644  
citing authors

#	ARTICLE	IF	CITATIONS
1	Identifying the Fe <sub>3</sub> Mn <sub>3</sub> O <sub>8</sub> phase as a superior catalyst for low-temperature catalytic oxidation of formaldehyde in air. <i>Environmental Science: Nano</i> , 2022, 9, 767-780.	2.2	4
2	Fouling control and modeling in reverse osmosis for seawater desalination: A review. <i>Computers and Chemical Engineering</i> , 2022, 162, 107794.	2.0	26
3	Simple modeling of Donnan separation processes: single and multicomponent feed solutions. <i>Separation Science and Technology</i> , 2020, 55, 1216-1226.	1.3	2
4	Solubility limits of CaSO <sub>4</sub> polymorphs in seawater solutions. <i>Desalination</i> , 2020, 475, 114200.	4.0	13
5	Electrochemical removal of nitrate from high salinity waste stream in a continuous flow reactor. <i>Journal of Environmental Chemical Engineering</i> , 2020, 8, 103727.	3.3	10
6	A hybrid iron oxyhydroxide agglomerates-ultrafiltration process for efficient removal of chromate. <i>Environmental Technology (United Kingdom)</i> , 2020, 42, 1-8.	1.2	1
7	Removal of nitrate from groundwater by Donnan dialysis. <i>Journal of Water Process Engineering</i> , 2020, 34, 101157.	2.6	21
8	Reusability of iron oxyhydroxide agglomerates adsorbent for repetitive phosphate removal. <i>Colloids and Surfaces A: Physicochemical and Engineering Aspects</i> , 2019, 579, 123680.	2.3	21
9	Re-mineralization of desalinated water using a mixture of CO <sub>2</sub> and H <sub>2</sub> SO <sub>4</sub> . <i>Desalination</i> , 2019, 467, 170-174.	4.0	5
10	Quantitative Measures of Reliability and Sensitivity of Nanoparticle-Based Sensors in Detecting Volatile Organic Compounds. <i>ACS Omega</i> , 2019, 4, 19983-19990.	1.6	3
11	Removal of silica from brackish water by integrated adsorption/ultrafiltration process. <i>Environmental Science and Pollution Research</i> , 2019, 26, 31623-31631.	2.7	13
12	Electrochemical removal of nitrate from a Donnan dialysis waste stream. <i>Water Science and Technology</i> , 2019, 80, 727-736.	1.2	9
13	Intermediate concentrate demineralization techniques for enhanced brackish water reverse osmosis water recovery – A review. <i>Desalination</i> , 2019, 466, 24-35.	4.0	41
14	Comparing fine particulate iron hydroxide adsorbents for the removal of phosphate in a hybrid adsorption/ultrafiltration system. <i>Separation and Purification Technology</i> , 2019, 221, 23-28.	3.9	24
15	Modification of a polypropylene feed spacer with metal oxide-thin film by chemical bath deposition for biofouling control in membrane filtration. <i>Journal of Membrane Science</i> , 2019, 573, 511-519.	4.1	21
16	A kinetic approach to desalinated water corrosion control by CaCO <sub>3</sub> films. <i>Desalination</i> , 2019, 449, 50-54.	4.0	13
17	Modification of polyamide membranes by hydrophobic molecular plugs for improved boron rejection. <i>Journal of Membrane Science</i> , 2018, 546, 165-172.	4.1	59
18	Polymeric microtubes for water filtration by coaxial electrospinning technique. <i>Polymers for Advanced Technologies</i> , 2017, 28, 570-582.	1.6	22

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19	Hybrid electrolysis-crystallization system for silica removal from aqueous solutions. <i>Desalination</i> , 2017, 407, 41-45.	4.0	15
20	Characterization and quantification of chromate adsorption by layered porous iron oxyhydroxide: An experimental and theoretical study. <i>Journal of Hazardous Materials</i> , 2017, 338, 472-481.	6.5	29
21	A perspective on reverse osmosis water desalination: Quest for sustainability. <i>AIChE Journal</i> , 2017, 63, 1771-1784.	1.8	70
22	Sustainable RO desalination - Energy demand and environmental impact. <i>Desalination</i> , 2017, 424, 10-16.	4.0	103
23	Modeling Remineralization of Desalinated Water by Micronized Calcite Dissolution. <i>Environmental Science &amp; Technology</i> , 2017, 51, 12481-12488.	4.6	13
24	Applying a modified Donnan model to describe the surface complexation of chromate to iron oxyhydroxide agglomerates with heteromorphous pores. <i>Journal of Colloid and Interface Science</i> , 2017, 506, 66-75.	5.0	17
25	Numerical simulation of heat transfer in a horizontal falling film evaporator of multiple-effect distillation. <i>Desalination</i> , 2017, 401, 206-229.	4.0	31
26	Evaluation of osmotic energy extraction via FEM modeling and exploration of PRO operational parameter space. <i>Desalination</i> , 2017, 401, 120-133.	4.0	4
27	Analysis of the onset of calcium sulfate scaling on RO membranes. <i>Journal of Membrane Science</i> , 2017, 524, 299-304.	4.1	48
28	Characterization of the effectiveness of anti-scalants in suppressing scale deposition on a heated surface. <i>Desalination</i> , 2016, 397, 38-42.	4.0	20
29	Kinetics of dolomite dissolution in a packed bed by acidified desalinated water. <i>Desalination</i> , 2016, 396, 39-47.	4.0	13
30	Modeling and kinetics study of Bisphenol A (BPA) degradation over an FeOCl/SiO <sub>2</sub> Fenton-like catalyst. <i>Catalysis Today</i> , 2016, 276, 85-96.	2.2	59
31	Degradation of trichloroethylene by hydrodechlorination using formic acid as hydrogen source over supported Pd catalysts. <i>Journal of Hazardous Materials</i> , 2016, 305, 178-189.	6.5	31
32	Removal of scale-forming ions by a novel cation-exchange electrochemical system - A review. <i>Desalination and Water Treatment</i> , 2016, 57, 23147-23161.	1.0	12
33	Design model for magnesium ions re-mineralization of desalinated water by dissolution of magnesia pellets. <i>Desalination</i> , 2015, 373, 10-15.	4.0	4
34	Phosphate adsorption on granular ferric hydroxide to increase product water recovery in reverse osmosis-desalination of secondary effluents. <i>Desalination</i> , 2015, 364, 53-61.	4.0	29
35	On the analysis of FO mass transfer resistances via CFD analysis and film theory. <i>Journal of Membrane Science</i> , 2015, 495, 198-205.	4.1	24
36	Simple modeling of Donnan separation processes. <i>Journal of Membrane Science</i> , 2015, 476, 348-355.	4.1	21

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37	State-of-the-art review on post-treatment technologies. Desalination, 2015, 356, 285-293.	4.0	26
38	Energy and environmental issues in desalination. Desalination, 2015, 366, 2-8.	4.0	248
39	The influence of competitive inorganic ions on phosphate removal from water by adsorption on iron (Fe+3) oxide/hydroxide nanoparticles-based agglomerates. Journal of Water Process Engineering, 2015, 5, 143-152.	2.6	53
40	Controlled migration of antifog additives from LLDPE compatibilized with LLDPE grafted maleic anhydride. Polymers for Advanced Technologies, 2014, 25, 1484-1491.	1.6	26
41	Boron removal from water and its recovery using iron (Fe+3) oxide/hydroxide-based nanoparticles (NanoFe) and NanoFe-impregnated granular activated carbon as adsorbent. Desalination, 2014, 333, 107-117.	4.0	71
42	Phosphate removal from aqueous solution by an adsorption ultrafiltration system. Separation and Purification Technology, 2014, 132, 487-495.	3.9	25
43	Simple Model for Characterizing a Donnan Dialysis Process. Industrial & Engineering Chemistry Research, 2014, 53, 6094-6102.	1.8	22
44	Analysis of forward osmosis desalination via two-dimensional FEM model. Journal of Membrane Science, 2014, 464, 161-172.	4.1	57
45	Modeling CaCO <sub>3</sub> precipitation in fluidized bed CO <sub>2</sub> stripping desalination process. Desalination, 2013, 311, 192-197.	4.0	6
46	Simple process for hardening desalinated water with Mg <sup>2+</sup> ions. Desalination and Water Treatment, 2013, 51, 924-929.	1.0	8
47	Electrochemical CaCO <sub>3</sub> scale removal with a bipolar membrane system. Journal of Membrane Science, 2013, 445, 88-95.	4.1	53
48	Impact of ZnO embedded feed spacer on biofilm development in membrane systems. Water Research, 2013, 47, 6628-6638.	5.3	41
49	Rotating cylinder technique for assessing the effectiveness of anti-scalants. Water Research, 2013, 47, 3716-3722.	5.3	3
50	Destruction of Organics in Water via Iron Nanoparticles. , 2013, , 7-32.		0
51	Selenium removal from water and its recovery using iron (Fe <sup>3+</sup> ) oxide/hydroxide-based nanoparticles sol (NanoFe) as an adsorbent. Separation and Purification Technology, 2013, 103, 167-172.	3.9	95
52	Electrochemical Removal of Phosphate Ions from Treated Wastewater. Industrial & Engineering Chemistry Research, 2013, 52, 13795-13800.	1.8	18
53	Design Considerations of a Packed Calcite Bed for Hardening Desalinated Water. Industrial & Engineering Chemistry Research, 2013, 52, 10549-10553.	1.8	11
54	Remineralization of desalinated water by limestone dissolution with carbon dioxide. Desalination and Water Treatment, 2013, 51, 877-881.	1.0	18

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55	Water desalination. Reviews in Chemical Engineering, 2012, 28, .	2.3	16
56	Rigorous modeling of the kinetics of calcium carbonate deposit formation. AIChE Journal, 2012, 58, 1222-1229.	1.8	27
57	Rigorous modeling of the kinetics of calcium carbonate deposit formation $\text{CO}_2$ effect. AIChE Journal, 2012, 58, 2286-2289.	1.8	12
58	Effect of the concentration polarization on the fouling driving force of UF membranes. Desalination and Water Treatment, 2011, 31, 54-58.	1.0	2
59	Removal of heavy metals by immobilized magnetite nano-particles. Desalination and Water Treatment, 2011, 31, 64-70.	1.0	19
60	Humic acid removal by deep-bed filtration and by UF membranes. Desalination and Water Treatment, 2011, 31, 42-53.	1.0	5
61	Scaling propensity of seawater in RO boron removal processes. Journal of Membrane Science, 2011, 384, 198-204.	4.1	42
62	Adsorption-desorption mechanism of phosphate by immobilized nano-sized magnetite layer: Interface and bulk interactions. Journal of Colloid and Interface Science, 2011, 363, 608-614.	5.0	62
63	High recovery brackish water desalination process devoid of precipitation chemicals. Desalination, 2011, 283, 80-88.	4.0	15
64	Improved high recovery brackish water desalination process based on fluidized bed air stripping. Desalination, 2011, 281, 75-79.	4.0	17
65	Fixed bed phosphate adsorption by immobilized nano-magnetite matrix: experimental and a new modeling approach. Adsorption, 2011, 17, 929-936.	1.4	24
66	The role of activated carbon as a catalyst in GAC/iron oxide/H <sub>2</sub> O <sub>2</sub> oxidation process. Desalination, 2011, 273, 57-63.	4.0	65
67	Impact of halogen based disinfectants in seawater on polyamide RO membranes. Desalination, 2011, 273, 179-183.	4.0	30
68	Finite element analysis of forward osmosis process using NaCl solutions. Journal of Membrane Science, 2011, 379, 86-96.	4.1	46
69	Synthesis, performance, and modeling of immobilized nano-sized magnetite layer for phosphate removal. Journal of Colloid and Interface Science, 2011, 357, 440-446.	5.0	74
70	Low electrode area electrochemical scale removal system. Desalination and Water Treatment, 2011, 31, 35-41.	1.0	37
71	Correlation of $\text{CaCO}_3$ induction times measured by an electrochemical technique. Desalination and Water Treatment, 2011, 31, 59-63.	1.0	1
72	PHOSPHATE REMOVAL FROM WATER AND RECOVERY USING IRON (Fe <sup>+3</sup> ) OXIDE/HYDROXIDE NANOPARTICLES-BASED AGGLOMERATES SUSPENSION (AggFe) AS ADSORBENT. Environmental Engineering and Management Journal, 2011, 10, 1923-1933.	0.2	12

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73	Biofouling formation and modeling in nanofiltration membranes applied to wastewater treatment. <i>Journal of Membrane Science</i> , 2010, 360, 165-173.	4.1	45
74	Kinetics of phenol mineralization by Fenton-like oxidation. <i>Desalination</i> , 2010, 264, 188-192.	4.0	64
75	Parameters affecting backwash variables of RO membranes. <i>Desalination</i> , 2010, 261, 347-353.	4.0	21
76	Modeling of backwash cleaning methods for RO membranes. <i>Desalination</i> , 2010, 261, 338-346.	4.0	18
77	Humic substances fouling in ultrafiltration processes. <i>Desalination</i> , 2010, 261, 218-231.	4.0	176
78	Characterization of iron oxide nanocatalyst in mineralization processes. <i>Desalination</i> , 2010, 262, 15-20.	4.0	13
79	Calcium carbonate hardness removal by a novel electrochemical seeds system. <i>Desalination</i> , 2010, 263, 285-289.	4.0	88
80	Energy Aspects in Osmotic Processes. <i>Desalination and Water Treatment</i> , 2010, 15, 228-235.	1.0	32
81	Effect of concentrate recycle on anti-scalant performance. <i>Desalination and Water Treatment</i> , 2009, 6, 18-24.	1.0	2
82	Wastewater mineralization using advanced oxidation process. <i>Desalination and Water Treatment</i> , 2009, 6, 152-159.	1.0	14
83	Electrostatic potential on anti-scalants modified CaCO <sub>3</sub> (104) surface: A molecular simulation study. <i>Desalination</i> , 2009, 238, 246-256.	4.0	16
84	Modeling the effect of anti-scalant on CaCO <sub>3</sub> precipitation in continuous flow. <i>Desalination and Water Treatment</i> , 2009, 1, 17-24.	1.0	12
85	Iron (2,3) oxides based nano-particles as catalysts in advanced organic aqueous oxidation. <i>Desalination and Water Treatment</i> , 2009, 6, 190-191.	1.0	5
86	Osmotic backwash mechanism of reverse osmosis membranes. <i>Journal of Membrane Science</i> , 2008, 322, 225-233.	4.1	67
87	The potential of CO <sub>2</sub> stripping for pretreating brackish and wastewater desalination feeds. <i>Desalination</i> , 2008, 222, 50-58.	4.0	28
88	Development of the electrochemical scale removal technique for desalination applications. <i>Desalination</i> , 2008, 230, 329-342.	4.0	82
89	Cold catalytic recovery of loaded activated carbon using iron oxide-based nanoparticles. <i>Water Research</i> , 2008, 42, 163-168.	5.3	15
90	Iron(3) oxide-based nanoparticles as catalysts in advanced organic aqueous oxidation. <i>Water Research</i> , 2008, 42, 492-498.	5.3	141

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91	Phenol oxidation kinetics in water solution using iron(3)-oxide-based nano-catalysts. Water Research, 2008, 42, 3848-3856.	5.3	71
92	Energy Issues in Desalination Processes. Environmental Science & Technology, 2008, 42, 8193-8201.	4.6	598
93	Advancing Materials and Technologies for Water Purification. MRS Bulletin, 2008, 33, 9-15.	1.7	9
94	Membranes in Desalination and Water Treatment. MRS Bulletin, 2008, 33, 16-20.	1.7	14
95	Scaling Salt Removal by Addition of Inorganic Particles. Journal of Chemical Engineering of Japan, 2008, 41, 6-12.	0.3	5
96	Direct Processing of RTD Signals from Conductivity Data in Spiral Wound RO Modules. Journal of Chemical Engineering of Japan, 2008, 41, 1-5.	0.3	1
97	Removal of CaCO <sub>3</sub> Scaling Salt from RO Concentrates by Air-Blow and Inorganic Inducers. Journal of Chemical Engineering of Japan, 2008, 41, 13-20.	0.3	5
98	Desupersaturation of RO Concentrates by Addition of Coagulant and Surfactant. Journal of Chemical Engineering of Japan, 2007, 40, 730-735.	0.3	10
99	Bacterial community composition and structure of biofilms developing on nanofiltration membranes applied to wastewater treatment. Water Research, 2007, 41, 3924-3935.	5.3	186
100	Detection of fouling on RO modules by residence time distribution analyses. Desalination, 2007, 204, 132-144.	4.0	21
101	RO module RTD analyses based on directly processing conductivity signals. Journal of Membrane Science, 2007, 306, 355-364.	4.1	22
102	Scale Control in Saline and Wastewater Desalination. Israel Journal of Chemistry, 2006, 46, 97-104.	1.0	35
103	Experimental study of the flow between two membranes. Desalination, 2006, 199, 108-110.	4.0	0
104	Osmotic backwash process in RO membranes. Desalination, 2006, 199, 387-389.	4.0	32
105	Effect of axial dispersion on the concentration polarization level in spiral wound modules. Desalination, 2006, 199, 451-453.	4.0	5
106	Free-surface flow of concentrated suspensions. International Journal of Multiphase Flow, 2006, 32, 775-790.	1.6	18
107	Boron removal from water by complexation to polyol compounds. Journal of Membrane Science, 2006, 286, 45-51.	4.1	130
108	Investigation of flow next to membrane walls. Journal of Membrane Science, 2005, 264, 137-150.	4.1	67

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109	Limits of RO recovery imposed by calcium phosphate precipitation. Desalination, 2005, 183, 273-288.	4.0	95
110	Critical flux detection in a silica scaling RO system. Desalination, 2005, 186, 311-318.	4.0	33
111	Inhibition of CaCO <sub>3</sub> scaling on RO membranes by trace amounts of zinc ions. Desalination, 2005, 183, 289-300.	4.0	58
112	Backwash of RO spiral wound membranes. Desalination, 2005, 179, 1-9.	4.0	87
113	Low strength graywater characterization and treatment by direct membrane filtration. Desalination, 2004, 170, 241-250.	4.0	103
114	Analysis of parameters affecting boron permeation through reverse osmosis membranes. Journal of Membrane Science, 2004, 243, 79-87.	4.1	105
115	Scaling of RO membranes from silica supersaturated solutions. Desalination, 2003, 157, 169-191.	4.0	70
116	Induction times induced in an RO system by antiscalants delaying CaSO <sub>4</sub> precipitation. Desalination, 2003, 157, 193-207.	4.0	78
117	Characterization of the effectiveness of silica anti-scalants. Desalination, 2003, 159, 11-19.	4.0	32
118	Shear-induced corrugation of free interfaces in concentrated suspensions. Journal of Non-Newtonian Fluid Mechanics, 2002, 102, 115-134.	1.0	17
119	Evaluation of membrane processes to reduce the salinity of reclaimed wastewater. Desalination, 2001, 137, 71-89.	4.0	19
120	Inception of CaSO <sub>4</sub> scaling on RO membranes at various water recovery levels. Desalination, 2001, 139, 73-81.	4.0	129
121	Technique for evaluating silica scaling and its inhibition in RO desalting. Desalination, 2001, 140, 181-193.	4.0	35
122	Desalination education capacity in Israel. Desalination, 2001, 141, 191-198.	4.0	4
123	Laboratory technique for predicting the scaling propensity of RO feed waters. Desalination, 2000, 132, 233-242.	4.0	67
124	Simple technique for measuring the concentration polarization level in a reverse osmosis system. Desalination, 2000, 131, 117-127.	4.0	168
125	Effect of solvent properties on permeate flow through nanofiltration membranes. Journal of Membrane Science, 2000, 166, 63-69.	4.1	162
126	Present and Future. Water International, 2000, 25, 54-65.	0.4	119



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127	REVIEW OF DYNAMIC MEMBRANES. <i>Reviews in Chemical Engineering</i> , 1999, 15, 1-40.	2.3	11
128	Effect of solvent properties on permeate flow through nanofiltration membranes. Part I: investigation of parameters affecting solvent flux. <i>Journal of Membrane Science</i> , 1999, 163, 93-102.	4.1	230
129	Removal of organic foulants from feed waters by dynamic membranes. <i>Desalination</i> , 1999, 125, 65-75.	4.0	31
130	Bubble growth in a viscous liquid in a simple shear flow. <i>AIChE Journal</i> , 1999, 45, 691-695.	1.8	22
131	Suppression of CaCO <sub>3</sub> scale deposition by anti-scalants. <i>Desalination</i> , 1998, 118, 285-296.	4.0	70
132	To Teach Chemists Engineering. <i>Journal of Chemical Education</i> , 1998, 75, 583.	1.1	3
133	Influence of the flow system on the inhibitory action of CaCO <sub>3</sub> scale prevention additives. <i>Desalination</i> , 1997, 108, 67-79.	4.0	80
134	Fouling of RO membranes by phthalate esters contamination. <i>Desalination</i> , 1996, 105, 13-20.	4.0	3
135	Laser Grating technique for measurement of local velocity of large drops and jets in liquid-liquid systems. <i>Chemical Engineering Science</i> , 1996, 51, 5111-5123.	1.9	0
136	Mass transfer between a slender bubble and a viscous liquid in axisymmetric extensional flow. <i>Chemical Engineering Science</i> , 1996, 51, 1169-1172.	1.9	12
137	Batch Settling of Liquid-Liquid Dispersion. <i>Industrial &amp; Engineering Chemistry Research</i> , 1995, 34, 2427-2435.	1.8	28
138	Spray pyrolysis of YBCO precursors. <i>Journal of Materials Research</i> , 1994, 9, 2490-2500.	1.2	10
139	Continuous rotary kiln calcination of yttrium barium copper oxide precursor powders. <i>Industrial &amp; Engineering Chemistry Research</i> , 1994, 33, 421-427.	1.8	4
140	Batch Rotary Kiln Calcination of YBaCuO Precursor Powders. <i>Journal of the American Ceramic Society</i> , 1993, 76, 518-522.	1.9	4
141	Modelling and control of two-phase systems. <i>Computers and Chemical Engineering</i> , 1992, 16, S149-S156.	2.0	5
142	Simultaneous measurement of size and velocity of bubbles or drops: A new optical technique. <i>AIChE Journal</i> , 1981, 27, 148-159.	1.8	41