Menachem Elimelech

List of Publications by Citations

515 papers	87,475 citations	151 h-index	284 g-index
535 ext. papers	98,297 ext. citations	10.8 avg, IF	8.84 L-index

#	Paper	IF	Citations
515	Science and technology for water purification in the coming decades. *Nature*, **2008**, 452, 301-10	50.4	5633
514	The future of seawater desalination: energy, technology, and the environment. *Science*, **2011**, 333, 712-7	33.3	3767
513	Forward osmosis: Principles, applications, and recent developments. *Journal of Membrane Science*, **2006**, 281, 70-87	9.6	1819
512	Materials for next-generation desalination and water purification membranes. *Nature Reviews Materials*, **2016**, 1,	73.3	1380
511	Maximizing the right stuff: The trade-off between membrane permeability and selectivity. *Science*, **2017**, 356,	33.3	1187
510	Environmental applications of carbon-based nanomaterials. *Environmental Science & Technology*, **2008**, 42, 5843-59	10.3	1154
509	Environmental applications of graphene-based nanomaterials. *Chemical Society Reviews*, **2015**, 44, 5861-98	38.5	1022
508	Single-walled carbon nanotubes exhibit strong antimicrobial activity. *Langmuir*, **2007**, 23, 8670-3	4	1014
507	Chemical and physical aspects of natural organic matter (NOM) fouling of nanofiltration membranes. *Journal of Membrane Science*, **1997**, 132, 159-181	9.6	1011
506	Membrane-based processes for sustainable power generation using water. *Nature*, **2012**, 488, 313-9	50.4	969
505	Influence of concentrative and dilutive internal concentration polarization on flux behavior in forward osmosis. *Journal of Membrane Science*, **2006**, 284, 237-247	9.6	962
504	Influence of membrane surface properties on initial rate of colloidal fouling of reverse osmosis and nanofiltration membranes. *Journal of Membrane Science*, **2001**, 188, 115-128	9.6	900
503	Aggregation and deposition of engineered nanomaterials in aquatic environments: role of physicochemical interactions. *Environmental Science & Technology*, **2010**, 44, 6532-49	10.3	880
502	Colloid mobilization and transport in groundwater. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **1996**, 107, 1-56	5.1	870
501	Antibacterial effects of carbon nanotubes: size does matter!. *Langmuir*, **2008**, 24, 6409-13	4	859
500	Correlation equation for predicting single-collector efficiency in physicochemical filtration in saturated porous media. *Environmental Science & Technology*, **2004**, 38, 529-36	10.3	830
499	Effect of solution chemistry on the surface charge of polymeric reverse osmosis and nanofiltration membranes. *Journal of Membrane Science*, **1996**, 119, 253-268	9.6	753

498	A novel ammonia–carbon dioxide forward (direct) osmosis desalination process. *Desalination*, **2005**, 174, 1-11	10.3	747
497	High performance thin-film composite forward osmosis membrane. *Environmental Science & Technology*, **2010**, 44, 3812-8	10.3	738
496	Antifouling membranes for sustainable water purification: strategies and mechanisms. *Chemical Society Reviews*, **2016**, 45, 5888-5924	58.5	676
495	Organic fouling of forward osmosis membranes: Fouling reversibility and cleaning without chemical reagents. *Journal of Membrane Science*, **2010**, 348, 337-345	9.6	661
494	Desalination by ammonia–carbon dioxide forward osmosis: Influence of draw and feed solution concentrations on process performance. *Journal of Membrane Science*, **2006**, 278, 114-123	9.6	650
493	Antimicrobial Properties of Graphene Oxide Nanosheets: Why Size Matters. *ACS Nano*, **2015**, 9, 7226-36	16.7	620
492	Organic fouling and chemical cleaning of nanofiltration membranes: measurements and mechanisms. *Environmental Science & Technology*, **2004**, 38, 4683-93	10.3	604
491	Water and sanitation in developing countries: including health in the equation. *Environmental Science & Technology*, **2007**, 41, 17-24	10.3	576
490	Aggregation and deposition kinetics of fullerene (C60) nanoparticles. *Langmuir*, **2006**, 22, 10994-1001	4	574
489	Forward osmosis: Where are we now?. *Desalination*, **2015**, 356, 271-284	10.3	568
488	Comparison of fouling behavior in forward osmosis (FO) and reverse osmosis (RO). *Journal of Membrane Science*, **2010**, 365, 34-39	9.6	568
487	Desalination and reuse of high-salinity shale gas produced water: drivers, technologies, and future directions. *Environmental Science & Technology*, **2013**, 47, 9569-83	10.3	545
486	Influence of humic acid on the aggregation kinetics of fullerene (C60) nanoparticles in monovalent and divalent electrolyte solutions. *Journal of Colloid and Interface Science*, **2007**, 309, 126-34	9.3	530
485	Relating Nanofiltration Membrane Performance to Membrane Charge (Electrokinetic) Characteristics. *Environmental Science & Technology*, **2000**, 34, 3710-3716	10.3	516
484	Reverse draw solute permeation in forward osmosis: modeling and experiments. *Environmental Science & Technology*, **2010**, 44, 5170-6	10.3	513
483	Chemical and physical aspects of organic fouling of forward osmosis membranes. *Journal of Membrane Science*, **2008**, 320, 292-302	9.6	507
482	Internal concentration polarization in forward osmosis: role of membrane orientation. *Desalination*, **2006**, 197, 1-8	10.3	498
481	Relating performance of thin-film composite forward osmosis membranes to support layer formation and structure. *Journal of Membrane Science*, **2011**, 367, 340-352	9.6	489

480	Biofouling of reverse osmosis membranes: Role of biofilm-enhanced osmotic pressure. *Journal of Membrane Science*, **2007**, 295, 11-20	9.6	473
479	Mobile Subsurface Colloids and Their Role in Contaminant Transport. *Advances in Agronomy*, **1999**, 66, 121-193	7.7	460
478	Role of membrane surface morphology in colloidal fouling of cellulose acetate and composite aromatic polyamide reverse osmosis membranes. *Journal of Membrane Science*, **1997**, 127, 101-109	9.6	459
477	Membrane distillation at the water-energy nexus: limits, opportunities, and challenges. *Energy and Environmental Science*, **2018**, 11, 1177-1196	35.4	458
476	Cake-enhanced concentration polarization: a new fouling mechanism for salt-rejecting membranes. *Environmental Science & Technology*, **2003**, 37, 5581-8	10.3	455
475	Energy requirements of ammonia□carbon dioxide forward osmosis desalination. *Desalination*, **2007**, 207, 370-382	10.3	439
474	The Global Rise of Zero Liquid Discharge for Wastewater Management: Drivers, Technologies, and Future Directions. *Environmental Science & Technology*, **2016**, 50, 6846-55	10.3	433
473	Removal of natural hormones by nanofiltration membranes: measurement, modeling, and mechanisms. *Environmental Science & Technology*, **2004**, 38, 1888-96	10.3	432
472	Thin-film composite pressure retarded osmosis membranes for sustainable power generation from salinity gradients. *Environmental Science & Technology*, **2011**, 45, 4360-9	10.3	430
471	Kinetics of deposition of colloidal particles in porous media. *Environmental Science & Technology*, **1990**, 24, 1528-1536	10.3	430
470	Bacterial adhesion and transport in porous media: role of the secondary energy minimum. *Environmental Science & Technology*, **2004**, 38, 1777-85	10.3	409
469	Thin-Film Composite Polyamide Membranes Functionalized with Biocidal Graphene Oxide Nanosheets. *Environmental Science and Technology Letters*, **2014**, 1, 71-76	11	396
468	The Critical Need for Increased Selectivity, Not Increased Water Permeability, for Desalination Membranes. *Environmental Science and Technology Letters*, **2016**, 3, 112-120	11	392
467	Electronic-structure-dependent bacterial cytotoxicity of single-walled carbon nanotubes. *ACS Nano*, **2010**, 4, 5471-9	16.7	392
466	Evaluation of removal of noroviruses during wastewater treatment, using real-time reverse transcription-PCR: different behaviors of genogroups I and II. *Applied and Environmental Microbiology*, **2007**, 73, 7891-7	4.8	390
465	A single-walled-carbon-nanotube filter for removal of viral and bacterial pathogens. *Small*, **2008**, 4, 481-41		387
464	Emerging opportunities for nanotechnology to enhance water security. *Nature Nanotechnology*, **2018**, 13, 634-641	28.7	381
463	Pharmaceutical retention mechanisms by nanofiltration membranes. *Environmental Science & Technology*, **2005**, 39, 7698-705	10.3	380

462	Aggregation kinetics of alginate-coated hematite nanoparticles in monovalent and divalent electrolytes. *Environmental Science & Technology*, **2006**, 40, 1516-23	10.3	380
461	Influence of membrane support layer hydrophobicity on water flux in osmotically driven membrane processes. *Journal of Membrane Science*, **2008**, 318, 458-466	9.6	377
460	Breakdown of colloid filtration theory: role of the secondary energy minimum and surface charge heterogeneities. *Langmuir*, **2005**, 21, 841-52	4	368
459	Relating organic fouling of reverse osmosis membranes to intermolecular adhesion forces. *Environmental Science & Technology*, **2006**, 40, 980-7	10.3	363
458	Aggregation kinetics of multiwalled carbon nanotubes in aquatic systems: measurements and environmental implications. *Environmental Science & Technology*, **2008**, 42, 7963-9	10.3	362
457	Anti-fouling ultrafiltration membranes containing polyacrylonitrile-graft-poly(ethylene oxide) comb copolymer additives. *Journal of Membrane Science*, **2007**, 298, 136-146	9.6	362
456	Measuring the zeta (electrokinetic) potential of reverse osmosis membranes by a streaming potential analyzer. *Desalination*, **1994**, 95, 269-286	10.3	355
455	Effect of Membrane Surface Roughness on Colloid−Membrane DLVO Interactions. *Langmuir*, **2003**, 19, 4836-4847	4	354
454	A method for the simultaneous determination of transport and structural parameters of forward osmosis membranes. *Journal of Membrane Science*, **2013**, 444, 523-538	9.6	327
453	Effect of particle size on collision efficiency in the deposition of Brownian particles with electrostatic energy barriers. *Langmuir*, **1990**, 6, 1153-1163	4	324
452	Colloid Transport in Geochemically Heterogeneous Porous Media: Modeling and Measurements. *Environmental Science & Technology*, **1996**, 30, 3284-3293	10.3	321
451	Coupling between chemical and physical interactions in natural organic matter (NOM) fouling of nanofiltration membranes: implications for fouling control. *Journal of Membrane Science*, **2002**, 203, 245-255	9.6	319
450	Microbial cytotoxicity of carbon-based nanomaterials: implications for river water and wastewater effluent. *Environmental Science & Technology*, **2009**, 43, 2648-53	10.3	317
449	Deviation from the classical colloid filtration theory in the presence of repulsive DLVO interactions. *Langmuir*, **2004**, 20, 10818-28	4	313
448	Dynamics of Colloid Deposition in Porous Media: Blocking Based on Random Sequential Adsorption. *Langmuir*, **1995**, 11, 801-812	4	305
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445	Membrane-based processes for wastewater nutrient recovery: Technology, challenges, and future direction. *Water Research*, **2016**, 89, 210-21	12.5	294

444	DLVO Interaction between Rough Surfaces. *Langmuir*, **1998**, 14, 3365-3375	4	293
443	Role of extracellular polymeric substances (EPS) in biofouling of reverse osmosis membranes. *Environmental Science & Technology*, **2009**, 43, 4393-8	10.3	290
442	Physicochemical determinants of multiwalled carbon nanotube bacterial cytotoxicity. *Environmental Science & Technology*, **2008**, 42, 7528-34	10.3	289
441	Modeling water flux in forward osmosis: Implications for improved membrane design. *AICHE Journal*, **2007**, 53, 1736-1744	3.6	288
440	Protein (BSA) fouling of reverse osmosis membranes: Implications for wastewater reclamation. *Journal of Membrane Science*, **2007**, 296, 83-92	9.6	281
439	Electrochemical multiwalled carbon nanotube filter for viral and bacterial removal and inactivation. *Environmental Science & Technology*, **2011**, 45, 3672-9	10.3	278
438	Covalent binding of single-walled carbon nanotubes to polyamide membranes for antimicrobial surface properties. *ACS Applied Materials & Interfaces*, **2011**, 3, 2869-77	9.5	275
437	Gypsum scaling and cleaning in forward osmosis: measurements and mechanisms. *Environmental Science & Technology*, **2010**, 44, 2022-8	10.3	275
436	Chemical and physical aspects of cleaning of organic-fouled reverse osmosis membranes. *Journal of Membrane Science*, **2006**, 272, 198-210	9.6	274
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430	Arsenic removal by ferric chloride. *Journal - American Water Works Association*, **1996**, 88, 155-167	0.5	260
429	Arsenic Removal from Drinking Water during Coagulation. *Journal of Environmental Engineering, ASCE*, **1997**, 123, 800-807	2	258
428	Influence of biomacromolecules and humic acid on the aggregation kinetics of single-walled carbon nanotubes. *Environmental Science & Technology*, **2010**, 44, 2412-8	10.3	253
427	Interaction of fullerene (C60) nanoparticles with humic acid and alginate coated silica surfaces: measurements, mechanisms, and environmental implications. *Environmental Science & Technology*, **2008**, 42, 7607-14	10.3	251

426	Thermodynamic and energy efficiency analysis of power generation from natural salinity gradients by pressure retarded osmosis. *Environmental Science & Technology*, **2012**, 46, 5230-9	10.3	250
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424	Global challenges in energy and water supply: the promise of engineered osmosis. *Environmental Science & Technology*, **2008**, 42, 8625-9	10.3	243
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421	Highly hydrophilic polyvinylidene fluoride (PVDF) ultrafiltration membranes via postfabrication grafting of surface-tailored silica nanoparticles. *ACS Applied Materials & Interfaces*, **2013**, 5, 6694-703	9.5	235
420	Comparison of the removal of hydrophobic trace organic contaminants by forward osmosis and reverse osmosis. *Water Research*, **2012**, 46, 2683-92	12.5	234
419	Theory of concentration polarization in crossflow filtration. *Journal of the Chemical Society, Faraday Transactions*, **1995**, 91, 3389		234
418	Omniphobic Polyvinylidene Fluoride (PVDF) Membrane for Desalination of Shale Gas Produced Water by Membrane Distillation. *Environmental Science & Technology*, **2016**, 50, 12275-12282	10.3	232
417	Nanophotonics-enabled solar membrane distillation for off-grid water purification. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, 6936-6941	11.5	227
416	Antifouling ultrafiltration membranes via post-fabrication grafting of biocidal nanomaterials. *ACS Applied Materials & Interfaces*, **2011**, 3, 2861-8	9.5	226
415	Omniphobic Membrane for Robust Membrane Distillation. *Environmental Science and Technology Letters*, **2014**, 1, 443-447	11	224
414	Relative Insignificance of Mineral Grain Zeta Potential to Colloid Transport in Geochemically Heterogeneous Porous Media. *Environmental Science & Technology*, **2000**, 34, 2143-2148	10.3	224
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408	Antimicrobial Electrospun Biopolymer Nanofiber Mats Functionalized with Graphene Oxide-Silver Nanocomposites. *ACS Applied Materials & Interfaces*, **2015**, 7, 12751-9	9.5	213
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404	Kinetics of Colloid Deposition onto Heterogeneously Charged Surfaces in Porous Media. *Environmental Science & Technology*, **1994**, 28, 1164-71	10.3	209
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402	Environmental performance of graphene-based 3D macrostructures. *Nature Nanotechnology*, **2019**, 14, 107-119	28.7	203
401	A forward osmosis-membrane distillation hybrid process for direct sewer mining: system performance and limitations. *Environmental Science & Technology*, **2013**, 47, 13486-93	10.3	202
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399	In situ formation of silver nanoparticles on thin-film composite reverse osmosis membranes for biofouling mitigation. *Water Research*, **2014**, 62, 260-70	12.5	199
398	Transport of single-walled carbon nanotubes in porous media: filtration mechanisms and reversibility. *Environmental Science & Technology*, **2008**, 42, 8317-23	10.3	199
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393	Toward Resource Recovery from Wastewater: Extraction of Phosphorus from Digested Sludge Using a Hybrid Forward Osmosis–Membrane Distillation Process. *Environmental Science and Technology Letters*, **2014**, 1, 191-195	11	196
392	Role of Charge (Donnan) Exclusion in Removal of Arsenic from Water by a Negatively Charged Porous Nanofiltration Membrane. *Environmental Engineering Science*, **2001**, 18, 105-113	2	195
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382	Highly hydrophilic thin-film composite forward osmosis membranes functionalized with surface-tailored nanoparticles. *ACS Applied Materials & Interfaces*, **2012**, 4, 5044-53	9.5	180
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377	Development of Omniphobic Desalination Membranes Using a Charged Electrospun Nanofiber Scaffold. *ACS Applied Materials & Interfaces*, **2016**, 8, 11154-61	9.5	169
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352	Particle formation during oxidation catalysis with Cp* iridium complexes. *Journal of the American Chemical Society*, **2012**, 134, 9785-95	16.4	141
351	Biofouling Mitigation in Forward Osmosis Using Graphene Oxide Functionalized Thin-Film Composite Membranes. *Environmental Science & Technology*, **2016**, 50, 5840-8	10.3	141
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345	Towards single-species selectivity of membranes with subnanometre pores. *Nature Nanotechnology* , **2020**, 15, 426-436	28.7	138
344	Mitigation of Biofilm Development on Thin-Film Composite Membranes Functionalized with Zwitterionic Polymers and Silver Nanoparticles. *Environmental Science & Technology*, **2017**, 51, 182-191	10.3	137
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