Daniel Blankschtein

List of Publications by Year in Descending Order

129 papers	8,682 citations	49 h-index	91 g-index
132 ext. papers	9,651 ext. citations	7.1 avg, IF	6.25 L-index

#	Paper	IF	Citations
129	Gas Separations using Nanoporous Atomically Thin Membranes: Recent Theoretical, Simulation, and Experimental Advances.. *Advanced Materials*, **2022**, e2201472	24	3
128	Predicting Gas Separation through Graphene Nanopore Ensembles with Realistic Pore Size Distributions. *ACS Nano*, **2021**, 15, 1727-1740	16.7	10
127	Ion Adsorption at Solid/Water Interfaces: Establishing the Coupled Nature of Ion–Solid and Water–Solid Interactions. *Journal of Physical Chemistry C*, **2021**, 125, 2666-2679	3.8	3
126	Diameter Dependence of Water Filling in Lithographically Segmented Isolated Carbon Nanotubes. *ACS Nano*, **2021**, 15, 2778-2790	16.7	4
125	Direct Chemical Vapor Deposition Synthesis of Porous Single-Layer Graphene Membranes with High Gas Permeances and Selectivities. *Advanced Materials*, **2021**, 33, e2104308	24	8
124	Uncovering a Universal Molecular Mechanism of Salt Ion Adsorption at Solid/Water Interfaces. *Langmuir*, **2021**, 37, 722-733	4	14
123	Analytical Prediction of Gas Permeation through Graphene Nanopores of Varying Sizes: Understanding Transitions across Multiple Transport Regimes. *ACS Nano*, **2019**, 13, 11809-11824	16.7	31
122	Liquids with Lower Wettability Can Exhibit Higher Friction on Hexagonal Boron Nitride: The Intriguing Role of Solid-Liquid Electrostatic Interactions. *Nano Letters*, **2019**, 19, 1539-1551	11.5	25
121	Critical Knowledge Gaps in Mass Transport through Single-Digit Nanopores: A Review and Perspective. *Journal of Physical Chemistry C*, **2019**, 123, 21309-21326	3.8	121
120	Theory of Surface Forces in Multivalent Electrolytes. *Langmuir*, **2019**, 35, 11550-11565	4	29
119	Multi-scale approach for modeling stability, aggregation, and network formation of nanoparticles suspended in aqueous solutions. *Nanoscale*, **2019**, 11, 3979-3992	7.7	18
118	Addressing the isomer cataloguing problem for nanopores in two-dimensional materials. *Nature Materials*, **2019**, 18, 129-135	27	37
117	Ab Initio Molecular Dynamics and Lattice Dynamics-Based Force Field for Modeling Hexagonal Boron Nitride in Mechanical and Interfacial Applications. *Journal of Physical Chemistry Letters*, **2018**, 9, 1584-1591	6.4	33
116	Stable, Temperature-Dependent Gas Mixture Permeation and Separation through Suspended Nanoporous Single-Layer Graphene Membranes. *Nano Letters*, **2018**, 18, 5057-5069	11.5	42
115	Molecular Rotors for Universal Quantitation of Nanoscale Hydrophobic Interfaces in Microplate Format. *Nano Letters*, **2018**, 18, 618-628	11.5	3
114	Reconfigurable and responsive droplet-based compound micro-lenses. *Nature Communications*, **2017**, 8, 14673	17.4	91
113	Combined Use of Ultrasound and Other Physical Methods of Skin Penetration Enhancement **2017**, 369-377		

112	Fabrication, Pressure Testing, and Nanopore Formation of Single-Layer Graphene Membranes. *Journal of Physical Chemistry C*, **2017**, 121, 14312-14321	3.8	26
111	Quantitative Modeling of MoS_2–Solvent Interfaces: Predicting Contact Angles and Exfoliation Performance using Molecular Dynamics. *Journal of Physical Chemistry C*, **2017**, 121, 9022-9031	3.8	58
110	Schizophrenic Diblock-Copolymer-Functionalized Nanoparticles as Temperature-Responsive Pickering Emulsifiers. *Langmuir*, **2017**, 33, 13326-13331	4	30
109	CO-Reactive Ionic Liquid Surfactants for the Control of Colloidal Morphology. *Langmuir*, **2017**, 33, 7633-7641	4	2
108	Combined Molecular Dynamics Simulation-Molecular-Thermodynamic Theory Framework for Predicting Surface Tensions. *Langmuir*, **2017**, 33, 8319-8329	4	25
107	Insights on the Role of Many-Body Polarization Effects in the Wetting of Graphitic Surfaces by Water. *Journal of Physical Chemistry C*, **2017**, 121, 28166-28179	3.8	29
106	Mechanism and Prediction of Gas Permeation through Sub-Nanometer Graphene Pores: Comparison of Theory and Simulation. *ACS Nano*, **2017**, 11, 7974-7987	16.7	78
105	Understanding the colloidal dispersion stability of 1D and 2D materials: Perspectives from molecular simulations and theoretical modeling. *Advances in Colloid and Interface Science*, **2017**, 244, 36-53	14.3	28
104	Dominance of Dispersion Interactions and Entropy over Electrostatics in Determining the Wettability and Friction of Two-Dimensional MoS Surfaces. *ACS Nano*, **2016**, 10, 9145-9155	16.7	50
103	Destabilization of Oil-in-Water Emulsions Stabilized by Non-ionic Surfactants: Effect of Particle Hydrophilicity. *Langmuir*, **2016**, 32, 10694-10698	4	26
102	Lipid Exchange Envelope Penetration (LEEP) of Nanoparticles for Plant Engineering: A Universal Localization Mechanism. *Nano Letters*, **2016**, 16, 1161-72	11.5	139
101	Generalized Mechanistic Model for the Chemical Vapor Deposition of 2D Transition Metal Dichalcogenide Monolayers. *ACS Nano*, **2016**, 10, 4330-44	16.7	147
100	mRNA vaccine delivery using lipid nanoparticles. *Therapeutic Delivery*, **2016**, 7, 319-34	3.8	241
99	Dynamically reconfigurable complex emulsions via tunable interfacial tensions. *Nature*, **2015**, 518, 520-4	50.4	251
98	Liquid-Phase Exfoliation of Phosphorene: Design Rules from Molecular Dynamics Simulations. *ACS Nano*, **2015**, 9, 8255-68	16.7	137
97	Understanding Miltefosine-Membrane Interactions Using Molecular Dynamics Simulations. *Langmuir*, **2015**, 31, 4503-12	4	15
96	Ultrasound-mediated gastrointestinal drug delivery. *Science Translational Medicine*, **2015**, 7, 310ra168	17.5	64
95	Understanding the Stabilization of Single-Walled Carbon Nanotubes and Graphene in Ionic Surfactant Aqueous Solutions: Large-Scale Coarse-Grained Molecular Dynamics Simulation-Assisted DLVO Theory. *Journal of Physical Chemistry C*, **2015**, 119, 1047-1060	3.8	41

94	Applicability and safety of dual-frequency ultrasonic treatment for the transdermal delivery of drugs. *Journal of Controlled Release*, **2015**, 202, 93-100	11.7	40
93	2D equation-of-state model for corona phase molecular recognition on single-walled carbon nanotube and graphene surfaces. *Langmuir*, **2015**, 31, 628-36	4	20
92	Single compartment drug delivery. *Journal of Controlled Release*, **2014**, 190, 157-71	11.7	41
91	Understanding selective molecular recognition in integrated carbon nanotube-polymer sensors by simulating physical analyte binding on carbon nanotube-polymer scaffolds. *Soft Matter*, **2014**, 10, 5991-6004	3.6	8
90	Skin permeabilization for transdermal drug delivery: recent advances and future prospects. *Expert Opinion on Drug Delivery*, **2014**, 11, 393-407	8	206
89	Ultrasound-enhanced transdermal delivery: recent advances and future challenges. *Therapeutic Delivery*, **2014**, 5, 843-57	3.8	46
88	Molecular recognition using corona phase complexes made of synthetic polymers adsorbed on carbon nanotubes. *Nature Nanotechnology*, **2013**, 8, 959-68	28.7	205
87	Wetting translucency of graphene. *Nature Materials*, **2013**, 12, 866-9	27	198
86	Computer simulation-molecular-thermodynamic framework to predict the micellization behavior of mixtures of surfactants: application to binary surfactant mixtures. *Journal of Physical Chemistry B*, **2013**, 117, 6430-42	3.4	11
85	Fluorescent penetration enhancers for transdermal applications. *Journal of Controlled Release*, **2012**, 158, 85-92	11.7	14
84	A physical mechanism to explain the delivery of chemical penetration enhancers into skin during transdermal sonophoresis - Insight into the observed synergism. *Journal of Controlled Release*, **2012** , 158, 250-60	11.7	49
83	Molecular perspective on diazonium adsorption for controllable functionalization of single-walled carbon nanotubes in aqueous surfactant solutions. *Journal of the American Chemical Society*, **2012**, 134, 8194-204	16.4	26
82	Understanding the pH-dependent behavior of graphene oxide aqueous solutions: a comparative experimental and molecular dynamics simulation study. *Langmuir*, **2012**, 28, 235-41	4	442
81	Rapid skin permeabilization by the simultaneous application of dual-frequency, high-intensity ultrasound. *Journal of Controlled Release*, **2012**, 163, 154-60	11.7	43
80	Breakdown in the wetting transparency of graphene. *Physical Review Letters*, **2012**, 109, 176101	7.4	268
79	Role of adsorbed surfactant in the reaction of aryl diazonium salts with single-walled carbon nanotubes. *Langmuir*, **2012**, 28, 1309-21	4	33
78	Molecular insights into the surface morphology, layering structure, and aggregation kinetics of surfactant-stabilized graphene dispersions. *Journal of the American Chemical Society*, **2011**, 133, 12810-23	16.4	128
77	Experimental and molecular dynamics investigation into the amphiphilic nature of sulforhodamine B. *Journal of Physical Chemistry B*, **2011**, 115, 1394-402	3.4	18

76	Ultrasound-mediated transdermal drug delivery: mechanisms, scope, and emerging trends. *Journal of Controlled Release*, **2011**, 152, 330-48	11.7	260
75	Transport pathways and enhancement mechanisms within localized and non-localized transport regions in skin treated with low-frequency sonophoresis and sodium lauryl sulfate. *Journal of Pharmaceutical Sciences*, **2011**, 100, 512-29	3.9	49
74	Application of the aqueous porous pathway model to quantify the effect of sodium lauryl sulfate on ultrasound-induced skin structural perturbation. *Journal of Pharmaceutical Sciences*, **2011**, 100, 1387-97	3.9	21
73	Enhancing the transdermal delivery of rigid nanoparticles using the simultaneous application of ultrasound and sodium lauryl sulfate. *Biomaterials*, **2011**, 32, 933-41	15.6	89
72	Understanding the stabilization of liquid-phase-exfoliated graphene in polar solvents: molecular dynamics simulations and kinetic theory of colloid aggregation. *Journal of the American Chemical Society*, **2010**, 132, 14638-48	16.4	234
71	Role of the bile salt surfactant sodium cholate in enhancing the aqueous dispersion stability of single-walled carbon nanotubes: a molecular dynamics simulation study. *Journal of Physical Chemistry B*, **2010**, 114, 15616-25	3.4	117
70	Low-frequency sonophoresis: application to the transdermal delivery of macromolecules and hydrophilic drugs. *Expert Opinion on Drug Delivery*, **2010**, 7, 1415-32	8	104
69	Effects of ultrasound and sodium lauryl sulfate on the transdermal delivery of hydrophilic permeants: Comparative in vitro studies with full-thickness and split-thickness pig and human skin. *Journal of Controlled Release*, **2010**, 145, 26-32	11.7	64
68	Possible existence of convective currents in surfactant bulk solution in experimental pendant-bubble dynamic surface tension measurements. *Langmuir*, **2009**, 25, 1434-44	4	9
67	New methodology to determine equilibrium surfactant adsorption properties from experimental dynamic surface tension data. *Langmuir*, **2009**, 25, 6191-202	4	10
66	The role of sodium dodecyl sulfate (SDS) micelles in inducing skin barrier perturbation in the presence of glycerol. *International Journal of Cosmetic Science*, **2008**, 30, 73-73	2.7	6
65	Why is sodium cocoyl isethionate (SCI) mild to the skin barrier? An in vitro investigation based on the relative sizes of the SCI micelles and the skin aqueous pores. *International Journal of Cosmetic Science*, **2008**, 30, 310-310	2.7	1
64	Application of computer simulation free-energy methods to compute the free energy of micellization as a function of micelle composition. 1. Theory. *Journal of Physical Chemistry B*, **2008**, 112, 1634-40	3.4	9
63	Evaluation of hydrophilic permeant transport parameters in the localized and non-localized transport regions of skin treated simultaneously with low-frequency ultrasound and sodium lauryl sulfate. *Journal of Pharmaceutical Sciences*, **2008**, 97, 906-18	3.9	24
62	Heterogeneity in skin treated with low-frequency ultrasound. *Journal of Pharmaceutical Sciences*, **2008**, 97, 4119-28	3.9	21
61	Visualization and quantification of skin barrier perturbation induced by surfactant-humectant systems using two-photon fluorescence microscopy. *Journal of Cosmetic Science*, **2008**, 59, 263-89	0.7	13
60	Evaluation of the porosity, the tortuosity, and the hindrance factor for the transdermal delivery of hydrophilic permeants in the context of the aqueous pore pathway hypothesis using dual-radiolabeled permeability experiments. *Journal of Pharmaceutical Sciences*, **2007**, 96, 3263-82	3.9	31
59	Dual-channel two-photon microscopy study of transdermal transport in skin treated with low-frequency ultrasound and a chemical enhancer. *Journal of Investigative Dermatology*, **2007**, 127, 2832-46	4.3	49

58	Quantifying the hydrophobic effect. 1. A computer simulation-molecular-thermodynamic model for the self-assembly of hydrophobic and amphiphilic solutes in aqueous solution. *Journal of Physical Chemistry B*, **2007**, 111, 1025-44	3.4	34
57	The role of sodium dodecyl sulfate (SDS) micelles in inducing skin barrier perturbation in the presence of glycerol. *Journal of Cosmetic Science*, **2007**, 58, 109-33	0.7	24
56	Why is sodium cocoyl isethionate (SCI) mild to the skin barrier? - An in vitro investigation based on the relative sizes of the SCI micelles and the skin aqueous pores. *Journal of Cosmetic Science*, **2007**, 58, 229-44	0.7	6
55	Ranking of aqueous surfactant-humectant systems based on an analysis of in vitro and in vivo skin barrier perturbation measurements. *Journal of Cosmetic Science*, **2007**, 58, 599-620	0.7	5
54	Affinity-tagged green fluorescent protein (GFP) extraction from a clarified E. coli cell lysate using a two-phase aqueous micellar system. *Biotechnology and Bioengineering*, **2006**, 93, 998-1004	4.9	29
53	Complementary use of simulations and molecular-thermodynamic theory to model micellization. *Langmuir*, **2006**, 22, 1500-13	4	52
52	Short-time behavior of mixed diffusion-barrier controlled adsorption. *Journal of Colloid and Interface Science*, **2006**, 296, 442-57	9.3	15
51	New methodology to determine the rate-limiting adsorption kinetics mechanism from experimental dynamic surface tension data. *Journal of Colloid and Interface Science*, **2006**, 302, 1-19	9.3	13
50	Affinity-enhanced protein partitioning in decyl beta-D-glucopyranoside two-phase aqueous micellar systems. *Biotechnology and Bioengineering*, **2005**, 89, 381-92	4.9	34
49	Protein partitioning driven by excluded-volume interactions in an aqueous nonionic micellar-gel system. *Biotechnology and Bioengineering*, **2004**, 87, 695-703	4.9	8
48	Experimental demonstration of the existence of highly permeable localized transport regions in low-frequency sonophoresis. *Journal of Pharmaceutical Sciences*, **2004**, 93, 2733-45	3.9	36
47	Effect of Counterion Binding on Micellar Solution Behavior: 2. Prediction of Micellar Solution Properties of Ionic Surfactant−Electrolyte Systems. *Langmuir*, **2003**, 19, 9946-9961	4	115
46	Glucose-6-phosphate dehydrogenase partitioning in two-phase aqueous mixed (nonionic/cationic) micellar systems. *Biotechnology and Bioengineering*, **2003**, 82, 445-56	4.9	40
45	Visualization of oleic acid-induced transdermal diffusion pathways using two-photon fluorescence microscopy. *Journal of Investigative Dermatology*, **2003**, 120, 448-55	4.3	64
44	Challenging the surfactant monomer skin penetration model: penetration of sodium dodecyl sulfate micelles into the epidermis. *Journal of Cosmetic Science*, **2003**, 54, 29-46	0.7	42
43	Effects of low-frequency ultrasound on the transdermal permeation of mannitol: comparative studies with in vivo and in vitro skin. *Journal of Pharmaceutical Sciences*, **2002**, 91, 1776-94	3.9	42
42	Prediction of steady-state skin permeabilities of polar and nonpolar permeants across excised pig skin based on measurements of transient diffusion: characterization of hydration effects on the skin porous pathway. *Journal of Pharmaceutical Sciences*, **2002**, 91, 1891-907	3.9	37
41	Understanding viral partitioning in two-phase aqueous nonionic micellar systems: 1. Role of attractive interactions between viruses and micelles. *Biotechnology and Bioengineering*, **2002**, 78, 190-202	4.9	29

40	Understanding viral partitioning in two-phase aqueous nonionic micellar systems: 2. Effect of entrained micelle-poor domains. *Biotechnology and Bioengineering*, **2002**, 78, 203-16	4.9	36
39	Separating lysozyme from bacteriophage P22 in two-phase aqueous micellar systems. *Biotechnology and Bioengineering*, **2002**, 80, 233-6	4.9	36
38	An investigation of the role of cavitation in low-frequency ultrasound-mediated transdermal drug transport. *Pharmaceutical Research*, **2002**, 19, 1160-9	4.5	122
37	Theoretical and Experimental Investigation of the Equilibrium Oil–Water Interfacial Tensions of Solutions Containing Surfactant Mixtures. *Langmuir*, **2002**, 18, 365-376	4	71
36	Fundamental Investigation of Protein Partitioning in Two-Phase Aqueous Mixed (Nonionic/Ionic) Micellar Systems. *Langmuir*, **2002**, 18, 3047-3057	4	60
35	Challenging the surfactant monomer skin penetration model: penetration of sodium dodecyl sulfate (SDS) micelles into the epidermis. *Journal of Cosmetic Science*, **2002**, 53, 302-3	0.7	
34	In vitro visualization and quantification of oleic acid induced changes in transdermal transport using two-photon fluorescence microscopy. *Journal of Investigative Dermatology*, **2001**, 117, 16-25	4.3	74
33	Theoretical description of transdermal transport of hydrophilic permeants: application to low-frequency sonophoresis. *Journal of Pharmaceutical Sciences*, **2001**, 90, 545-68	3.9	105
32	Molecular-Thermodynamic Prediction of Critical Micelle Concentrations of Commercial Surfactants. *Langmuir*, **2001**, 17, 5801-5812	4	34
31	Effects of Multisolute Steric Interactions on Membrane Partition Coefficients. *Journal of Colloid and Interface Science*, **2000**, 226, 112-122	9.3	47
30	Synergistic effect of low-frequency ultrasound and sodium lauryl sulfate on transdermal transport. *Journal of Pharmaceutical Sciences*, **2000**, 89, 892-900	3.9	98
29	Prediction of Equilibrium Surface Tension and Surface Adsorption of Aqueous Surfactant Mixtures Containing Zwitterionic Surfactants. *Langmuir*, **2000**, 16, 7640-7654	4	62
28	Thermodynamic prediction of active ingredient loading in polymeric microparticles. *Journal of Controlled Release*, **1999**, 60, 77-100	11.7	22
27	Prediction of Equilibrium Surface Tension and Surface Adsorption of Aqueous Surfactant Mixtures Containing Ionic Surfactants. *Langmuir*, **1999**, 15, 8832-8848	4	99
26	Separation of proteins and viruses using two-phase aqueous micellar systems. *Biomedical Applications*, **1998**, 711, 127-38		117
25	Measurement and Prediction of Ionic/Nonionic Mixed Micelle Formation and Growth. *Langmuir*, **1998**, 14, 7166-7182	4	199
24	Predicting Micellar Solution Properties of Binary Surfactant Mixtures. *Langmuir*, **1998**, 14, 1618-1636	4	253
23	Statistical-Thermodynamic Framework to Model Nonionic Micellar Solutions. *Langmuir*, **1997**, 13, 5258-5275		65

22	A Liquid-State Theory Approach to Modeling Solute Partitioning in Phase-Separated Solutions. *Industrial & Engineering Chemistry Research*, **1996**, 35, 3032-3043	3.9	21
21	Molecular-Thermodynamic Modeling of Mixed Cationic/Anionic Vesicles. *Langmuir*, **1996**, 12, 3802-3818	4	89
20	Transdermal drug delivery using low-frequency sonophoresis. *Pharmaceutical Research*, **1996**, 13, 411-20	4.5	274
19	Synergistic effects of chemical enhancers and therapeutic ultrasound on transdermal drug delivery. *Journal of Pharmaceutical Sciences*, **1996**, 85, 670-9	3.9	107
18	Application of integral equation theories to predict the structure of diatomic fluids. *Journal of Chemical Physics*, **1995**, 102, 4203-4216	3.9	31
17	Analytical solution of the proper integral equations for interaction site fluids. *Journal of Chemical Physics*, **1995**, 103, 1229-1231	3.9	5
16	Application of integral equation theories to predict the structure, thermodynamics, and phase behavior of water. *Journal of Chemical Physics*, **1995**, 102, 5427-5437	3.9	60
15	Development of User-Friendly Computer Programs To Predict Solution Properties of Single and Mixed Surfactant Systems. *Industrial & Engineering Chemistry Research*, **1995**, 34, 4150-4160	3.9	28
14	Integral equations for interaction site fluids: The influence of connectivity constraints and auxiliary sites. *Journal of Chemical Physics*, **1995**, 102, 5460-5470	3.9	5
13	Analytical solutions of the proper integral equations for interaction site fluids: Molecules composed of hard-sphere interaction sites. *Journal of Chemical Physics*, **1995**, 103, 7086-7097	3.9	4
12	A mechanistic study of ultrasonically-enhanced transdermal drug delivery. *Journal of Pharmaceutical Sciences*, **1995**, 84, 697-706	3.9	249
11	Salt effects on intramicellar interactions and micellization of nonionic surfactants in aqueous solutions. *Langmuir*, **1994**, 10, 109-121	4	99
10	Proper integral equations for interaction-site fluids: Exact free-energy expressions. *Journal of Chemical Physics*, **1994**, 100, 3002-3012	3.9	12
9	Molecular Thermodynamic Theory of Mixed Micellar Solutions. *ACS Symposium Series*, **1992**, 96-113	0.4	15
8	Protein partitioning in two-phase aqueous polymer systems. 2. On the free energy of mixing globular colloids and flexible polymers. *Macromolecules*, **1992**, 25, 3917-3931	5.5	34
7	Protein partitioning in two-phase aqueous polymer systems. 1. Novel physical pictures and a scaling thermodynamic formulation. *Macromolecules*, **1991**, 24, 4334-4348	5.5	65
6	The effect of salt identity and concentration on liquid liquid phase separation in aqueous micellar solutions of C8-lecithin. *Journal of Chemical Physics*, **1990**, 92, 1956-1962	3.9	20
5	Molecular-thermodynamic approach to predict micellization, phase behavior and phase separation of micellar solutions. I. Application to nonionic surfactants. *Journal of Chemical Physics*, **1990**, 92, 3710-3724	3.9	299

4	Molecular-Thermodynamic Approach to Predict Micellar Solution Properties. *Materials Research Society Symposia Proceedings*, **1989**, 177, 129		3
3	Theory of thermodynamic properties and phase separation of micellar solutions with lower consolute points. *Journal of Chemical Physics*, **1986**, 84, 4558-4562	3.9	41
2	Phenomenological theory of equilibrium thermodynamic properties and phase separation of micellar solutions. *Journal of Chemical Physics*, **1986**, 85, 7268-7288	3.9	239
1	Theory of phase separation in micellar solutions. *Physical Review Letters*, **1985**, 54, 955	7.4	91