

Curriculum Vitae

Dr. Anil K. Mehrotra, P.Eng.

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| Name | Dr. Anil K. Mehrotra |
| Date of Birth | January 6, 1951 |
| Present Position | Professor |
| Address | Schulich School of Engineering, Department of Chemical & Petroleum Engineering, University of Calgary, Calgary, T2N 1N4 |
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Education / Qualifications

Bachelor of Engineering (Honours) in Chemical Engineering (1972), with Gold Medal

Birla Institute of Technology & Science, Pilani, Rajasthan, India

Master of Engineering in Environmental Engineering (1975)

Asian Institute of Technology, Bangkok, Thailand

Doctor of Philosophy in Chemical Engineering (1980)

University of Calgary, Calgary, Alberta, Canada

Academic and Other Positions Held

Professor, Department of Chemical and Petroleum Engineering, University of Calgary, Calgary, 1989–present

President, Mehrotra Consulting Limited, Calgary, 1990–2021

Interim Head, Department of Chemical and Petroleum Engineering, University of Calgary, Calgary, 2018-19

Director, Centre for Environmental Engineering Research & Education (CEERE), Schulich School of Engineering, University of Calgary, Calgary, 2002–16

Director, Sustainable Energy Development Program, University of Calgary, 2012-16

Interim Dean, Schulich School of Engineering, University of Calgary, Calgary, 2010-11

Interim Head, Department of Chemical and Petroleum Engineering, University of Calgary, Calgary, 2009

Acting Head, Department of Chemical and Petroleum Engineering, University of Calgary, Calgary, 2000–01

Associate Head (Graduate Studies), Department of Chemical and Petroleum Engineering, University of Calgary, Calgary, 1989–2001

Associate Professor, Department of Chemical and Petroleum Engineering, University of Calgary, Calgary, 1984–89

Assistant Professor, Department of Chemical and Petroleum Engineering, University of Calgary, Calgary, 1981–84

Research Engineer, Department of Chemical Engineering, University of Calgary, Calgary, 1980

Chemical Engineer, Century Rayon, Kalyan (Bombay), India, 1973–74

Chemical Engineer, Buschig Schmitz Ltd., New Delhi, India, 1972

Administrative / Managerial Experience

Conference Chair, CSChE 2023, to be held in Calgary, Alberta (October 29-November 1, 2023)

Treasurer & Officer of the Board of Directors, Canadian Society for Chemical Engineering (CSChE), 2018–21, 2021-23

Secretary-Treasurer & Member of the Executive Council, The Shastri Indo-Canadian Institute (SICI), 2016–18, 2018–20, 2020–21

Interim Head, Department of Chemical and Petroleum Engineering, University of Calgary, Calgary, Alberta, 2018–2019 (14 months)

Director (founding), Centre for Environmental Engineering Research & Education (CEERE), Schulich School of Engineering, University of Calgary, Calgary, Alberta, 2002–16 (171 months / 14+ years)

Director, Interdisciplinary Sustainable Energy Development (MSc Degree) Program (SEDEV), University of Calgary, Alberta, 2012-16 (50 months)

Conference Technical Program Co-Chair, CSChE 2015, Calgary, Alberta (October 3-7, 2015)

Interim Dean, Schulich School of Engineering, University of Calgary, Calgary, AB, 2010-11 (12 months)

Interim Head, Department of Chemical and Petroleum Engineering, University of Calgary, Calgary, Alberta, 2009 (7.5 months)

Acting Head, Department of Chemical and Petroleum Engineering, University of Calgary, Calgary, Alberta, 2000–2001 (12 months)

Associate Head (Graduate Studies), Department of Chemical and Petroleum Engineering, University of Calgary, Calgary, Alberta, 1989–2001 (12+ years)

Areas of Research & Expertise

Chemical Engineering: Thermodynamics, phase behavior & thermophysical properties of heavy crude oils/bitumens; Transportation of waxy crude oil and blends; Heat Transfer; Solid Deposition

Environmental Engineering: Wastewater treatment; Air quality; Energy systems; Exergy analysis; CO₂ and CH₄ gaseous emissions

Industrial / R&D Consulting Provided in the Past

Cenovus Energy (Calgary, AB); Enbridge Canada (Edmonton, AB); Chevron Canada (Calgary, AB); Nova Chemicals Research Centre (Calgary, AB); Lavalin Inc (Calgary, AB); Shell Canada (Calgary, AB); Husky Oil (Calgary, AB); Amoco Canada (Calgary, AB), Petrocorp Exploration (New Zealand), Exxon Chemicals (Houston, TX), Imperial Oil (Sarnia, ON), Canada Revenue Agency (CRA) SR&ED Program (CRA, Canada), Oilphase–DBR, Schlumberger (Edmonton, AB), Nova Chemicals (Sarnia, ON), Altex Energy Ltd (Calgary, AB), Gibson Energy Inc (Calgary, AB).

Professional Certification and Memberships

Professional Engineer, Association of Professional Engineers & Geoscientists of Alberta (APEGA), 1982–present

Treasurer, Canadian Society for Chemical Engineering (CSChE), 2018–21, 2021–23

Fellow, Engineering Institute of Canada (EIC), 2023 (Lifetime)

Fellow, Indian Institute of Chemical Engineers (IChE), 2022 (Lifetime)

Secretary-Treasurer, Shastri Indo-Canadian Institute (SICI), 2016–18, 2018–20, 2020–21

Life Member, Indian Institute of Chemical Engineers (IChE), 2016 (Lifetime)

Academic Examiner, APEGA Board of Examiners, 1996–2013 (16+ years)

Fellow, Engineers Canada, 2009 (Lifetime)

Fellow, Geoscientists Canada, 2013 (Lifetime)

Fellow, Chemical Institute of Canada (CIC), 2001 (Lifetime)

Member, Canadian Society for Chemical Engineering (CSChE), 1981–present

Awards, Recognitions & Distinctions

Fellowship of the Engineering Institute of Canada (EIC), 2023
Fellowship of the Indian Institute of Chemical Engineers (IIChE), 2022
The Jules Stachiewicz Medal (Canadian Society for Chemical Engineering), 2022
Research Achievement Award (Schulich School of Engineering, University of Calgary), 2017
Outstanding Teaching Performance (Schulich School of Engineering, University of Calgary), 2016
Service Recognition Award (Department of Chemical & Petroleum Engineering, Schulich School of Engineering, University of Calgary), 2016
Outstanding Teaching Performance (Schulich School of Engineering, University of Calgary), 2015
Professor of the Year Award, Graduation Banquet Teaching Excellence Award (University of Calgary, Engineering Students' Society), 2015
Outstanding Teaching Performance (Schulich School of Engineering, University of Calgary), 2014
Outstanding Teacher Award (Schulich School of Engineering, University of Calgary), 2013
Departmental Teaching Excellence Award (Schulich School of Engineering, University of Calgary), 2013
Teaching Excellence Award (University of Calgary Students' Union), 2013
Fellow of Geoscientists Canada (Geoscientists Canada & APEGA), 2013
Excellence in Teaching Award (University of Calgary, Engineering Students' Society), 2012
Mentoring Excellence Award (Schulich School of Engineering, University of Calgary), 2012
Excellence in Teaching Award (University of Calgary, Engineering Students' Society), 2010
The Environment and Sustainability Award (an APEGA Summit Award, co-recipient with Dr. J.P.A. Hettiaratchi), 2009
Fellow of Engineers Canada (Engineers Canada & APEGA), 2009
Excellence in Teaching Award (University of Calgary, Engineering Students' Society), 2007
The Excellence in Professional/Occupation Field Award (India-Canada Association of Calgary, INCA), 2007
The 2005 Environmental Achievement Award (The City of Calgary, awarded to CEERE), 2006
Twenty-Five Years of Service Pin Award (University of Calgary), 2006
L.C. Charlesworth Professional Service Award (an APEGA Summit Award), 2006
Excellence in Teaching Award (University of Calgary, Engineering Students' Society), 2006
Champion of the Schulich School of Engineering Award (University of Calgary), 2006
Voluntary Service Award (APEGA), 2003
Service Excellence Award (Faculty of Engineering, University of Calgary), 2002
Excellence in Education Award (an APEGA Summit Award), 2000
Fellowship of the Chemical Institute of Canada (FCIC), elected in 2000
Service Excellence Award (Faculty of Engineering, University of Calgary), 1999
Superior Teacher Award (University of Calgary, Engineering Students' Society), 1998
Teaching Excellence Award (Faculty of Engineering, University of Calgary), 1997
Teaching Excellence Award (University of Calgary Students' Union), 1988
The Izaak Walton Killam Memorial Doctoral Scholarship (University of Calgary), 1977–1980
The Government of the Netherlands Postgraduate Scholarship (AIT), 1974–1975
Gold Medal for First Rank in B.E. (Hons.), Chemical Engineering (BITS, Pilani), 1972

Graduate Students Supervised

- Rao, Saheli, PhD, 2018-present, OTSG boiler water treatment
- Sivagnanam, Mohan, PhD (co-supervisor), 2019-2023, CFD Simulation of OTSG tubes
- Jangid, Prachi, MEng (T), 2021-present, Advanced wastewater treatment

- Ehsani, Sina, PhD, 2020, Investigation of solids deposition from waxy crude oils under cold flow
- Haj-Shafiei, Samira, PhD, 2019, Investigation of 'cold flow' of waxy crude oils
- Herman, Steve, MEng (T), 2019, Modelling tube fouling via heat transfer in once-through steam generators
- Sinha, Chandni, MSc, 2016, Investigation of waxy deposit removal in pipelines
- Kasumu, Adebola S., PhD, 2014, Transportation of water-oil mixtures for waxy crude oils
- Jayasinghe, Poornima A., PhD, 2012, Leachate circulation in Biocell for municipal waste
- Arumugam, S., MSc, 2012, Modeling "hot flow" and "cold flow" solids deposition from waxy mixtures
- Yin, S., PhD (co-supervision), 2011, Hydrothermal conversion of biomass to bio-oil
- Bidmus, H.O., PhD, 2009, Investigation of solids deposition ... static, sheared, and 'cold flow' cooling conditions
- Bhat, N.V., PhD, 2008, Modeling of solids deposition ... based on the moving boundary problem approach
- Jayasinghe, P.A., MSc, 2008, Biofiltration for methane emissions control
- Tiwary, R., MSc, 2008, Effects of shear rate and time on deposition from wax-solvent mixtures
- Fong, N., MSc, 2006, Experimental investigation of deposition from wax-solvent mixtures with heat transfer
- Perdikea, K., MSc, 2006, A novel methane emission control technique for bioreactor landfills
- Parthasarathi, P., MSc, 2004, Deposition and aging of waxy solids from paraffinic mixtures
- Bidmus, H., MSc, 2003, A thermal study of wax deposition from paraffinic mixtures
- Akram, S. MEng, 2003, Non-Thesis Route
- Ovaici, F., MEng, 2002, Non-Thesis Route
- Tiwary, D., MSc, 2002, Rheology and phase behavior of highly paraffinic 'waxy' mixtures
- Upreti, S.R., PhD, 2000, Experimental measurement of gas diffusivity in bitumen
- Yang, M., MSc, 1999, Controlling methane emissions: Gas clustering and optimization
- Paunovic, I., MSc, 1999, Paraffin crystallization and phase behaviour
- Laplante, M., MSc, 1998, Investigation of interactions between organic contaminants & soil fractions
- Bhat, N., MSc, 1996, Phase transformation and crystallization of paraffin mixtures
- Maguire, V., MSc, 1994, Thermal desorption of contaminated soils
- Hammami, A., PhD, 1994, Thermal behaviour and non-isothermal crystallization kinetics
- Karan, K., MSc, 1994, An investigation of mass transfer effects in aeration process
- Nielsen, B., MSc, 1993, Effects of temperature and pressure on asphaltene particle size
- Chugh, S., MEng, 1994, Non-Thesis Route
- Dunn, R., MEng (T), 1993, Modelling the dissolution of a CO₂ bubble into Athabasca bitumen
- McAuley, C., MEng (T), 1993, The Canadian Arctic: A sink for organochlorine pollutants?
- Serhal, K., MEng, 1993, Non-Thesis Route
- Krishnan, M., MSc, 1992, Separation of monoclonal IgM antibodies by ultrafiltration
- Bolkan, Y., MSc, 1991, An efficient algorithm for pipeline design and operation
- Eastick, R.R., MSc, Phase behaviour and viscosity of bitumen fractions saturated with CO₂
- Nighswander, John, PhD, 1989, Phase behaviour of CO₂-H₂O-NaCl-Bitumen quaternary system
- Patience, G.S., MSc, 1987, Numerical solutions for laminar forced convection and fluid flow in pipes
- James, N.E., MSc, 1987, A model for the prediction of the solubility of bitumen in hydrocarbon diluents
- Johnson, S.E., MSc, 1985, Gas-free and saturated bitumen viscosity prediction
- Banerjee, A., MSc, 1984, Treatment of oil-sands industry wastewater using reverse osmosis membranes

Scholarly Activities (Peer-Reviewed Publications):

- 1 Mehrotra, A.K., A.K. Dalai, S.R. Upreti, S. Basu, C. Eswaraiah and R.K. Dwari, 2023, "Preface to the special issue section: 74th Indian Chemical Engineering Congress (CHEMCON-2021)", *Canadian Journal of Chemical Engineering*, 101(6), 3022-23.
- 2 Rao, S., S. Murugan, G. Achari, B. Perdicakis and A.K. Mehrotra, 2023, "An optimization study for preventing silica gelation and improving filtration effectiveness during pH reduction of high concentration silica solutions", *Canadian Journal of Chemical Engineering*, 101(6), 3044-58.
- 3 Mehrotra, A.K. and A.K. Dalai, 2023, "India-Canada joint symposium at CHEMCON-2022 in Kanpur, India (December 27-30, 2022)", *CIC News*, February [<https://www.cheminst.ca/magazine/article/india-canada-joint-symposium-at-chemcon-2022-in-kanpur-india/>].

- 4 Englezos, P. and A.K. Mehrotra, 2023, "Preface to the special issue section honouring Professor P. Raj Bishnoi", *Canadian Journal of Chemical Engineering*, 101(2), 562-564.
- 5 Mehrotra, A.K. and P. Englezos, 2023, "A review of the contributions of P. Raj Bishnoi to chemical engineering", *Canadian Journal of Chemical Engineering*, 101(2), 565-582.
- 6 Mehrotra, A.K., J.B.P. Soares, K. Nandakumar, P.J. Carreau, N. Epstein and G.S. Patience, 2022, "A perspective on The Canadian Journal of Chemical Engineering commemorating its 100th volume: 1929-2021", *Canadian Journal of Chemical Engineering*, 100(9), 1983-2010. [an Editor's Choice paper].
- 7 Mehrotra, A.K., S. Haj-Shafiei and S. Ehsani, 2021, "Predictions for wax deposition in a pipeline carrying paraffinic or 'waxy' crude oil from the heat-transfer approach", *Journal of Pipeline Science & Engineering*, 1(4), 428-435.
- 8 Mehrotra, A.K., K. Karan, M.S. Kallos and A. Sen, 2021, "Preface: Special issue to honour Prof. Leo A. Behie", *Canadian Journal of Chemical Engineering*, 99(11), 2359-2361. [an Editor's Choice paper].
- 9 Mehrotra, A.K., K. Karan, M.S. Kallos, A. Sen, S. Ehsani, B. Abraham and E. L. Roberts, 2021, "Research contributions of Leo A. Behie to chemical and biomedical engineering", *Canadian Journal of Chemical Engineering*, 99(11), 2362-2381.
- 10 Upreti, S. and A.K. Mehrotra, 2021, "Experimental determination of gas diffusivity in liquids -- A review", *Canadian Journal of Chemical Engineering*, 99(6), 1239-1267 [Invited, an Editor's Choice paper, Special Series: Established Leaders in Chemical Engineering].
- 11 Herman, S.D. and A.K. Mehrotra, 2021, "A heat-transfer model for tube fouling in the radiant section of once-through steam generators", *Canadian Journal of Chemical Engineering*, 99(3), 789-802 [an Editor's Choice paper].
- 12 Mehrotra, A.K., S. Ehsani, S. Haj-Shafiei and A.S. Kasumu, 2020, "A review of heat-transfer mechanism for solid deposition from 'waxy' or paraffinic mixtures", *Canadian Journal of Chemical Engineering*, 98(12), 2463-2488 [Invited, an Editor's Choice paper, Special Series: Established Leaders in Chemical Engineering].
- 13 Ehsani, S. and A.K. Mehrotra, 2020, "Investigating the gelling behaviour of 'waxy' paraffinic mixtures during flow shutdown", *Canadian Journal of Chemical Engineering*, 98(12), 2618-2631.
- 14 Ehsani, S. and A.K. Mehrotra, 2020, "Effects of shear rate and time on deposit composition in the cold flow regime under laminar flow conditions", *Fuel*, 259 (January), Article 116238.
- 15 Haj-Shafiei, S., B. Workman, M. Trifkovic and A.K. Mehrotra, 2019, "In-situ monitoring of paraffin wax crystals formation and growth", *Crystal Growth & Design*, 19(5), 2830-2837.
- 16 Ehsani, S., S. Haj-Shafiei and A.K. Mehrotra, 2019, "Deposition from 'waxy' mixtures in a flow-loop apparatus under turbulent conditions: Investigating the effect of suspended wax crystals under cold flow conditions", *Canadian Journal of Chemical Engineering*, 97(10), 2740-2751.
- 17 Ehsani, S. and A.K. Mehrotra, 2019, "Validating heat-transfer-based modeling approach for wax deposition from paraffinic mixtures: An analogy with ice deposition", *Energy & Fuels*, 33(3), 1859-1868.
- 18 Ehsani, S., S. Haj-Shafiei and A.K. Mehrotra, 2019, "Experiments and modeling for investigating the effect of suspended wax crystals on deposition from 'waxy' mixtures under cold flow conditions", *Fuel*, 243, 610-621.
- 19 Haj-Shafiei, S. and A.K. Mehrotra, 2019, "Achieving cold flow conditions for 'waxy' mixtures with minimum solid deposition", *Fuel*, 235, 1092-1099.
- 20 Cubi, E., J.A. Bergerson and A. Mehrotra, 2018, "Using life cycle assessment to facilitate energy mix planning in the Galapagos Islands", In *Sustainable Energy Mix in Fragile Environments: Frameworks and Perspectives*, Edited by M.-E. Tyler, Springer, Chapter 6, 93-105. DOI: 10.1007/978-3-319-69399-6_6.
- 21 Sinha, C. and A.K. Mehrotra, 2018, "Investigation of wax deposit 'sloughing' from paraffinic mixtures in pipe flow", *Canadian Journal of Chemical Engineering*, 96(1), 377-389.
- 22 Rathour, R., J. Gupta, M. Kumar, M. Hiloidhari, A.K. Mehrotra and I. Thakur, 2017, "Metagenomic sequencing of microbial communities from a brackish water of Pangong Lake of North West Indian Himalayas (Genome A01029-17)", *Genome Announcements*, 5(4), e01029-17.
- 23 Kasumu, A.S., N.N. Nassar and A.K. Mehrotra, 2017, "A heat-transfer laboratory experiment with shell-and-tube condenser", *Education for Chemical Engineers (Trans. Inst. Chem. Engrs. Part D)*, 19, 38-47.

- 24 Mahinpey, N. and A. Mehrotra, 2016, "65th Canadian Chemical Engineering Conference: Preface (guest editorial)", *Canadian Journal of Chemical Engineering*, 94(11), 2037.
- 25 Kasumu, A.S. and A.K. Mehrotra, 2015, "Solids deposition from wax–solvent–water “waxy” mixtures using a cold finger apparatus", *Energy & Fuels*, 29, 501-511.
- 26 Haj-Shafiei, S., D. Serafini and A.K. Mehrotra, 2014, "A steady-state heat-transfer model for solids deposition from waxy mixtures in a pipeline", *Fuel*, 137, 346-359.
- 27 Jayasinghe, P.A., J.P.A. Hettiaratchi, A.K. Mehrotra and S. Kumar, 2014, "Reaction mechanisms and rate constants of waste degradation in landfill bioreactor systems with enzymatic-enhancement", *Bioresource Technology*, 162, 279-282.
- 28 Arumugam, S., A.S. Kasumu and A.K. Mehrotra, 2013, "Modeling of solids deposition from ‘waxy’ mixtures in ‘hot flow’ and ‘cold flow’ regimes in a pipeline operating under turbulent flow", *Energy & Fuels*, 27, 6477-6490.
- 29 Kasumu, A.S. and A.K. Mehrotra, 2013, "Solids deposition from two-phase wax–solvent–water “waxy” mixtures under turbulent flow", *Energy & Fuels*, 27, 1914-1925.
- 30 Jayasinghe, P.A., J.P.A. Hettiaratchi, A.K. Mehrotra and M.A. Steele, 2013, "Enhancing gas production in landfill bioreactors: A flow-through column study on leachate augmentation with enzyme", *ASCE's Journal of Hazardous, Toxic, and Radioactive Waste*, 17(4), 253–258.
- 31 Kasumu, A.S., S. Arumugam and A.K. Mehrotra, 2013, "Effect of cooling rate on the wax precipitation temperature of 'waxy' mixtures", *Fuel*, 103, 1144-1147.
- 32 Venugopal, S., J.P.A. Hettiaratchi and A.K. Mehrotra, 2012, "An approximate inverse tracking method for analyzing regional airshed quality management data", *International Journal of Biotechnology, Chemical & Environmental Engineering (IJBCEE)*, 1(3), 13-21.
- 33 Mehrotra, A.K., N.N. Nassar and A.S. Kasumu, 2012, "A novel laboratory experiment for demonstrating boiling heat transfer", *Education for Chemical Engineers (Trans. Inst. Chem. Engrs. Part D)*, 7, e210-e218.
- 34 Yin, S., A.K. Mehrotra and Z. Tan, 2012, "Direct formation of gasoline hydrocarbons from cellulose by hydrothermal conversion with in situ hydrogen", *Biomass & Bioenergy*, 47, 228-239.
- 35 Arumugam, S., A.S. Kasumu and A.K. Mehrotra, 2012. "Modeling the static cooling of wax-solvent mixtures in a cylindrical vessel", *Proceedings of 9th International Pipeline Conference*, Calgary, Alberta, Canada, Sept 24-28, 2012, IPC2012-90691.
- 36 Bidmus, H.O. and A.K. Mehrotra, 2012, "Comments on: The effect of operating temperatures on wax deposition (by Huang et al.)", *Energy & Fuels*, 26(6), 3963-3966.
- 37 Weerakone, W.M.S.B., R.C.K. Wong and A.K. Mehrotra, 2012, "Measurement of capillary-pressure curve of DNAPL in a water-saturated sandstone fracture", *Journal of Geotechnical & Geoenvironmental Engineering*, 138(5), 614-624.
- 38 Nassar, N.N. and A.K. Mehrotra, 2011, "Design of a laboratory experiment on heat transfer in an agitated vessel", *Education for Chemical Engineers (Trans. Inst. Chem. Engrs. Part D)*, 6, D, e83-e89.
- 39 Weerakone, W.M.S.B., R.C.K. Wong and A.K. Mehrotra, 2011, "Single phase (brine) and two-phase (DNAPL-brine) flows in induced fractures", *Transport in Porous Media*, 89(1), 75-95.
- 40 Yin, S., A.K. Mehrotra and Z. Tan, 2011, "Alkaline hydrothermal conversion of cellulose to bio-oil: Influence of alkalinity on reaction pathway change", *Bioresource Technology*, 102(11), 6605-6610.
- 41 Hettiarachchi, V.C., J.P.A. Hettiaratchi, A.K. Mehrotra and S. Kumar, 2011, "Field-scale operation of methane biofiltration systems to mitigate point source methane emissions", *Environmental Pollution*, 159, 1715-1720.
- 42 Jayasinghe, P.A., A.K. Mehrotra and J.P.A. Hettiaratchi, 2011, "A model for assessment of energy utilisation within an urban centre", *International Journal of Environmental Technology & Management*, 14(1-4), 294-309.
- 43 Jayasinghe, P.A., J.P.A. Hettiaratchi, A.K. Mehrotra and S. Kumar, 2011, "Effects of enzyme additions on methane production and lignin degradation of landfilled sample of municipal solid waste", *Bioresource Technology*, 102 (April), 4633- 4637.

- 44 Mehrotra, A.K. and S.R. Upreti, 2010, "Rapid simultaneous evaluation of four parameters of single-component gases in nonvolatile liquids from a single data set (comments)", *Chemical Engineering Science*, 65(10), 3362.
- 45 Mehrotra, A.K., H.O. Bidmus, N.V. Bhat and R. Tiwary, 2009 (published in 2010), "Modelling the gelling behaviour of wax-solvent mixtures under static cooling", *Trends in Heat & Mass Transfer*, Vol. 11, 17-31.
- 46 Mehrotra, A.K. and N.V. Bhat, 2010, "Deposition from 'waxy' mixtures under turbulent flow in pipelines: Inclusion of a viscoplastic deformation model for deposit aging", *Energy & Fuels*, 24(4), 2240-2248.
- 47 Bidmus, H.O. and A.K. Mehrotra, 2009, "Solids deposition during 'cold flow' of wax-solvent mixtures in a flow-loop apparatus with heat transfer", *Energy & Fuels*, 23(6), 3184-3194.
- 48 DeAlwis, N., A. Mohamad and A.K. Mehrotra, 2009, "Exergy analysis of direct and indirect combustion of methanol by utilizing solar energy or waste heat", *Energy & Fuels*, 23(3), 1723-1733.
- 49 Tiwary, R. and A.K. Mehrotra, 2009, "Deposition from wax-solvent mixtures under turbulent flow: Effects of shear rate and time on deposit properties", *Energy & Fuels*, 23(3), 1299-1310.
- 50 Bidmus, H. and A.K. Mehrotra, 2008, "Measurement of the liquid-deposit interface temperature during solids deposition from wax-solvent mixtures under sheared cooling", *Energy & Fuels*, 22(6), 4039-4048.
- 51 Bhat, N.V. and A.K. Mehrotra, 2008, "Modeling the effect of shear stress on the composition and growth of the deposit layer from 'waxy' mixtures under laminar flow in a pipeline", *Energy & Fuels*, 22(5), 3237-3248.
- 52 Bidmus, H. and A.K. Mehrotra, 2008, "Measurement of the liquid-deposit interface temperature during solids deposition from wax-solvent mixtures under static cooling conditions", *Energy & Fuels*, 22(2), 1174-1182.
- 53 Perdikeya, K., A.K. Mehrotra and J.P.A. Hettiaratchi, 2008, "Study of thin biocovers (TBC) for oxidizing uncaptured methane emissions in bioreactor landfills", *Waste Management*, 28, 1364-1374.
- 54 Hettiarachchi, V.C., J.P.A. Hettiaratchi and A.K. Mehrotra, 2007, "A comprehensive one-dimensional mathematical model for heat, gas and moisture transport in methane biofilters", *ASCE Practice Periodical of Hazardous, Toxic, and Radioactive Waste Management*, 11(4), 225-233.
- 55 Fong, N. and A.K. Mehrotra, 2007, "Deposition under turbulent flow of wax-solvent mixtures in a bench-scale flow-loop apparatus with heat transfer", *Energy & Fuels*, 21(3), 1263-1276.
- 56 Mehrotra, A.K. and N.V. Bhat, 2007, "Modeling the effect of shear stress on deposition from 'waxy' mixtures under laminar flow with heat transfer", *Energy & Fuels*, 21(3), 1277-1286.
- 57 Bhat, N.V. and A.K. Mehrotra, 2006, "Modeling of deposition from 'waxy' mixtures in a pipeline under laminar flow conditions via moving boundary formulation", *Industrial & Engineering Chemistry Research*, 45, 8728-8737.
- 58 Sheikh, H., A.K. Mehrotra and M. Pooladi-Darvish, 2006, "An inverse solution methodology for estimating the diffusion coefficient of gases in Athabasca bitumen from pressure-decay data", *Journal of Petroleum Science and Engineering*, 53(9), 189-202.
- 59 Tiwary, D. and A.K. Mehrotra, 2006, "Understand temperature change in process stream mixing", *Chemical Engineering Progress*, 102(9), 33-38.
- 60 Sheikh, H., M. Pooladi-Darvish and A.K. Mehrotra, 2005, "Development of graphical methods for estimating the diffusivity coefficient of gases in bitumen from pressure-decay data", *Energy & Fuels*, 19(5), 2041-2049.
- 61 Bhat, N.V. and A.K. Mehrotra, 2005, "Modeling of deposit formation from 'waxy' mixtures via moving boundary formulation: Radial heat transfer under static and laminar flow conditions", *Industrial & Engineering Chemistry Research*, 44(17), 6948- 6962.
- 62 Parthasarathi, P. and A.K. Mehrotra, 2005, "Solids deposition from multicomponent wax-solvent mixtures in a benchscale flow-loop apparatus with heat transfer", *Energy & Fuels*, 19(4), 1387-1398.
- 63 Mehrotra, A.K. and H.O. Bidmus, 2005, "Heat-transfer calculations for predicting solids deposition in pipeline transportation of 'waxy' crude oils", In *Heat Transfer Calculations*, M. Kutz (ed), McGraw-Hill: New York, NY, Chapter 25, 25.1-25.8.

- 64 Chandrakanthi, M., A.K. Mehrotra and J.P.A. Hettiaratchi, 2005, "Thermal conductivity of leaf compost used in biofilters: An experimental and theoretical investigation", *Environmental Pollution*, 136(1), 167-174.
- 65 Karan, K., A.K. Mehrotra and L.A. Behie, 2005, "Thermal decomposition of carbonyl sulfide at temperatures encountered in the front-end of modified Claus plants", *Chemical Engineering Communications* 192(1-3), 370-385.
- 66 Bhat, N.V. and A.K. Mehrotra, 2004, "Measurement and prediction of the phase behavior of wax-solvent mixtures: Significance of wax disappearance temperature", *Industrial & Engineering Chemistry Research*, 43(12), 3451-3461.
- 67 Tiwary, D. and A.K. Mehrotra, 2004, "Phase transformation and rheological behaviour of highly paraffinic 'waxy' mixtures", *Canadian Journal of Chemical Engineering*, 82(1), 162-174.
- 68 Bidmus, H.O. and A.K. Mehrotra, 2004, "Heat-transfer analogy for wax deposition from paraffinic mixtures", *Industrial & Engineering Chemistry Research*, 43(3), 791-803.
- 69 Sherritt, R.G., J. Chaouki, A.K. Mehrotra and L.A. Behie, 2003, "Axial dispersion in the three-dimensional mixing of particles in a rotating drum reactor", *Chemical Engineering Science*, 58(2), 401-415.
- 70 Upreti, S.R. and A.K. Mehrotra, 2002, "Diffusivity of CO₂, C₂H₆, CH₄ and N₂ in Athabasca bitumen", *Canadian Journal of Chemical Engineering*, 80(1), 116-125.
- 71 Kallos, M.S., H. Chin, A.K. Mehrotra and L.A. Behie, 2002, "Measurement of intrinsic rates for homogeneous gas-phase reactions at high temperatures", *Canadian Journal of Chemical Engineering*, 80(3), 513-517.
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