

## **Curriculum Vitae**

### **Dr. Anil K. Mehrotra, P.Eng.**

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 MSc 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, 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; CO<sub>2</sub> and CH<sub>4</sub> 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**

**Bharat Gaurav Puraskar Award (Prestigious Pride of India Award)** (India), 2024  
**Service and Leadership Excellence Award** (Schulich School of Engineering, Univ. of Calgary), 2023  
**Fellowship of the Engineering Institute of Canada (EIC)**, 2023  
**Fellowship of the Indian Institute of Chemical Engineers (IICChE)**, 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, U. 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**

- Shastri, Swapnil, MSc, 2024-present, Investigation of solids deposition from waxy crude oils
- Rao, Saheli, PhD, 2018-2024, Removal of High Concentration Silica in SAGD Evaporator Blowdown Wastewater
- 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 CO<sub>2</sub> 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 CO<sub>2</sub>
- Nighswander, John, PhD, 1989, Phase behaviour of CO<sub>2</sub>-H<sub>2</sub>O-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 Wichert, R.E., A.K. Mehrotra and G.S. Patience, 2024, "Perspectives on 40-year careers--University of Calgary chemical & petroleum engineering graduating class of 1983", *Canadian Journal of Chemical Engineering*, in press.
- 2 Sivagnanam, M., A. K. Mehrotra and I. D. Gates, 2024, "Thermal analysis of V-Pad thermocouple used on once-through steam generator tubes", *Applied Thermal Engineering*, 254, 123880.
- 3 Rao, S., G. Achari, B. Perdicakis and A.K. Mehrotra, 2024, "Characterization and acid treatment of silica and organics in evaporator blowdown wastewater arising from SAGD operations", *Journal of Water Process Engineering*, 60, 105214.
- 4 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.
- 5 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.
- 6 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/>].
- 7 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.
- 8 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.
- 9 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].
- 10 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.
- 11 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].
- 12 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.
- 13 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].
- 14 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].
- 15 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].
- 16 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.
- 17 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.
- 18 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.

- 19 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.
- 20 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.
- 21 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.
- 22 Haj-Shafiei, S. and A.K. Mehrotra, 2019, "Achieving cold flow conditions for 'waxy' mixtures with minimum solid deposition", *Fuel*, 235, 1092–1099.
- 23 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.
- 24 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.
- 25 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.
- 26 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.
- 27 Mahinpey, N. and A. Mehrotra, 2016, "65th Canadian Chemical Engineering Conference: Preface (guest editorial)", *Canadian Journal of Chemical Engineering*, 94(11), 2037.
- 28 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.
- 29 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.
- 30 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.
- 31 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.
- 32 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.
- 33 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.
- 34 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.
- 35 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.
- 36 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.
- 37 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.
- 38 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.

- 39 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.
- 40 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.
- 41 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.
- 42 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.
- 43 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.
- 44 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.
- 45 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.
- 46 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.
- 47 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.
- 48 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.
- 49 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.
- 50 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.
- 51 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.
- 52 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.
- 53 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.
- 54 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.
- 55 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.
- 56 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.
- 57 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.
- 58 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.

- 59 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.
- 60 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.
- 61 Sheikha, 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.
- 62 Tiwary, D. and A.K. Mehrotra, 2006, "Understand temperature change in process stream mixing", *Chemical Engineering Progress*, 102(9), 33-38.
- 63 Sheikha, 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.
- 64 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.
- 65 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.
- 66 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.
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