Anil Kumar Mehrotra

List of Publications by Year
in descending order

133 papers	4,165 citations	94381 37 h-index	133188 59 g-index
135 all docs	135 docs citations	135 times ranked	2090 citing authors

#	Article	IF	Citations
1	Viscosity: A critical review of practical predictive and correlative methods. Canadian Journal of Chemical Engineering, 1995, 73, 3-40.	0.9	176
2	Solubilities of carbon dioxide in water and 1 wt. % sodium chloride solution at pressures up to 10 MPa and temperatures from 80 to 200.degree.C. Journal of Chemical & Engineering Data, 1989, 34, 355-360.	1.0	172
3	Diffusivity of CO₂, CH₄, C₂H₆ and N₂ in athabasca bitumen. Canadian Journal of Chemical Engineering, 2002, 80, 116-125.	0.9	161
4	Viscosity of compressed athabasca bitumen. Canadian Journal of Chemical Engineering, 1986, 64, 844-847.	0.9	154
5	Experimental Measurement of Gas Diffusivity in Bitumen:Â Results for Carbon Dioxide. Industrial & Engineering Chemistry Research, 2000, 39, 1080-1087.	1.8	146
6	Axial dispersion in the three-dimensional mixing of particles in a rotating drum reactor. Chemical Engineering Science, 2003, 58, 401-415.	1.9	125
7	Development of Graphical Methods for Estimating the Diffusivity Coefficient of Gases in Bitumen from Pressure-Decay Data. Energy & Fuels, 2005, 19, 2041-2049.	2.5	124
8	A review of practical calculation methods for the viscosity of liquid hydrocarbons and their mixtures. Fluid Phase Equilibria, 1996, 117, 344-355.	1.4	117
9	Gas Solubility, Viscosity And Density Measurements For Athabasca Bitumen. Journal of Canadian Petroleum Technology, 1982, 21, .	2.3	116
10	Properties of cold lake bitumen saturated with pure gases and gas mixtures. Canadian Journal of Chemical Engineering, 1988, 66, 656-665.	0.9	99
11	Heat-Transfer Analogy for Wax Deposition from Paraffinic Mixtures. Industrial & Engineering Chemistry Research, 2004, 43, 791-803.	1.8	78
12	An inverse solution methodology for estimating the diffusion coefficient of gases in Athabasca bitumen from pressure-decay data. Journal of Petroleum Science and Engineering, 2006, 53, 189-202.	2.1	75
13	Solids Deposition during â€œCold Flowâ€•of Waxâˆ’Solvent Mixtures in a Flow-loop Apparatus with Heat Transfer. Energy & Fuels, 2009, 23, 3184-3194.	2.5	70
14	Correlations For Properties of Bitumen Saturated With CO2 , CH4 And N2 , And Experiments With Combustion Gas Mixtures. Journal of Canadian Petroleum Technology, 1982, 21, .	2.3	67
15	Measurement of asphaltene particle size distributions in crude oils diluted with n-heptane. Industrial & Engineering Chemistry Research, 1993, 32, 955-959.	1.8	65
16	Alkaline hydrothermal conversion of cellulose to bio-oil: Influence of alkalinity on reaction pathway change. Bioresource Technology, 2011, 102, 6605-6610.	4.8	64
17	Effects of Temperature and Pressure on Asphaltene Particle Size Distributions in Crude Oils Diluted with n-Pentane. Industrial & Engineering Chemistry Research, 1994, 33, 1324-1330.	1.8	60
18	Measurement and Prediction of the Phase Behavior of Waxâˆ’Solvent Mixtures:Â Significance of the WaxDisappearance Temperature. Industrial & Engineering Chemistry Research, 2004, 43, 3451-3461.	1.8	56

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19	A high-temperature experimental and modeling study of homogeneous gas-phase COS reactions applied to Claus plants. Chemical Engineering Science, 1999, 54, 2999-3006.	1.9	53
20	Viscosity of compressed cold lake bitumen. Canadian Journal of Chemical Engineering, 1987, 65, 672-675.	0.9	52
21	On reaction kinetics for the thermal decomposition of hydrogen sulfide. AIChE Journal, 1999, 45, 383-389.	1.8	51
22	Deposition under Turbulent Flow of Waxâˆ'Solvent Mixtures in a Bench-Scale Flow-Loop Apparatus with Heat Transferâ€. Energy & Fuels, 2007, 21, 1263-1276.	2.5	50
23	Generalized one-parameter viscosity equation for light and medium liquid hydrocarbons. Industrial & Engineering Chemistry Research, 1991, 30, 1367-1372.	1.8	49
24	The movement of solids through flighted rotating drums. Part i: Model formulation. Canadian Journal of Chemical Engineering, 1993, 71, 337-346.	0.9	47
25	Solids Deposition from Multicomponent Waxâˆ'Solvent Mixtures in a Benchscale Flow-Loop Apparatus with Heat Transferâ€. Energy & Fuels, 2005, 19, 1387-1398.	2.5	47
26	Modeling the Effect of Shear Stress on Deposition from â€œWaxyâ€•Mixtures under Laminar Flow with Heat Transferâ€. Energy & Fuels, 2007, 21, 1277-1286.	2.5	46
27	Deposition from Waxâˆ'Solvent Mixtures under Turbulent Flow: Effects of Shear Rate and Time on Deposit Properties. Energy & Fuels, 2009, 23, 1299-1310.	2.5	46
28	Modeling of Deposit Formation from â€œWaxyâ€•Mixtures via Moving Boundary Formulation:â€‰ Radial Heat Transfer under Static and Laminar Flow Conditions. Industrial & Engineering Chemistry Research, 2005, 44, 6948-6962.	1.8	45
29	A generalized viscosity equation for pure heavy hydrocarbons. Industrial & Engineering Chemistry Research, 1991, 30, 420-427.	1.8	44
30	Modeling the effects of temperature, pressure, and composition on the viscosity of crude oil mixtures. Industrial & Engineering Chemistry Research, 1990, 29, 1574-1578.	1.8	42
31	Thermal behaviour of polymorphic n-alkanes: effect of cooling rate on the major transition temperatures. Fuel, 1995, 74, 96-101.	3.4	42
32	A steady-state heat-transfer model for solids deposition from waxy mixtures in a pipeline. Fuel, 2014, 137, 346-359.	3.4	42
33	Development of mixing rules for predicting the viscosity of bitumen and its fractions blended with toluene. Canadian Journal of Chemical Engineering, 1990, 68, 839-848.	0.9	41
34	Effect of cooling rate on the wax precipitation temperature of â€œwaxyâ€•mixtures. Fuel, 2013, 103, 1144-1147.	3.4	41
35	Viscosity prediction of Athabasca bitumen using the extended principle of corresponding states. Industrial & Engineering Chemistry Research, 1987, 26, 2290-2298.	1.8	39
36	Viscosity of cold lake bitumen and its fractions. Canadian Journal of Chemical Engineering, 1989, 67, 1004-1009.	0.9	39

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37	Non-isothermal crystallization kinetics of n-paraffins with chain lengths between thirty and fifty. Thermochimica Acta, 1992, 211, 137-153.	1.2	38
38	Liquid-solid-solid thermal behaviour of n-C44H90 + n-C50H102 and n-C25H52 + n-C28H58 paraffinic binary mixtures. Fluid Phase Equilibria, 1995, 111, 253-272.	1.4	38
39	The fate of methane in a claus plant reaction furnace. Canadian Journal of Chemical Engineering, 2001, 79, 482-490.	0.9	38
40	Study of thin biocovers (TBC) for oxidizing uncaptured methane emissions in bioreactor landfills. Waste Management, 2008, 28, 1364-1374.	3.7	38
41	Liquidâ€"solid phase transformation of C16H34, C28H58 and C41H84 and their binary and ternary mixtures. Thermochimica Acta, 2000, 356, 27-38.	1.2	36
42	Properties Of Peace River Bitumen Saturated With Field Gas Mixtures. Journal of Canadian Petroleum Technology, 1989, 28, .	2.3	35
43	Petroleum and Coal. Analytical Chemistry, 2001, 73, 2791-2804.	3.2	35
44	COS-Forming Reaction between CO and Sulfur:Â A High-Temperature Intrinsic Kinetics Study. Industrial & Engineering Chemistry Research, 1998, 37, 4609-4616.	1.8	34
45	Petroleum and Coal. Analytical Chemistry, 1999, 71, 81-108.	3.2	34
46	Solids Deposition from Two-Phase Waxâ€"Solventâ€"Water â€œWaxyâ€• Mixtures under Turbulent Flow. Energy & Fuels, 2013, 27, 1914-1925.	2.5	34
47	Solids Deposition from Waxâ€"Solventâ€"Water â€œWaxyâ€• Mixtures Using a Cold Finger Apparatus. Energy & Fuels, 2015, 29, 501-511.	2.5	33
48	Phase Transformation and Rheological Behaviour of Highly Paraffinic â€œWaxyâ€• Mixtures. Canadian Journal of Chemical Engineering, 2004, 82, 162-174.	0.9	32
49	Measurement of the Liquidâˆ'Deposit Interface Temperature during Solids Deposition from Waxâˆ'Solvent Mixtures under Static Cooling Conditions. Energy & Fuels, 2008, 22, 1174-1182.	2.5	30
50	Deposition from â€œWaxyâ€• Mixtures under Turbulent Flow in Pipelines: Inclusion of a Viscoplastic Deformation Model for Deposit Aging. Energy & Fuels, 2010, 24, 2240-2248.	2.5	30
51	Modified shape factors for improved viscosity predictions using corresponding states. Canadian Journal of Chemical Engineering, 1991, 69, 1213-1219.	0.9	29
52	Modeling reaction quench times in the waste heat boiler of a Claus plant. Industrial & Engineering Chemistry Research, 1994, 33, 7-13.	1.8	28
53	Measurement of the Liquidâˆ'Deposit Interface Temperature during Solids Deposition from Waxâˆ'Solvent Mixtures under Sheared Cooling. Energy & Fuels, 2008, 22, 4039-4048.	2.5	28
54	Measurement of asphaltene agglomeration from cold lake bitumen diluted with n-alkanes. Canadian Journal of Chemical Engineering, 1993, 71, 699-703.	0.9	27

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55	Modeling the Effect of Shear Stress on the Composition and Growth of the Deposit Layer from â€œWaxyâ€•Mixtures under Laminar Flow in a Pipeline. Energy & Fuels, 2008, 22, 3237-3248.	2.5	27
56	Modeling of Solids Deposition from â€œWaxyâ€•Mixtures in â€œHot Flowâ€•and â€œCold Flowâ€•Regimes in a Pipeline Operating under Turbulent Flow. Energy & Fuels, 2013, 27, 6477-6490.	2.5	27
57	Modeling of Deposition from â€œWaxyâ€•Mixtures in a Pipeline under Laminar Flow Conditions via Moving Boundary Formulation. Industrial & Engineering Chemistry Research, 2006, 45, 8728-8737.	1.8	26
58	Correlation and prediction of gas solubility in cold lake bitumen. Canadian Journal of Chemical Engineering, 1988, 66, 666-670.	0.9	25
59	Vâ€Lâ€S multiphase equilibrium in bitumenâ€diluent systems. Canadian Journal of Chemical Engineering, 1988, 66, 870-878.	0.9	24
60	Metagenomic Sequencing of Microbial Communities from Brackish Water of Pangong Lake of the Northwest Indian Himalayas. Genome Announcements, 2017, 5, .	0.8	24
61	Experiments and modeling for investigating the effect of suspended wax crystals on deposition from 'waxy' mixtures under cold flow conditions. Fuel, 2019, 243, 610-621.	3.4	24
62	High-temperature chlorination of coal ash in a fluidized bed. 1. Recovery of aluminum. Industrial & Engineering Chemistry Process Design and Development, 1982, 21, 37-44.	0.6	22
63	In-Situ Monitoring of Paraffin Wax Crystal Formation and Growth. Crystal Growth and Design, 2019, 19, 2830-2837.	1.4	22
64	A review of heatâ€transfer mechanism for solid deposition from â€œwaxyâ€•or paraffinic mixtures. Canadian Journal of Chemical Engineering, 2020, 98, 2463-2488.	0.9	22
65	Unified entry length for newtonian and powerâ€“law fluids in laminar pipe flow. Canadian Journal of Chemical Engineering, 1990, 68, 529-533.	0.9	21
66	Non-isothermal crystallization kinetics of n-paraffins: comparison of even-numbered and odd-numbered normal alkanes. Thermochimica Acta, 1993, 215, 197-209.	1.2	19
67	Field-scale operation of methane biofiltration systems to mitigate point source methane emissions. Environmental Pollution, 2011, 159, 1715-1720.	3.7	19
68	Characterization Of Athabasca Bitumen For Gas Solubility Calculations. Journal of Canadian Petroleum Technology, 1988, 27, .	2.3	16
69	Mixing rules for predicting the viscosity of bitumens saturated with pure gases. Canadian Journal of Chemical Engineering, 1992, 70, 165-172.	0.9	16
70	Correlation and prediction of the viscosity of pure hydrocarbons. Canadian Journal of Chemical Engineering, 1994, 72, 554-557.	0.9	16
71	Viscosity prediction from a modified square well intermolecular potential model. Fluid Phase Equilibria, 1996, 117, 378-385.	1.4	16
72	Achieving cold flow conditions for â€˜waxyâ€™ mixtures with minimum solid deposition. Fuel, 2019, 235, 1092-1099.	3.4	16

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73	Laminar startâ€up flow in short pipe lengths. Canadian Journal of Chemical Engineering, 1989, 67, 883-888.	0.9	15
74	Non-isothermal crystallization kinetics of binary mixtures of n-alkanes: ideal eutectic and isomorphous systems. Fuel, 1996, 75, 500-508.	3.4	15
75	Design of a laboratory experiment on heat transfer in an agitated vessel. Education for Chemical Engineers, 2011, 6, e83-e89.	2.8	15
76	Prediction of mass diffusivity of CO₂ into bitumen. Canadian Journal of Chemical Engineering, 1987, 65, 826-832.	0.9	14
77	Modelling a circulating fluidized bed riser reactor with gasâ€"solids downflow at the wall. Canadian Journal of Chemical Engineering, 1997, 75, 317-326.	0.9	14
78	Validating Heat-Transfer-Based Modeling Approach for Wax Deposition from Paraffinic Mixtures: An Analogy with Ice Deposition. Energy & Fuels, 2019, 33, 1859-1868.	2.5	14
79	Including Radiative Heat Transfer and Reaction Quenching in Modeling a Claus Plant Waste Heat Boiler. Industrial & Engineering Chemistry Research, 1994, 33, 2651-2655.	1.8	13
80	The movement of solids through flighted rotating drums. Part II solidsâ€gas interaction and model validation. Canadian Journal of Chemical Engineering, 1994, 72, 240-248.	0.9	13
81	Exergy Analysis of Direct and Indirect Combustion of Methanol by Utilizing Solar Energy or Waste Heat. Energy & Fuels, 2009, 23, 1723-1733.	2.5	13
82	Experimental determination of gas diffusivity in liquidsâ€"A review. Canadian Journal of Chemical Engineering, 2021, 99, 1239-1267.	0.9	13
83	Metal recovery from coal ash via chlorination â€" A thermodynamic study. Canadian Journal of Chemical Engineering, 1979, 57, 225-232.	0.9	12
84	Calculation Of Gas Solubility In Wabasca Bitumen. Journal of Canadian Petroleum Technology, 1989, 28, .	2.3	12
85	Viscosity data and correlation for mixtures of bitumen fractions. Fuel Processing Technology, 1990, 26, 25-37.	3.7	12
86	Hydrodynamic and kinetic modelling of circulating fluidized bed reactors applied to a modified Claus plant. Chemical Engineering Science, 1996, 51, 5251-5262.	1.9	12
87	Direct formation of gasoline hydrocarbons from cellulose by hydrothermal conversion with in situ hydrogen. Biomass and Bioenergy, 2012, 47, 228-239.	2.9	12
88	Comments on: Wax deposition of Bombay high crude oil under flowing conditions. Fuel, 1990, 69, 1575-1576.	3.4	11
89	Modeling temperature and composition dependence for the viscosity of diluted bitumens. Journal of Petroleum Science and Engineering, 1991, 5, 261-272.	2.1	11
90	Phase behaviour of CO₂ â€bitumen fractions. Canadian Journal of Chemical Engineering, 1992, 70, 159-164.	0.9	11

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91	A generalized viscosity equation for liquid hydrocarbons: Application to oil-sand bitumens. Fluid Phase Equilibria, 1992, 75, 257-268.	1.4	11
92	Re-examination of a proposed model for nonisothermal crystallization kinetics. Polymer Engineering and Science, 1995, 35, 170-172.	1.5	11
93	Thermal Decomposition Of Carbonyl Sulfide At Temperatures Encountered In The Front End Of Modified Claus Plants. Chemical Engineering Communications, 2005, 192, 370-385.	1.5	11
94	Effects of shear rate and time on deposit composition in the cold flow regime under laminar flow conditions. Fuel, 2020, 259, 116238.	3.4	11
95	Viscosity Prediction of Nonpolar, Polar, and Associating Fluids over a WidePÏ•TRange from a Modified Square Well Intermolecular Potential Model. Industrial & Engineering Chemistry Research, 1998, 37, 652-659.	1.8	10
96	Use of new reaction kinetics for COS formation to achieve reduced sulfur emissions from claus plants. Canadian Journal of Chemical Engineering, 1999, 77, 392-398.	0.9	10
97	Investigation of wax deposit â€˜sloughingâ€™ from paraffinic mixtures in pipe flow. Canadian Journal of Chemical Engineering, 2018, 96, 377-389.	0.9	10
98	High-temperature chlorination of coal ash in a fluidized bed. 2. Recovery of iron, silicon, and titanium. Industrial & Engineering Chemistry Process Design and Development, 1982, 21, 44-50.	0.6	9
99	A study of interactions between soil fractions and PAH compounds in thermal desorption of contaminated soils. Canadian Journal of Chemical Engineering, 1995, 73, 844-853.	0.9	9
100	Viscosity prediction from a modified square well intermolecular potential model: polar and associating compounds. Fluid Phase Equilibria, 1997, 137, 275-287.	1.4	9
101	Comments on â€œThe Effect of Operating Temperatures on Wax Depositionâ€•by Huang et al.. Energy & Fuels, 2012, 26, 3963-3966.	2.5	9
102	Deposition from waxy mixtures in a flowâ€loop apparatus under turbulent conditions: Investigating the effect of suspended wax crystals in cold flow regime. Canadian Journal of Chemical Engineering, 2019, 97, 2740-2751.	0.9	9
103	Air stripping of hydrocarbonâ€contaminated soils: Investigation of mass transfer effects. Canadian Journal of Chemical Engineering, 1995, 73, 196-203.	0.9	8
104	A novel laboratory experiment for demonstrating boiling heat transfer. Education for Chemical Engineers, 2012, 7, e210-e218.	2.8	8
105	Quench time modeling in propane ultrapyrolysis. Canadian Journal of Chemical Engineering, 1989, 67, 608-614.	0.9	7
106	A heat-transfer laboratory experiment with shell-and-tube condenser. Education for Chemical Engineers, 2017, 19, 38-47.	2.8	7
107	Predictions for wax deposition in a pipeline carrying paraffinic or â€˜waxyâ€™ crude oil from the heat-transfer approach. Journal of Pipeline Science and Engineering, 2021, 1, 428-435.	2.4	7
108	A mixing rule approach for predicting the viscosity of CO2-saturated cold lake bitumen and bitumen fractions. Journal of Petroleum Science and Engineering, 1992, 6, 289-299.	2.1	6

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109	Prediction of surface tension of athabasca bitumen. Canadian Journal of Chemical Engineering, 1985, 63, 340-343.	0.9	5
110	Separation of monoclonal IgM antibodies using tangential flow ultrafiltration. Canadian Journal of Chemical Engineering, 1994, 72, 982-990.	0.9	4
111	Subsaturation equilibrium distribution of carbon dioxide between bitumen and water. Fluid Phase Equilibria, 1989, 52, 299-306.	1.4	3
112	Combined thermal-momentum start-up in long pipes. International Journal of Heat and Mass Transfer, 1990, 33, 2051-2053.	2.5	3
113	Petroleum and Coal. Crude Oil and Shale Oil. Analytical Chemistry, 1995, 67, 321-326.	3.2	3
114	An Inverse Solution Methodology for Estimating Diffusivity Coefficient of Gases in Bitumen from Pressure-Decay Data. , 2006, , .		3
115	Modeling the Static Cooling of Waxâ€“Solvent Mixtures in a Cylindrical Vessel. , 2012, , .		3
116	Investigating the gelling behaviour of â€˜waxy' paraffinic mixtures during flow shutdown. Canadian Journal of Chemical Engineering, 2020, 98, 2618-2631.	0.9	3
117	A review of the contributions of <scp>P. Raj Bishnoi</scp> to chemical engineering. Canadian Journal of Chemical Engineering, 2023, 101, 565-582.	0.9	3
118	A perspective on <i>The Canadian Journal of Chemical Engineering</i> commemorating its 100th volume: 1929â€“2021. Canadian Journal of Chemical Engineering, 2022, 100, 1983-2010.	0.9	3
119	Comments on "Solubility of carbon dioxide in tar sand bitumens: experimental determination and modeling". Industrial & Engineering Chemistry Research, 1992, 31, 1422-1423.	1.8	2
120	Model for In Situ Air Stripping of Contaminated Soils: Effects of Hydrocarbon Adsorption. Energy Sources Part A Recovery, Utilization, and Environmental Effects, 1996, 18, 21-36.	0.5	2
121	Modeling The Onset Of Asphaltene Precipitation In Solvent-Diluted Bitumens Using Cubic-Plus-Association Equation Of State. , 2016, , .		2
122	A heatâ€transfer model for tube fouling in the radiant section of onceâ€through steam generators. Canadian Journal of Chemical Engineering, 2021, 99, 789-802.	0.9	2
123	Preface to the special issue honouring <scp>Professor Leo A. Behie</scp>. Canadian Journal of Chemical Engineering, 2021, 99, 2259-2261.	0.9	2
124	Phase equilibria predictions for the CO₂â€H₂Oâ€NaClâ€bitumen system. Canadian Journal of Chemical Engineering, 1990, 68, 498-503.	0.9	1
125	Comments on "Modeling the Viscosity of Middle-East Crude Oil Mixtures". Industrial & Engineering Chemistry Research, 1994, 33, 1410-1411.	1.8	1
126	Measurement of intrinsic rates for homogeneous gasâ€phase reactions at high temperatures. Canadian Journal of Chemical Engineering, 2002, 80, 513-517.	0.9	1

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127	65thCanadian Chemical Engineering Conference: Preface. Canadian Journal of Chemical Engineering, 2016, 94, 2037-2037.	0.9	1
128	Research contributions of Leo A. Behie to chemical and biomedical engineering. Canadian Journal of Chemical Engineering, 2021, 99, 2262.	0.9	1
129	Reply to Andersson and Kristoffersen. Canadian Journal of Chemical Engineering, 1992, 70, 205-206.	0.9	0
130	Reply to Mitschka. Canadian Journal of Chemical Engineering, 1992, 70, 832-832.	0.9	0
131	Modeling reaction quench times in the waste heat boiler of a Claus plant. [Erratum to document cited in CA120:33794]. Industrial & Engineering Chemistry Research, 1994, 33, 1880-1880.	1.8	0
132	Comment on â€œcorrelation and prediction of the viscosity of pure hydrocarbonsâ€, A. K. Mehrotra, Can. J. Chem. Eng. 72, 554â€"557 (1994). Canadian Journal of Chemical Engineering, 1996, 74, 558-559.	0.9	0
133	Comment on: â€œRapid simultaneous evaluation of four parameters of single-component gases in nonvolatile liquids from a single data setâ€, by F. Civan and M.L. Rasmussen, Chemical Engineering Science 64, 5084â€"5092 (2009). Chemical Engineering Science, 2010, 65, 3362.	1.9	0