

Dr. (Mrs.) Shashi Kumar

Professor
Department of Chemical Engineering
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■ Modelling and Simulation of Chemical Processes ■ Membrane Separation Processes ■ Transfer Processes ■ Chemical Reaction Engineering ■ Computer Aided Process and Plant Design ■ Physiochemical and Biological Treatment of Wastewater ■ Biochemical Processes

Education

- 1974–1978 **Bachelor of Engineering (B.E.)**, Chemical Engineering, University of Roorkee (now IIT Roorkee).
1st Division with Honours & 3rd Position
- 1978–1980 **Master of Engineering (M.E.)**, Chemical Engineering, University of Roorkee (now IIT Roorkee).
1st Division with Honours & 1st Position
- 1994 **Doctor of Philosophy**, Chemical Engineering, University of Roorkee (now IIT Roorkee).

Experience

Research and Teaching

- Nov '15–now **Professor**, Department of Chemical Engineering, IIT Roorkee.
- Sep '09–Nov '15 **Associate Professor**, Department of Chemical Engineering, IIT Roorkee.
- Jun '01–Sep '09 **Assistant Professor**, Department of Chemical Engineering, IIT Roorkee.
- Jul '85–Jun '01 **Research Scholar / Associate / Post-doc Fellow**, Department of Chemical Engineering, IIT Roorkee.

Courses Taught at Undergraduate Level

- Chemical Reaction Engineering
- Transfer Processes
- Transport Phenomena
- Process Equipment Design
- Chemical Kinetics

Courses Taught at Post Graduate Level

- CAD of Mass Transfer Equipment
- Chemical Reactor Analysis
- Transport Phenomena
- Distillation Processes
- Novel Separation Processes

Miscellaneous Activities

Institutional Level

- Jun '14–now **Chief Warden**, Kasturba Bhawan, IIT Roorkee.
- Jan '15–now **Member**, Advisory Committee, Mahatma Gandhi Central Library, IIT Roorkee.
- Aug '06–Feb '12 **Chief Warden**, Sarojini Bhawan, IIT Roorkee.
- June–Dec '06 **Warden**, Kasturba Bhawan, IIT Roorkee.
- Aug '12 **Workshop Convener**, Workshop on Future Trends in Chemical Engineering, Department of Chemical Engineering, IIT Roorkee.
- Mar '14 **Joint Organizing Secretary**, National Conference on Fire Research And Engineering: Fire 2014, Department of Mechanical Engineering, IIT Roorkee.

Departmental Level

- Jan '15–now **Office-in-Charge (OC)**, Departmental Library.
- 2013–now **Office-in-Charge (OC)**, Reaction Engineering Research Laboratory.

- 2001–now **Office-in-Charge (OC)**, *UG Lab II (Reaction Engineering & Control)*.
- 2003–2012 **Office-in-Charge (OC)**, *MTech. Course*.
- 2001–2008 **Member**, *Departmental Research Committee (DRC)*.
- 2010–2013 Duration of Terms - July, 2001 to July, 2008 & Jan, 2010 to Jan, 2013.
- 2008–2010 **Member**, *Departmental Academic Committee (DAC)*.
- 2013–now Duration of Terms - Aug, 2008 to Dec, 2010 & Jan, 2013 till date.
- 2005–2007 **Member**, *MTech. Admission Committee*.
- 2002–2006 **Expert Evaluator**, *Chemical Engineering Papers in Cognizance*.
- 2009–2011
- 2001 **Expert Evaluator**, *Chemical Engineering Papers in Chemism*.

Awards & Honours

Awards

- 1978 Received **Thomason Memorial Gold Medal** on B.E. Chemical Project entitled *Techno-Economic Feasibility Report on Synthetic Detergent Manufacture* from the University of Roorkee.
- 1978 Received **Acharya P.C. Ray Award (First Prize Gold Medal)** on B.E. Chemical Project from Indian Institute of Chemical Engineers, Calcutta.
- 1974–1978 Received **Merit Scholarship in all the four year of B.E.** Chemical Degree course at University of Roorkee.
- 1978–1980 Received **U.G.C. Fellowship during M.E.** Chemical Studies.
- 1987–1991 Received **U.G.C. Fellowship in Chemical Engineering and Technology (Direct awardee)** during Ph.D. Programme.

Honours

- 2013 **Paper entitled *Polymer Electrolyte Membrane Fuel Cell Grade Hydrogen Production By Methanol Steam Reforming: A Comparative Multiple Reactor Modelling Study* has been selected to be an excellent fit at Petrochemistry-2013 World Congress to be held on Nov. 18-20, 2013 at San Antonio, USA.**
The paper authored by Nisha Katiyar, Shashi Kumar and Surendra Kumar has been published in the Journal of Power Resources, 243, 381, (2013). The authors have received an honour to share the current research interests and scientific excellences, and to be a part of the expert committee in this world congress.
- 2013 **Paper entitled *Comparative thermodynamic analysis of adsorption, membrane and adsorption-membrane hybrid reactor systems for methanol steam reforming* has been selected as one amongst few out of 5000 peer reviewed journals by Renewable Energy-Global Innovations (ISSN. 2291-2460).**
The paper authored by Nisha Katiyar, Shashi Kumar and Surendra Kumar has been published in the International Journal of Hydrogen Energy, 38, 1363, (2013). Renewable Energy-Global Innovations has published the article's abstract on its website (<http://reginnovations.org/>) for wider dissemination of the article.
- 2012 **Paper entitled *Artificial Intelligence based modelling and optimization of poly(3-hydroxybutyrate-co-3-hydroxyvalerate) production process by using Azohydromonas lata MTCC 2311 from cane molasses supplemented with volatile fatty acids: A genetic algorithm paradigm* has been recognized as an important progress in renewable energy industry.**
The paper authored by Mohd. Zafar, Shashi Kumar, Surendra Kumar and Amit K. Dhiman has been published in Bioresource Technology, 104, 631-341 (2012). The target selection team of Renewable Energy Global Innovation Ltd., Ontario, Canada has shown special interest in this manuscript under renewable energy bioprocess sector. They have listed this manuscript on their site under Renewable Energy Global Innovation Series as an important progress in renewable energy technologies.

- 2009 **Paper entitled *The Production of Syngas by Dry Reforming in Membrane Reactor using Alumina-supported Rh catalyst: A Simulation study* has received great popularity due to which Harriot-Watt University (Edinburgh) has invited us to work in their group in the area of CO₂ separation from the flue gases..**
The paper authored by Shashi Kumar et al. has been published at International Journal of Chemical Reactor Engineering, 6, A-109, 1-39, (2008). The authors were also invited to contribute a paper in 10th International Conference on CO₂ Utilization, held during May 17-21, 2009 in Tianjin, China.
- 2007 **Paper entitled *A Comprehensive Model for Catalytic Membrane Reactor* has been rated as one of the Most Popular Top 10 Papers of International Journal of Chemical Reactor Engineering..**
The paper authored by Shashi Kumar et al. has been published at International Journal of Chemical Reactor Engineering, Vol. 4, A-5, pp. 1-27, (2006). Berkley Electronic Press, publisher of the Journal, has allowed its free distribution through its Home Page under the title *Most Popular Articles*.
- 2009 **Paper entitled *Simulation of Catalytic Dehydrogenation of Cyclohexane in Zeolite Membrane Reactor* has been rated as one of the Most Popular Top 10 Papers of International Journal of Chemical Reactor Engineering..**
The paper authored by Shashi Kumar et al. has been published at International Journal of Chemical Reactor Engineering, Vol. 7, A-13, PP 1-39, (2009). Berkley Electronic Press, publisher of the Journal, has allowed its free distribution through its Home Page under the title *Most Popular Articles*.
- 2005 **Paper entitled *Biodegradation Kinetics of Phenol and Catechol using Pseudomonas putida MTCC 1194* has been rated as one of the Most Popular Top 25 Papers during Jan-March 2005 of Biochemical Engineering Journal..**
- 2011 **Paper entitled *Performance Based Fire Safety Design: Estimation of Movement Time for Evacuation using EVACNET-4* has been translated in Italian Language by the University of Turni, Italy.**
The paper authored by Jawad Farooqui, Shorab Jain, Shashi, Surendra Kumar, M.P. Singh has appeared in the Proceedings of Fire Science and Technology - Research and its Implementations- Nov. 3-4, pp 147-161 (2011). It will be included in the book, *Fire Models and Algorithms*, being written by Prof. Luca Marino and Mr. Vincenzo Puccia.
- 2011 **Member, International Advisory Committee of the International Conference on Membranes: Environmental and Biological Applications, Sep 16-19, 2011, Kerala, India.**
- **Reviewer of Peer-reviewed International Journals, International Journal of Hydrogen Energy, Catalyst Today, Desalination, Biochemical Engineering Journal, Journal of Hazardous Materials.**
 - **Member #009900031267, American Institute of Chemical Engineers, USA.**

Sponsored / Consultancy Projects Handled

Sponsored / Consultancy Projects worth **INR 530 lacs (5.3 crores)** Completed

Research Supervision

PhD Thesis Supervision [5 In Progress & 8 Completed]

- In Progress **Ayushi Verma**, *Removal of Metal Ions from Wastewater.*
- In Progress **Brajesh Kumar**, *Modelling of Membrane Reactor for Hydrogen Production.*
- In Progress **Deepak Garg**, *Modelling and Simulation of Fuel Cell Process.*
- In Progress **Kanti Lal Chauhan**, *Modeling of Reforming Reactors.*
- In Progress **Deepak Sahu**, *Experimental and Modelling Investigation on Liquid Fuel Fires.*
-
- 2015 **Satya Narayan Murthy Pudi**, *Hydrogenolysis of Glycerol.*
- 2013 **Nisha Katiyar**, *Modelling and Simulation on Methanol Reforming for Hydrogen Production.*
- 2012 **Mohd. Danish**, *Analytical and Approximate Solution of Selected Chemical Engineering Models.*
- 2012 **Deepika Arya**, *Biodegradation Dynamics of Phenolic Waste Waters using Gliomastix Indicus MTC3869.*
- 2012 **Mohd. Zafar**, *Microbial Production of Polyhydroxyalkanoates (PHAs) using Inexpensive and Renewable Materials.*

- 2012 **Gagnesh Sharma** , *Development of Surface Modified Macroporous PMMA-DUB and PS-EGDM based Ion Exchanger.*
- 2010 **Sheeba Jilani**, *Modelling of Catalytic Reactor for Syngas Production by Dry Reforming of Methane.*
- 2008 **Ravi Kant Singh**, *Studies on Adsorption and Biodegradation for the Removal of p-cresol from Industrial Waste-water.*

Master of Technology (M. Tech.) Thesis Supervision [4 In Progress & 49 Completed]

- In Progress **Lakshmi Kushwaha**, *Modeling and Simulation of Industrial Ethylene Oxide Reactor.*
- In Progress **Yogita**, *Oxidative Coupling of Methane.*
- In Progress **Arigala R. Trinadharao**, *Modeling of Packed Bed Absorber to Capture CO₂.*
- In Progress **Rajnesh Kumar Chaurasiya**, *Adsorption of Dye (Direct Red - 23) from Aqueous Solution by using UASB Reactor Sludge.*

- 2015 **Neelam**, *Dry Reforming of Propane: Thermodynamic and Modeling Study.*
- 2015 **Shashank Tandon**, *Modeling and Simulation of Methanol Synthesis from Syngas.*
- 2015 **Salman Zafar**, *Transport Mechanisms of Liquid Components through Membrane.*
- 2015 **Neha Madan**, *Modeling and Simulation of Dimethyl Ether Synthesis from Syngas.*
- 2014 **Ashutosh Mugdil**, *Styrene Production by Dehydrogenation of Ethylbenzene: Modeling and Simulation Study.*
- 2014 **Krishan Kumar Pathak**, *Hydrogen Production by Ethanol Steam Reforming: Thermodynamic Analysis and Reactor Modeling.*
- 2014 **Pradeep Kumar Singh**, *Hydrogen Production by Dehydrogenation of Cyclohexane: Modeling and Simulation Study.*
- 2014 **Sandeep Kumar**, *Reforming of Propane: A Thermodynamic Analysis.*
- 2013 **Akansha Tanwar**, *Dehydrogenation of Propane in a Porous Membrane Reactor: Modelling Study.*
- 2013 **Arti Verma**, *Adsorptive Removal of Lead and Cadmium Ions from Aqueous Solution on Parthenium Based Activated Carbon.*
- 2013 **Fayiza Yakub**, *Syn Gas Production by Dry Reforming of Methane: Thermodynamic and Modelling Study.*
- 2013 **Abhinav Malhotra**, *Oxidative Reforming of Methane: Thermodynamic and Modelling Study.*
- 2012 **Brajesh Kumar**, *Adsorptive Removal of 4-Nitrophenol and 2,4- Dinitrophenol from Aqueous Solution using Commercial Activated Carbon.*
- 2012 **Rajesh**, *Modelling and Simulation of Micro Reactor for Hydrogen Production through Methane Dry Reforming Followed by Water Gas Shift Reaction.*
- 2012 **Yogendra Kumar Pal**, *Modelling and Simulation of Combustion of Wood.*
- 2012 **Prabhakar Shukla**, *Refinery Hydrogen Management using Mathematical Model.*
- 2011 **Aakarsha Srivastava**, *Adsorptive Removal of 2-4 Dichlorophenol from Aqueous Solution using Apricot Stones Based Activated Carbon.*
- 2011 **A. Sireesha**, *Adsorptive Removal of Trichloroethylene and Tetrachloroethylene using Parthenium Based Activated Carbon.*
- 2011 **Nagajyothi Virivinti**, *Modelling of Vacuum Membrane Distillation.*
- 2011 **Jai Prakash**, *Modelling and Simulation of Reactive Distillation for Production of Ethylacetate.*
- 2011 **D. Pandarinath**, *Analysis of Smoke Movement in Multi story Building in Case of Fire.*
- 2010 **Rachit Goyal**, *Modelling and Simulation of Fischer- Tropsch Synthesis in Fixed Bed Reactor.*
- 2010 **M. J. U. Gowri**, *Safety and Sensitivity Analysis for the Production of Methanol in a Fixed Bed Reactor.*

- 2010 **Tinu Abraham**, *Reliability Analysis of Solar Powered PEM Fuel Cell Plant for Residential Application.*
- 2010 **Mehar Nosh Hafizee**, *Production of Hydrogen from Ethanol Steam Reforming: Modelling and Simulation Studies.*
- 2010 **Sivaram Kannepalli**, *Binary Adsorption of Phenol and Resorcinol on to Granular Activated Carbon.*
- 2009 **Jitendra Prajapati**, *Hydrogen Production by Partial Oxidation and Water Gas Shift Reaction.*
- 2009 **Ravi Gulbe**, *Simulation of CO₂ Hydrogenation using Ceramic Membrane.*
- 2009 **Jayesh Upadhyay**, *Design of Experiments for FCC Model.*
- 2008 **Tanvi Gaba**, *Mathematical Analysis on Catalytic Dehydrogenation of Cyclohexane using Microporous Membrane.*
- 2008 **Geddamm Swetha**, *Modelling of Membrane Reactor for Partial Oxidation of Methane.*
- 2008 **Keshav Dixit**, *Theoretical Study on the Production of Isopropyl Acetate in Membrane Reactor.*
- 2008 **Pranav Pareek**, *Mathematical Modelling of Tubular Reactor for Crude Ethanol Reforming Reaction.*
- 2007 **Ramesh M.**, *Simulation of Reverse Flow Membrane Reactor.*
- 2007 **Sarveshwari Duggireddy**, *Studies in Multiphase Reactor.*
- 2007 **Sachin Upadhyay**, *Hydrogen Sulfide Removal from Petroleum.*
- 2007 **Saibalini Nayak**, *Modelling of Styrene Production in Microporous Membrane Reactor.*
- 2007 **Nagini Sabbinini**, *Modelling of Flue Gas Desulfurization by Spray-Dry Absorption.*
- 2007 **Dilip Mohan Garge**, *Modelling of Fixed Bed Adsorption Column.*
- 2007 **T. Ravinder**, *Esterification Reaction in Membrane Reactor.*
- 2006 **Vishwanath Sugannavar**, *Modelling of Membrane Reactor for Methane Steam Reforming.*
- 2006 **V. Krishna Vakacharla**, *Dynamic Modelling of Scheibel Column for Toluene-Acetone Water System.*
- 2005 **Y. Ramakrishna**, *Modelling of Membrane Reactor for Methanol Synthesis.*
- 2005 **Gopala Krishna**, *Modelling and Simulation of Kuhni Column of Water Acetone Toluene System.*
- 2005 **Jagan Mohan**, *Modelling and Simulation of Catalytic Membrane Reactor for Dehydrogenation of Cyclohexane.*
- 2004 **Ved Prakash**, *Modelling of Liquid-Liquid Extraction Column.*
- 2004 **R. Pushan Shah**, *Modelling of Membrane Reactor.*
- 2003 **Biswajit Sarkar**, *Modelling of Spray Drier.*
- 2003 **Manoj Yadav**, *Modelling of Trickle Bed Reactor.*

Book(s) & Book Chapter(s) Authored

Book(s)

2015

- [1] **Fire Research and Engineering**, Editors: Akhilesh Gupta, Ravi Kumar, **Shashi Kumar**, Amit Dhiman, Surendra Kumar and Pavan K. Sharma, Narosa Publishing House Pvt. Ltd., New Delhi (2015)

Book Chapter(s)

2015

- [1] Brajesh Kumar, **Shashi Kumar**, Surendra Kumar, *Chapter 10 - Methane Production by Butanol Decomposition: Thermodynamic Analysis*, In Chemical and Bioprocess Engineering-Trends and Developments, Editors: S. Sonawane, Y. Pydi Setty, S.N. Sapavatu, Apple Academic Press, USA (2015)

2015

- [2] Ayushi Verma, **Shashi Kumar**, Surendra Kumar, *Chapter 24 - Fermentation of Starch and Starch based Packing Peanuts for ABE Production: Kinetic Study*, In Chemical and Bioprocess Engineering-Trends and Developments, Editors: S. Sonawane, Y. Pydi Setty, S.N. Sapavatu, Apple Academic Press, USA (2015)

Publications [53 in Peer-Reviewed Journals & 62 in Conferences]



Modelling & Simulation and Transfer Processes Papers



Other Papers

Journal Publications (International & Peer-reviewed)

- 2015 [1] **Shashi Kumar**, Brajesh Kumar, Sheeba Jilani, *Modeling of Methane Dry Reforming over Ni and Rh based Catalysts using Porous and Dense Membranes*, International Journal of Chemical Reactor Engineering (UNDER REVIEW)
- 2015 [2] Deepak Sahu, **Shashi Kumar**, Shorab Jain, Akhilesh Gupta, *Experimental and Numerical Simulation Studies on Diesel Pool Fire*, Fire and Materials - An International Journal (UNDER REVIEW)
- 2015 [3] Satyanarayana Pudi, Prakash Biswas, **Shashi Kumar**, *Selective Hydrogenolysis of Glycerol to 1,2-Propanediol over highly Active Copper/Magnesia Catalysts: Reaction Parameter, Catalyst Stability and Mechanism Study*, Journal of Chemical Technology and Biotechnology, (IN PRESS)
- 2015 [4] **Shashi Kumar**, Neelam Tondwal, Surendra Kumar, Sandeep Kumar, *Thermodynamic Modeling of Propane Reforming Processes to Quantify Hydrogen and Syngas Production with and without Product Removal*, Chemical Product and Process Modeling, (IN PRESS)
- 2015 [5] Satyanarayana Murty Pudi, Prakash Biswas, **Shashi Kumar**, Biswajit Sarkar, *Selective Hydrogenolysis of Glycerol to 1,2-Propanediol over Bimetallic Cu-N-catalyst supported on $\gamma - Al_2O_3$* , Journal of the Brazilian Chemical Society, 26(8), 1551-1564 (2015).
- 2015 [6] Deepak Sahu, Shorab Jain, **Shashi Kumar**, Akhilesh Gupta, *Experimental Study on Methanol Pool Fires under Low Ventilated Compartment*, Procedia Earth and Planetary Science, 11, 507-515 (2015).
- 2015 [7] Satyanarayana Murty Pudi, Abdul Zueb, Prakash Biswas, **Shashi Kumar**, *Liquid Phase Conversion of Glycerol to Propanediol over highly Active Copper/Magnesia Catalysts*, Journal of Chemical Sciences, 127(5), 833-842 (2015).
- 2015 [8] Vinod Jain, Surinder Sambi, **Shashi Kumar**, Brajesh Kumar, Surendra Kumar, *Modeling of a UASB Reactor by NARX Networks for Biogas Production*, Chemical Product and Process Modeling, 10(2), 113-121 (2015).
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- 2014 [9] Mohd Zafar, **Shashi Kumar**, Surendra Kumar, Jay Agrawal, Amit K. Dhiman, *Valorization of Glycerol into Polyhydroxyalkanoates by Sludge Isolated Bacillus sp. RER002: Experimental and Modeling Studies*, Chemical Product and Process Modeling, 9(2), 117-131 (2014).
- 2014 [10] Mohd Zafar, **Shashi Kumar**, Surendra Kumar, Amit K. Dhiman, Hung-suck Park, *Maintenance-energy Dependent Dynamics of Growth and poly (3-hydroxybutyrate) [P(3HB)] Production by Azohydromonas lata MTCC 2311 using Simple and Renewable Carbon Substrate*, Brazilian Journal of Chemical Engineering, 31(2), 313-323 (2014).
- 2014 [11] Anil K. Dhussa, Surinder S. Sambi, **Shashi Kumar**, Sandeep Kumar, Surendra Kumar, *Nonlinear Autoregressive Exogenous Modeling of a Large Anaerobic Digester Producing Biogas from Cattle Waste*, Bioresource Technology, 170, 342-349 (2014).
- 2014 [12] V.K. Jain, Surinder S. Sambi, Surendra Kumar, **Shashi Kumar**, *Economic Analysis of a Large UASB Reactor Producing Biogas from Bagasse Wash Water*, Journal of Sustainable Bioenergy Systems, 4, 68-74 (2014).
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- 2013 [13] Nisha Katiyar, **Shashi Kumar**, Surendra Kumar, *Polymer Electrolyte Membrane Fuel Cell Grade Hydrogen Production by Methanol Steam Reforming: A Comparative Multiple Reactor Modelling Study*, Journal of Power Sources, 243, 381-391 (2013).
- 2013 [14] Nisha Katiyar, **Shashi Kumar**, Surendra Kumar, *Comparative Thermodynamic Analysis of Adsorption, Membrane and Adsorption-membrane Hybrid Reactor*, International Journal of Hydrogen Energy, 38, 1363-1375 (2013).
- 2013 [15] Nisha Katiyar, **Shashi Kumar**, Surendra Kumar, *Thermodynamic Analysis for Quantifying Fuel Cell Grade H₂ Production by Methanol Steam Reforming*, Chemical Engineering and Technology, 36, 581-590 (2013).
- 2013 [16] **Shashi Kumar**, Nisha Katiyar, Surendra Kumar, Snigdha Yadav, *Exergy Analysis of Oxidative Steam Reforming of Methanol for Hydrogen Production: Modelling Study*, International Journal of Chemical Reactor Engineering, 11 (1), 1-12 (2013).
- 2013 [17] **Shashi Kumar**, Deepika Arya, Abhinav Malhotra, Surendra Kumar, Brajesh Kumar, *Biodegradation of dual phenolic substrates in simulated wastewater by Gliomastix indicus MTCC 3869*, Journal of Environmental Chemical Engineering, 1, 865-874 (2013).
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- 2012 [18] Mohd. Danish, **Shashi Kumar** and Surendra Kumar, *Exact analytical solution of a lumped model of the transient convective-radiative cooling of a hot spherical body in an environment*, Chemical Engineering Communications, 199,1668-1682 (2012).
- 2012 [19] Mohd. Danish, **Shashi Kumar** and Surendra Kumar, *Exact analytical solution for the axial transport of solids in a rotary kiln*, Powder Technology, 230, 29-35 (2012).
- 2012 [20] Anil K. Dhussa, S. S. Sambi, Surendra Kumar, **Shashi Kumar**, Jitendra K. Prajapati, *Simplified Simulation Model of a Biofilter used for the Removal of Hydrogen Sulphide from Biogas*, International Journal of Chemical Reactor Engineering, 10, A-38 (2012).
- 2012 [21] Mohd. Zafar, **Shashi Kumar**, Surendra Kumar, Amit K. Dhiman, *Modelling and optimization of poly (3-hydroxybutyrate-co-3-hydroxyvalerate) production from cane molasses by Azohydromonas lata MTCC 2311 in a stirrer tank reactor: Effects of agitation and aeration regimes.*, J. Industrial Microbiology and Biotechnology, 39, 987-1001 (2012).
- 2012 [22] Mohd. Zafar, **Shashi Kumar**, Surendra Kumar, Amit K. Dhiman, *Optimization of polyhydroxybutyrate (PHB) production by Azohydromonas lata MTCC 2311 by using genetic algorithm based on artificial neural network and response surface methodology*, Biocatalysis and Agricultural Biotechnology, 1(1):70-79 (2012).
- 2012 [23] Mohd. Zafar, **Shashi Kumar**, Surendra Kumar, Amit K. Dhiman, *Artificial Intelligence based modelling and optimization of poly(3-hydroxybutyrate-co-3-hydroxyvalerate) production process by using Azohydromonas lata MTCC 2311 from cane molasses supplemented with volatile fatty acids: A genetic algorithm paradigm*, Bioresource Technology, 104, 631-341 (2012).
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- 2011 [24] Mohd. Danish, **Shashi Kumar** and Surendra Kumar, *Exact solutions of three nonlinear heat transfer problems*, Engineering Letters, 19 (3), 255 (2011).
- 2011 [25] Shorab Jain, **Shashi Kumar**, Surendra Kumar, *Numerical Studies on Evaluation of Smoke Control System of Underground Metro Rail Transport System in India having Jet Injection System: A Case Study*, Building Simulation: An International Journal 4, 205-216 (2011).

- [26] Mohd. Danish, **Shashi Kumar**, Surendra Kumar, *Approximate explicit analytical expressions of friction factor for flow of Bingham fluids in smooth pipes using Adomian decomposition method*, Communications in Nonlinear Science and Numerical Simulation 11, 239–251 (2011).
- [27] **Shashi Kumar**, Mohd. Zafar, Jitendra K. Prajapati, Surendra Kumar, Sivaram Kannepalli, *Modelling studies on simultaneous adsorption of phenol and resorcinol onto granular activated carbon from simulated aqueous solution*, Journal of Hazardous Materials 185 287–294 (2011).
- [28] Mohd. Danish, **Shashi Kumar**, and Surendra Kumar, *A note on the solution of singular boundary value problems arising in engineering and applied sciences: Use of OHAM*, Computers and Chemical Engineering 36, 57–67 (2011).
- [29] Mohd. Danish, **Shashi Kumar**, and Surendra Kumar, *Exact analytical solutions for the Poiseuille and Couette–Poiseuille flow of third grade fluid between parallel plates*, Communications in Nonlinear Science and Numerical Simulation 17, 1089–1097 (2011).
- [30] Mohd. Danish, **Shashi Kumar**, and Surendra Kumar, *Exact Solutions of Three Nonlinear Heat Transfer Problems*, Engineering Letters, 19 (3), 255-260 (2011).
- [31] Mohd. Danish, **Shashi Kumar**, and Surendra Kumar, *OHAM Solution of a Singular BVP of Reaction cum Diffusion in a Biocatalyst*, International Journal of Applied Mathematics, 41(3), 223-227 (2011).
- [32] Deepika Arya, **Shashi Kumar**, and Surendra Kumar, *Biodegradation dynamics and cell maintenance for the treatment of resorcinol and p-cresol by filamentous fungus Gliomastix indicus*, Journal of Hazardous Materials, 198, 49-56 (2011).
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- [33] Mohd. Zafar, **Shashi Kumar**, and Surendra Kumar, *Optimization of Naphthalene biodegradation by Genetic Algorithm based Response Surface Methodology*, Brazilian Journal of Chemical Engineering, 27 (01), 89 – 99, (2010).
- [34] Mohd. Danish, **Shashi Kumar**, and Surendra Kumar, *Analytical solution of reaction-diffusion process in a permeable spherical catalyst*, Chemical Engineering and Technology, 33(4), 664-675 (2010).
- [35] Mohd. Danish, **Shashi Kumar**, and Surendra Kumar, *Revisiting reaction-diffusion process in a porous catalyst: improving the Adomian solution*, Chemical Product and Process Modelling, 5(1), Article 10, 1-34 (2010).
- [36] Mohd. Danish, **Shashi Kumar**, and Surendra Kumar, *Approximate explicit analytical expressions of friction factor for flow of Bingham fluids in smooth pipes using Adomian decomposition method*, Communications in Nonlinear Science and Numerical Simulation, 16, 239-251 (2010).
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- [37] **Shashi Kumar**, Surendra Kumar, Jitendra K. Prajapati, *Hydrogen production by partial oxidation of methane: Modelling and simulation*, International Journal of Hydrogen Energy, 34, 6655 – 6668 (2009).
- [38] **Shashi Kumar**, Tanvi Gaba, Surendra Kumar, *Simulation of Catalytic Dehydrogenation of Cyclohexane in Zeolite Membrane Reactor*, International Journal of Chemical Reactor Engineering, 7, A-13, 1-41 (2009).
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- [39] 2008 Shorab Jain, **Shashi Kumar**, Surendra Kumar, T.P. Sharma, *Numerical Simulation of Fire in a Tunnel: Comparative Study of CFAST and CFX Predictions*, Tunneling and Underground Space Technology, 23, 160-170 (2008).
- [40] 2008 **Shashi Kumar**, Mohit Agrawal, Surendra Kumar, Sheeba Jilani, *The Production of Syngas by Dry Reforming in Membrane Reactor using Alumina Supported Rh Catalyst: A Simulation Study*, International Journal of Chemical Reactor Engineering, 6, A-109, 1-39 (2008).
- [41] 2008 Mohd. Danish, **Shashi Kumar**, Surendra Kumar, *Numerical Solution of Non-linear Algebraic Equations by Modified Genetic Algorithm*, International Journal of Chemical Product and Process Modelling, 3, A17, 1-29 (2008)
- [42] 2008 Ravi Kant Singh, **Shashi Kumar**, Surendra Kumar, Arinjay Kumar, *Biodegradation Kinetic Studies for the removal of p-cresol from Wastewater using Gleomastix Indicus MTCC 3869*, Biochemical Engineering Journal, 40, 293-303 (2008).
- [43] 2008 Ravi Kant Singh, **Shashi Kumar**, Surendra Kumar, Arinjay Kumar, *Development of Parthenium Based Activated Carbon and its Utilization for Adsorptive Removal of p-Cresol from Wastewater*, Journal of Hazardous Material, 155, 523-535 (2008).
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- [44] 2007 Asad Hasan Sahir, **Shashi Kumar** and Surendra Kumar, *Modelling of a Packed Bed Solid State Fermentation Bioreactor using the N-Tanks in Series approach*, Biochemical Engineering Journal, 35, 20-28 (2007).
- [45] 2007 Mohd. Danish, Arees Qamareen, **Shashi Kumar**, Surendra Kumar, *Optimal Solution of MINLP Problems using Modified Genetic Algorithm*, International Journal of Chemical Product and Process Modelling, 1, A4, 1- 41 (2007).
- [46] 2007 Mohd. Danish, Arees Qamareen, **Shashi Kumar**, Surendra Kumar, *Letter to the Editor*, Computers and Chemical Engineering, 31, 364-365 (2007).
- [47] 2007 Arinjay Kumar, **Shashi Kumar**, Surendra Kumar, Dharam V. Gupta, *Adsorption of Phenol and 4-Nitrophenol on Granular Activated Carbon in Basal Salt Medium: Equilibrium and Kinetics*, Journal of Hazardous Materials, 147, 155-166 (2007).
- [48] 2007 Raunaq Hasib, Rajiv Kumar, **Shashi Kumar**, and Surendra Kumar, *Simulation of an Experimental Compartment Fire by CFD*, Journal of Building and Environment, 42, 3149-3160 (2007).
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- [49] 2006 **Shashi Kumar**, Sukrit Shankar, Shah Pushan R., and Surendra Kumar, *A Comprehensive Model For Catalytic Membrane Reactor*, International Journal of Chemical Reactor Engineering, 4, A5, 1-27 (2006).
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- [50] 2004 Arinjay Kumar, **Shashi Kumar**, and Surendra Kumar, *Biodegradation Kinetics of Phenol and Catechol using Pseudomonas putida MTCC 1194*, Biochemical Engineering Journal, 1(22), 151-159 (2004).
- [51] 2004 Mitali China, **Shashi Kumar**, and Surendra Kumar, *Sensitivity Analysis of Biodegradation of Soil Applied Pesticides using A Simulation Model*, Biochemical Engineering Journal, 19, 119-125 (2004).
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- 2003 [52] Arinjay Kumar, **Shashi Kumar**, and Surendra Kumar, *Adsorption of Resorcinol and Catechol on Granular Activated Carbon: Equilibrium and Kinetics*, Carbon, 41, 3015-3025 (2003).
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- 1997 [53] O. S. Zain, Surendra Kumar and **Shashi Kumar**, *Application of Modified Nonlinear Orthomin to Chemical Process Simulation*, Hungarian Journal of Industrial Chemistry, 25, 1 (1997).
-

- 1993 [54] Surendra Kumar, **Shashi Kumar** and A.Petho, *An Algorithm for the Numerical Inversion of a Tridiagonal Matrix*, Communications in Numerical Methods in Engineering, 9, 353-359 (1993).

Journal Publications (National & Peer-reviewed)

- 2004 [55] Raj K. Vyas, **Shashi Kumar**, and Surendra Kumar, *Determination of Micropore Volume and Surface Area of Zeolite Molecular Sieves by D-R and D-A equations: A comparative study*, Indian Journal of Chemical Technology, 11, 704-709 (2004).

Conference Publications

- 2015 [1] Neelam Tondwal, **Shashi Kumar**, *Exergy Analysis of Dry Reforming of Propane for Hydrogen and Syngas Production - Thermodynamic Study*, CHEMCON 2015, IIT Guwahati, India, December 27-30 (2015).
- 2015 [2] Deepak Sahu, Shorab Jain, **Shashi Kumar**, Akhilesh Gupta, *Experimental Study on Methanol Pool Fires under Low Ventilated Compartment*, International Conference on Global Challenges, Policy Framework & Sustainable Development for Mining of Mineral and Fossil Energy Resources, NIT Surathkal, India, April 17-18 (2015).
- 2015 [3] V.K. Jain, Atiya Banerjee, **Shashi Kumar**, Surendra Kumar, Surinder S. Sambi, *Predictive Modeling of an Industrial UASB Reactor using NARX Neural Network*, Sixth International Renewable Energy Congress (proceedings indexed in IEEE Xplore), Sousse, Tunisia, March 24-26 (2015).
-
- 2014 [4] **Shashi Kumar**, Neelam Tondwal, *Dry Reforming of Propane: Thermodynamic Analysis for No Carbon Formation*, CHEMCON 2014, Punjab University, Chandigarh, India, December 27-30 (2014).
- 2014 [5] Brajesh Kumar, **Shashi Kumar**, *Thermal Efficiency Analysis of Butanol Steam Reforming for Hydrogen Production*, CHEMCON 2014, Punjab University, Chandigarh, India, December 27-30 (2014).
- 2014 [6] Neha Madan, **Shashi Kumar**, *Modeling Study to Maximize Dimethyl Ether Production through Reversible Series Reaction*, CHEMCON 2014, Punjab University, Chandigarh, India, December 27-30 (2014).
- 2014 [7] Ayushi Verma, **Shashi Kumar**, *Biosorption Isotherm Study for Pb^{+2} Ions Recovery from Aqueous Solution by Sargassum sp.*, CHEMCON 2014, Punjab University, Chandigarh, India, December 27-30 (2014).
- 2014 [8] **Shashi Kumar**, Jay Agrawal, Sandeep Kumar, Surendra Kumar, *Modeling of Methane Steam Reforming in Membrane Catalytic Reactor*, Proceedings of European Hydrogen Energy Conference, Seville, Spain, 86-88, March 12-14 (2014).

- 2014 [9] Deepak Sahu, **Shashi Kumar**, Akhilesh Gupta, Shorab Jain, Ravi Kumar, A.K. Gupta, Surendra Kumar, Pawan K. Sharma, *Experimental Studies on Propane Pool Fire inside the Compartment*, National Conference on Fire Research and Engineering (FiRE), Deptt. of Mechanical and Industrial Engineering, IIT Roorkee, India, March 1-2 (2014).
-
- 2013 [10] Ayushi Verma, **Shashi Kumar**, Surendra Kumar, *Fermentation of Starch and Starch based Packing Peanuts for ABE Production: A Kinetic Study*, International Conference on Chemical and Bioprocess Engineering, NIT Warangal, India, November 16-17 (2013).
- 2013 [11] Brajesh Kumar, **Shashi Kumar**, Surendra Kumar, *Methane Production by Butanol Decomposition: A Thermodynamic Analysis*, International Conference on Chemical and Bioprocess Engineering, NIT Warangal, India, November 16-17 (2013).
- 2013 [12] Sakshma Puri, **Shashi Kumar**, Surendra Kumar, *Modelling of fixed bed reactor for dimethyl ether synthesis*, International Conference on Advances in Chemical Engineering (ACE-2013), Organized by the Department of Chemical Engineering, IIT Roorkee, U.K., India, February 22-24 (2013).
- 2013 [13] Sharad K. Verma, **Shashi Kumar**, Surendra Kumar, *Permeation model through a microporous zeolite membrane*, International Conference on Advances in Chemical Engineering (ACE-2013), Organized by the Department of Chemical Engineering, IIT Roorkee, U.K., India, February 22-24 (2013).
- 2013 [14] Rashmi, **Shashi Kumar**, Surendra Kumar, *Modelling and simulation of spherical packed bed reactor for glycerol reforming*, International Conference on Advances in Chemical Engineering (ACE-2013), Organized by the Department of Chemical Engineering, IIT Roorkee, U.K., India, February 22-24 (2013).
- 2013 [15] Arti Verma, **Shashi Kumar**, Surendra Kumar, *Syngas production through gasification of algae*, International Conference on Advances in Chemical Engineering (ACE-2013), Organized by the Department of Chemical Engineering, IIT Roorkee, U.K., India, February 22-24 (2013).
- 2013 [16] Nisha Katiyar, **Shashi Kumar**, Surendra Kumar, *Thermodynamic modelling of adsorption and membrane enhanced H₂ production in fixed bed reactor*, International Conference on Advances in Chemical Engineering (ACE-2013), Organized by the Department of Chemical Engineering, IIT Roorkee, U.K., India, February 22-24 (2013).
- 2013 [17] Fayiza Yaqub, **Shashi Kumar**, Surendra Kumar, *Modelling to access carbon formation boundaries in dry reforming of methane on non-noble catalyst*, International Conference on Advances in Chemical Engineering (ACE-2013), Organized by the Department of Chemical Engineering, IIT Roorkee, U.K., India, February 22-24 (2013).
- 2013 [18] Abhinav Malhotra, **Shashi Kumar**, Surendra Kumar, *Prediction of thermodynamic property of carbon dioxide using artificial neural network*, International Conference on Advances in Chemical Engineering (ACE-2013), Organized by the Department of Chemical Engineering, IIT Roorkee, U.K., India, February 22-24 (2013).
- 2013 [19] Jay Agrawal, **Shashi Kumar**, Surendra Kumar, *Prediction of VLE data for binary/ternary solution systems using artificial neural network*, International Conference on Advances in Chemical Engineering (ACE-2013), Organized by the Department of Chemical Engineering, IIT Roorkee, U.K., India, February 22-24 (2013).

- 2013 [20] Akanksha Tanwar, **Shashi Kumar**, Surendra Kumar, *Modelling and simulation of hybrid vycor glass porous membrane reactor for catalytic dehydrogenation of propane*, International Conference on Advances in Chemical Engineering (ACE-2013), Organized by the Department of Chemical Engineering, IIT Roorkee, U.K., India, February 22-24 (2013).
- 2013 [21] Satya Narayan Murthy Pudi, Prakash Biswas, **Shashi Kumar**, *Liquid phase Hydrogenolysis of glycerol over Cu-Ni/T-Al₂O₃ catalysts*, International Conference on Advances in Chemical Engineering (ACE-2013), Organized by the Department of Chemical Engineering, IIT Roorkee, U.K., India, February 22-24 (2013).
-
- 2012 [22] Nisha Katiyar, **Shashi Kumar**, Surendra Kumar, *Thermodynamic study of methanol steam reforming for fuel cell grade H₂ production*, CHEMCON 2012, NIT Jalandhar, December (2012).
-
- 2011 [23] Mohd. Zafar, **Shashi Kumar**, Surendra Kumar, and Amit K. Dhiman, *Two stage polyhydroxyalkanoates (PHAs) production from fermented cane molasses using pure and mixed microbial culture*, World Congress on Biotechnology, Hyderabad, India, March 21-23 (2011).
- 2011 [24] Mohd. Zafar, **Shashi Kumar**, Surendra Kumar, Amit K. Dhiman, *Production and Optimization of Poly (3-hydroxybutyrate-co-3-hydroxyvalerate) by Azohydromonas lata MTCC 2311 using cane molasses in a 3L bioreactor: A Genetic Algorithm Paradigm*, Proceedings of International Conference on Microbial Biotechnology for Sustainable Development, 52th AMI, Punjab University, Chandigarh, November 3-6 (2011).
- 2011 [25] Mohd. Danish, **Shashi Kumar**, and Surendra Kumar, *Solution of a Singular BVP of Reaction-diffusion in a Biocatalyst by OHAM*, Proceedings of the World Congress on Engineering 2011 Vol. I WCE 2011, London, U.K., July 6 - 8 (2011).
- 2011 [26] Mohd. Danish, **Shashi Kumar**, and Surendra Kumar, *Exact Analytical Solutions of Three Nonlinear Heat Transfer Models*, Proceedings of the World Congress on Engineering 2011 Vol. III WCE 2011, London, U.K., July 6 - 8 (2011).
- 2011 [27] Gagnesh Sharma, Shishir Sinha, and **Shashi Kumar**, *Preparation of Gel-Structured Poly Styrene-Ethylene Glycol Dimethacrylate (PS-EGDM) based High Capacity Ion Exchange Resin and its Characterization*, AIChE Annual Meeting, Minneapolis, USA, October 16-21 (2011).
- 2011 [28] Gagnesh Sharma, Shishir Sinha, and **Shashi Kumar**, *Effect of Gas phase Modification (Nitration) on Poly (Methyl Methacrylate) (PMMA) - Di Vinyl Benzene (DVB) High Capacity Ion Exchange Resin*, International Conference on Advancements in Polymeric Materials (APM), CIPET, Chennai, March 25-27 (2011).
- 2011 [29] Nisha Katiyar, Meher Nosh Hafizee, **Shashi Kumar**, and Surendra Kumar, *Hydrogen Production from Ethanol Steam Reforming Using Membrane Reactor*, International Conference on Membranes (ICM): Environmental and Biological Applications, CEET, Kottayam, Kerala, September 16-19 (2011).
- 2011 [30] Jawad Farooqui, Shorab Jain, **Shashi Kumar**, Surendra Kumar, and M.P. Singh, *Performance based Fire Safety Design: Estimation of movement time for Evacuation using EVACNET-4*, Fire Science and Technology – Research and its implementation (FIRST 2011), CSIR, Roorkee, India, November 3-4, (2011).
- 2011 [31] Nisha Katiyar, **Shashi Kumar**, and Surendra Kumar, *Modelling and Optimization of Combined Reformer and Prox Reactor For H₂ Production in Fuel Cell*, AMOC-2011, International Conference on Advances in Modelling, Optimization and Computing, IIT Roorkee, December 5-7 (2011).

- 2011 [32] Snigdha Yadav, **Shashi Kumar**, and Surendra Kumar, *Modelling of a Packed Bed Absorber to Capture CO₂ from Air*, AMOC-2011, International Conference on Advances in Modelling, optimization and computing, IIT Roorkee, December 5–7 (2011).
- 2011 [33] Harikrishnan N, **Shashi Kumar**, Jay Agarwal, and Surendra Kumar, *Desulphurisation of Flue Gas*, AMOC-2011, International Conference on Advances in Modelling, Optimization and Computing, IIT Roorkee, December 5–7 (2011).
- 2011 [34] Rajesh, **Shashi Kumar**, Abhinav Malhotra, and Surendra Kumar, *Methane dry Reforming in a Micro-Channel Reactor: Modelling Study*, AMOC-2011, International conference on advances in modelling, optimization and computing, IIT Roorkee, December 5–7 (2011).
- 2011 [35] Yogendra Kumar Pal, **Shashi Kumar**, Nisha Katiyar, and Surendra Kumar, *Modelling of Wood Pyrolysis*, AMOC-2011, International conference on advances in modelling, optimization and computing, IIT Roorkee, December 5–7 (2011).
- 2011 [36] Nisha Katiyar, **Shashi Kumar**, Surendra Kumar and Keshav Dixit, *Production of Isopropyl Acetate in Membrane Reactor: Modelling Study*, 4th International Congress on Environmental Research, NIT Surat, Gujrat, December 15-17 (2011).
- 2011 [37] Mohd. Zafar, **Shashi Kumar**, Surendra Kumar, and Amit K. Dhiman, *Production and characterization of biodegradable polymer by Azhydromonas lata MTCC 2311 using industrial waste/byproduct*, 4th International Congress on Environmental Research, NIT Surat, Gujrat, December 15-17 (2011).
- 2011 [38] Deepika Arya, **Shashi Kumar**, and Surendra Kumar, *Kinetics of phenol biodegradation by a filamentous fungus Gliomastix indicus*, 4th International Congress on Environmental Research, NIT Surat, Gujrat, December 15-17 (2011).
- 2011 [39] Satya Narayana Murthy Pudi, Tarak Mondal, Prakash Biswas, and **Shashi Kumar**, *Hydrogenolysis of Glycerol over γ -Al₂O₃ and Activated Carbon supported Cu, Ni Catalysts*, CHEMCON-2011, MSRIT, Bangalore, December 27–29 (2011).
- 2011 [40] Rajesh, **Shashi Kumar**, Nisha Katiyar, and Surendra Kumar, *Modelling of a membrane micro-channel reactor for a water gas shift reaction*, CHEMCON-2011, MSRIT, Bangalore, December 27 – 29 (2011).
- 2011 [41] Yogendra Kumar Pal, **Shashi Kumar**, Nisha Katiyar, and Surendra Kumar, *Modelling of Wood Pyrolysis*, CHEMCON-2011, MSRIT, Bangalore, December 27–29 (2011).
-
- 2010 [42] A.K. Dhussa, S. S. Sambhi, Surendra Kumar, **Shashi Kumar**, Jitendra K. Prajapati, *Power Generation Based on Biomethanation of Cattle Manure*, Methane to Markets Conference, New Delhi, March 2-5 (2010).
-
- 2009 [43] Surendra Kumar, **Shashi Kumar**, Arun Prakash Upadhyay, *Membrane-bioreactor for Wastewater Treatment*, International Conference on Advances in Chemical Engineering 2009 (ACHEME 2009), Thapar University Patiala, February 27-28 (2009).
-
- 2008 [44] Deepika Arya, **Shashi Kumar**, and Surendra Kumar, *Green – Chemistry – An Overview*, National Conference on Revolution in Chemistry: Green Chemistry, Institute of Technology and Management, Gurgaon, December 19 (2008).

- 2008 [45] Ravi Kant Singh, **Shashi Kumar** and Surendra Kumar, *Production of α -amylase from Agricultural Byproducts by Humicola Lanuginose in Solid State Fermentation*, International Congress of Environmental Research (ICER08), Birla Institute of Technology and Science-Pilani, Goa Campus, 20 December (2008).
- 2008 [46] Mohd. Zafar, **Shashi Kumar** and Surendra Kumar, *Optimization of Napthalene Biodegradation by Genetic Algorithm based RSM Model*, International Congress of Environmental Research (ICER08), Birla Institute of Technology and Science-Pilani, Goa Campus, December 18-20 (2008).
- 2008 [47] Surendra Kumar, **Shashi Kumar**, Fahad Islan, Arun Prakash Upadhyay, Jitendra Kumar Prajapati, *Membrane Reactors-An Overview, All India Seminar on Emerging Trends of Chemical Engineering in Process Industries*, (ETCE-2008), The Institution of Engineers (India), Jamshedpur Local Centre, October 17-18 (2008).
-
- 2007 [48] Sushmaben R. Gupta, **Shashi Kumar**, Surendra Kumar, *Modelling and Simulation of Microchannel Reactor for Water Gas Shift Reaction*, International Conference on Modelling and Simulation (CITICOMS 2007), Coimbatore Institute of technology, Coimbatore, India August 27-29 (2007).
- 2007 [49] Shorab Jain, **Shashi Kumar**, Surendra Kumar, T. P. Sharma, *Studies on Evaluation of Ventilation Strategies of Underground Metro Rail Transport System*, International Conference on 7th Asia Oceania Symposium on Fire Science and Technology, Hongkong, September 20-22 (2007).
- 2007 [50] Ravikant Singh, Arinjay Kumar, **Shashi Kumar**, Surendra Kumar, *Advance Techniques in Solid Waste Management*, International Conference on Ecotoxicology and Environmental Sciences (ICEES-2007), Indian Institute of Chemical Engineers, (Jadhavpur University Campus) Kolkata, January 15-18 (2007).
-
- 2006 [51] Rahul Keshav Jadhao, **Shashi Kumar**, Surendra Kumar, *A Simplified Activated Sludge Model for Municipal Wastewater*, International Conference on Modelling in Chemical and Biological Engineering Sciences, Bangkok, October 25-27 (2006).
- 2006 [52] Rahul Keshav Jadhao, **Shashi Kumar**, Surendra Kumar, *Modelling of Membrane Bioreactor for Municipal Wastewater*, International Conference on Modelling in Chemical and Biological Engineering Sciences, Bangkok, October 25-27 (2006).
- 2006 [53] Arinjay Kumar, **Shashi Kumar**, Ravi Kant Singh, Surendra Kumar, and Dharam V. Gupta, *Phenol Adsorption on Granular Activated Carbon in Basal Salt Medium: Equilibrium And Kinetics*, National Conference on Environmental Conservation (NCEC 2006), Birla Institute of Technology and Science, Pilani September 1-3 (2006).
- 2006 [54] **Shashi Kumar**, Salman Zafar, Surendra Kumar, Deepak Rajput, and Yash, *Waste as a Source of Energy*, Workshop on Energy Sources and Management (ESM-2006), JMIT, Radaur, February 24-25 (2006).
-
- 2005 [55] Surendra Kumar, **Shashi Kumar**, Salman Zafar, Rahul Keshav Jadhao, *Waste to Energy Plant based on Cattle Dung*, National Seminar on Solid Waste Management (SWM-2005), JMIT, Radaur, March 01-02 (2005).
-

- 2004 [56] Raunaq Hasib, **Shashi Kumar**, Surendra Kumar, Rajiv Kumar, *Analysis of Methanol Fire in an Enclosure by Using CFX*, The 2004 Ansys India Users' Meet and The Second CFX India Users' Meet, Bangalore, December 1-2 (2004).
- 2004 [57] Shorab Jain, T. P. Sharma, **Shashi Kumar**, Surendra Kumar, *A Comparative Study of Fire Safety Measures in Long Distance Road Transport Tunnels*, International Symposium on Safety Science and Technology Shanghai, China, October 25-28 (2004).
-
- 2003 [58] Raj K. Vyas, **Shashi Kumar**, Surendra Kumar, *Numerical Simulation of A Packed Bed Thermal Desorber*, 13th National Conference of Mechanical Engineers (ISME-2003), IIT Roorkee, December 30-31 (2003).
- 2003 [59] Minesh Sharma, **Shashi Kumar**, and Surendra Kumar, Jasvinder Singh, and Alok K. Saxena, *CFD Analysis of a Bubble Column with Internals*, Fluent Users Meet, Pune, November 19-21, (2003).
-
- 2001 [60] **Shashi Kumar**, S. D. Bhattacharya, and M. L. Kapoor, *Mathematical Modelling of Shaft Region of a Blast Furnace*, International Conference on Mathematical Modelling, University of Roorkee, Roorkee, January 29-31 (2001).
-
- 1997 [61] O. S. Zain, Surendra Kumar and **Shashi Kumar**, *Simulation of a Triple Effect Evaporator by Modified Nonlinear Orthomin*, Proceedings of International Conference on Advances in Mechanical and Industrial Engineering, University of Roorkee, February 6-8, 519 (1997).
-
- 1996 [62] O. S. Zain, Surendra Kumar and **Shashi Kumar**, *Computation of Vapour Equilibrium Ratio for Petroleum-cuts By Using Peng-Robinson Equation of State with Modified Gundersen Algorithm*, Proceedings of the International Conference on Advances in Chemical Engineering (ICACHE-96), IIT Madras, December 11-13, 3 (1996).