

Profile Page



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Research Interests :

Trickle Bed Reactors, Multiphase Flow, Advanced Oxidation Processes, Photo-nano-catalysis, Waste Water Treatment, Solid Waste Management, New and Renewable Energy

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Journal Publications :

Year	Journal	Publication
2022	Chemosphere Volume 286, January, 131837	Renuka Garg, Renu Gupta, Nirmal Singh, Ajay Bansal, Eliminating pesticide quinalphos from surface waters using synthesized GO-ZnO nanoflowers: Characterization, degradation pathways and kinetic study
2022	Journal of Environmental Management, 306 (2022)114516	V. Sodhi, A. Bansal and M.K. Jha, Effect of extracellular polymeric compositions on in-situ sludge minimization performance of upgraded activated sludge treatment for industrial wastewater

2021	Materials Today: Proceedings 44 (2021) 855–859	Renuka Garg, Renu Gupta, Ajay Bansal Synthesis of g-C ₃ N ₄ /ZnO nanocomposite for photocatalytic degradation of a refractory organic endocrine disrupter
2021	Bioresource Technology Volume 341, December 125748	Vijay Sodhi, Charanjit Singh, Puneet Pal Singh Cheema, Reena Sharma , Ajay Bansal, Mithilesh Kumar Jha, Simultaneous Sludge Minimization, Pollutant and Nitrogen Removal Using Integrated MBBR Configuration for Tannery Wastewater Treatment
2021	Environmental Science and Pollution Research 1-21	Renuka Garg, Renu Gupta, Nirmal Singh, Ajay Bansal, Characterization and performance evaluation of synthesized ZnO nanoflowers, nanorods, and their hybrid nanocomposites with graphene oxide for degradation of Orange G
2021	Korean Journal of Chemical Engineering 38 (3), 485-497	Renuka Garg, Renu Gupta, Ajay Bansal Degradation mechanism, reaction pathways and kinetics for the mineralization of Bisphenol A using hybrid ZnO/graphene oxide nano-catalysts
2021	Materials Today: Proceedings 44 (2021) 1163–1168	Vikash Kumar, Renu Gupta, Ajay Bansal Influence of RhB dye concentration on ZnS nanoflowers decorated TiO ₂ photoanode in dye sensitized solar cell
2021	Environmental Technology & Innovation(2021), doi: https://doi.org/10.1016/j.eti.2021.102013	V. Sodhi, A. Bansal and M.K. Jha, Investigation of activated sludge characteristics and their influence on simultaneous sludge minimization and nitrogen removal from an advanced biological treatment for tannery wastewater.
2021	ACS Appl. Nano Mater. 2021, 4, 6, 6212–6222	Vikash Kumar, Renu Gupta, and Ajay Bansal, Hydrothermal Growth of ZnO Nanorods for Use in Dye-Sensitized Solar Cells
2020	International Journal of Environmental Science and Technology pages 1-18	Renuka Garg, Renu Gupta, Ajay Bansal Photocatalytic degradation of imidacloprid using semiconductor hybrid nano-catalyst: kinetics, surface reactions and degradation pathways
2020	Solar Energy Volume 196, 15 January 2020, Pages 589-596	Kumar, V., Gupta, R., Bansal, A., Role of chenodeoxycholic acid as co-additive in improving the efficiency of DSSCs
2020	Chemical Engineering & Technology 43 (5), 995-1004	Nikesh Kumar, Renu Gupta, Ajay Bansal Effect of Surface Tension on Hydrodynamics and Mass Transfer Coefficient in Airlift Reactors
2019	Journal of Cleaner Production 243 (2019) 118492	Sodhi, V., Bansal, A., Jha, M.K., Minimization of excess bio-sludge and pollution load in oxic-settling-anaerobic modified activated sludge treatment for tannery wastewater
2018	Chemical Engineering Research and Design Volume 136, August 2018, Pages 315-323	Nikesh Kumar, Ajay Bansal, RenuGupta, Shear rate and mass transfer coefficient in internal loop airlift reactors involving non-Newtonian fluids
2018	BIORESOURCE TECHNOLOGY Volume: 263 Pages: 613-624	Sodhi, Vijay; Ajay Bansal; Mithilesh Kumar Jha Excess sludge disruption and pollutant removal from tannery effluent by upgraded activated sludge system
2018	International Journal of Engineering Technology Science and Research, 5(3), 340-342	Isha Arora, Jatinder Kumar Ratan, Ajay Bansal. TiO ₂ photocatalysis in cementitious systems.
2017	European Journal of Environmental and Civil Engineering Volume 22, 2018 - Issue 11	M K Kaushik, Arvind kumar, Ajay Bansal, Performance of tire chips–gravel combinations with nonwoven geotextile and encapsulated tire chips layers used as filter/separator under incremental stress levels
2016	Electronic Journal of Geotechnical Engineering, 210, 3113-36	A Sharma, MK Kaushik, S Naval, A Kumar, A Bansal, "Assessment of ground water quality and feasibility of tire derived aggregates for use as leachate drainage material"
2016	Electronic Journal of Geotechnical Engineering, 210, 3453-3473	D Thakur, MK Kaushik, A Kumar, A Bansal, "Estimation of Service Life for Tire Derived Aggregate Drainage Layer of Leachate Collection System"

2016	Bulletin of Chemical Reaction Engineering & Catalysis, 11(2), 140	P Kumar, AK Sarma, A Bansal, MK Jha, "Formulation of SrO-MBCUS Agglomerates for Esterification and Transesterification of High FFA Vegetable Oil"
2016	Geotechnical and Geological Engineering, 34(1), 167-191	MK Kaushik, A Kumar, A Bansal, "Drainage performance of different sizes tire chips used alone and mixed with natural aggregates as leachate drainage layer material"
2016	Electronic Journal of Geotechnical Engineering 210.09(09):3113-3136	Anchal Sharma, M. K. Kaushik, Arvind Kumar, Ajay Bansal, Assessment of Ground Water Quality and Feasibility of Tire Derived Aggregates for Use as Leachate Drainage Material
2016	Heat and Mass Transfer, 48 (12), 2069-2077	Jatinder Kumar, Ajay Bansal. CFD modeling of hydrodynamics and mass transfer of rhodamine B in annular reactor.
2016	International Journal of Environmental Science and Technology, 9(3), 479-484	Jatinder Kumar, Ajay Bansal. Photodegradation of amaranth in aqueous solution catalyzed by immobilized nanoparticles of titanium dioxide.
2015	Bulletin of Chemical Reaction Engineering & Catalysis, 10(3), 221-229	P Kumar, AK Sarma, MK Jha, A Bansal, B Srivastava, "Utilization of Renewable and Waste Materials for Biodiesel Production as Catalyst"
2015	Royal Society of Chemistry Advances, 2015(5), 9946-9954	Prashant Kumar, Mohammad Aslam, Neetu Singh, Sunil Mittal, Ajay Bansal, Mithilesh Kumar Jha and Anil Kumar Sarma, "Characterization, activity and process optimization with a biomass-based thermal power plant's fly ash as a potential catalyst for biodiesel production"
2015	Journal of Geotechnical and Geological Engineering, 33(4), 1081-1098	MK Kaushik, A Kumar, A Bansal, "Performance Assessment of Gravel & Tire Chips mixes as Drainage layer Material using real active MSW landfill leachate"
2015	Indian Journal of Chemical Technology, 22, 95-104.	Jatinder Kumar, Ajay Bansal. CFD simulations of immobilized-titanium dioxide based annular photocatalytic reactor: Model development and experimental validation
2015	International Journal of Computers and Application, 32 (1), 99-103	Jatinder Kumar, Ajay Bansal. Application of neural network for estimating properties of diesel-biodiesel blends
2014	International Journal of Geotechnical Engineering 9(5):1939787914Y.000	MK Kaushik, A Kumar, A Bansal, "Performance assessment of tire chips as gravel mixes as leachate drainage layer material"
2014	Electronic Journal of Geotechnical Engineering, 19(Z6), 17495-17513	MK Kaushik, A Kumar, A Bansal, "Geo-Environmental Prospectives and Development Plans for a new MSW landfill site using Tire Chips as Leachate Drainage Materials"
2014	Journal of Industrial Pollution Control, 30(1), 129-38	Kohli D, Garg S, Jana A K, Bansal A, Chopra P, "Sorption of para-nitrophenol and para-chlorophenol using cross-linked starch based bio-adsorbent: Thermodynamics, kinetics column studies"
2013	International Journal of Environmental Science & Technology, 10(6), 1265-1274	Neetu Divya, Ajay Bansal and A K Jana, "Photocatalytic degradation of azo dye Orange II in aqueous solutions using copper-impregnated titania"
2013	Indian Journal of Chemical Technology, 20, 341-345	Shailendra Kumar Singh, Ajay Bansal*, M K Jha & Rahul Jain, "Production of biodiesel from wastewater grown Chlorella minutissima"
2013	Materials Science Forum, 764, 130-150	Jatinder Kumar, Ajay Bansal, "Photocatalysis by Nanoparticles of Titanium Dioxide for Drinking Water Purification: A Conceptual and State-of-Art Review"
2013	Materials Science Forum, 734, 349-363	Neetu Divya, Ajay Bansal and A K Jana, "Nano-photocatalysts in the treatment of colored wastewater-A Review"
2013	Journal of Environmental Chemical Engineering, 1(3), 398-405	Jatinder Kumar, Ajay Bansal, "Photocatalytic degradation in annular reactor: Modelization and optimization using computational fluid dynamics (CFD) and response surface methodology (RSM)"

2013	Water, Air, & Soil Pollution, 224(3), 1452	Jatinder Kumar, Ajay Bansal. A comparative study of immobilization techniques for photocatalytic degradation of Rhodamine B using nanoparticles of titanium dioxide
2013	International Journal of Innovative Research in Science, Engineering and Technology, 2(7), 2688-2693.	Jatinder Kumar, Anurag Srivastava, Ajay Bansal. Production of self-cleaning cement using modified titanium dioxide.
2012	Bioprocess and Biosystems Engineering, 36(8), 1011-1018	Renu Gupta, Ajay Bansal, "Axial Dispersion in Packed Bed Reactors involving viscoinelastic and viscoelastic non-Newtonian fluids"
2012	Heat and Mass Transfer, 48(12), , 2069-77	Jatinder Kumar, Ajay Bansal, "CFD Modeling of Hydrodynamics and Mass Transfer of Rhodamine Bin Annular Reactor"
2012	International journal of Environmental Science and Technology, 9(3), 479-84	Jatinder Kumar, Ajay Bansal, "Photodegradation of Amaranth in Aqueous Solution Catalyzed by immobilized nanoparticles of Titanium Dioxide"
2012	Bio Resource Technology, 104, 257-65	Shailendra K Singh, Ajay Bansal, M K Jha, A Dey, "An integrated approach to remove Cr (VI) using Chlorella Minutissima grown in nutrient rich sewage waste water"
2012	Indian Chemical Engineer, 54(3), 180-189	R Gupta, A Bansal, "Quantifying effect of surface tension and viscosity on dispersion in packed bed reactors"
2012	Materials Science Forum, 712, 85-104	Neetu Divya, Ajay Bansal and A K Jana, "Photocatalytic activity of transition metal ion doped titania for Amaranth dye degradation"
2012	International Journal of Environmental Sciences, 2(2), 1492-1505	Gunjan Bhalla, P K Swamee, Arvind Kumar, Ajay Bansal, "Assessment of Groundwater quality near municipal solid waste land by an aggregate index method"
2011	Environmental Technology, iFirst, 1-10	Chhavi Rani, A K Jana, Ajay Bansal, "Potential of different white rot fungi to decolourize azo dyes in absence of external carbon source"
2011	Indian Chemical Engineer, 53(4), 211-19	S Kumar Singh, A Bansal, MK Jha, A Dey, "Comparative studies on uptake of wastewater nutrients by immobilized cells of Chlorella minutissima and dairy waste isolated algae"
2011	Research Journal of Chemistry and Environment, 15(2), 17-24	Chhavi Rani, A K Jana, Ajay Bansal, "Comparative study of different white rot fungi in decolorization of acid, direct and reactive textile azo dyes"
2011	International Journal of Chemical and Biological Engineering, 4(1), 44-50	Vijay Sodhi, Ajay Bansal, "Analysis of foaming flow instabilities for dynamic liquid saturation in trickle bed reactor"
2010	Chemical and Biochemical Engineering Quarterly, 24(3), 295-300	Ritu Gupta , Ravinder K.Wanchoo and Ajay Bansal, "Interfacial Tension of some Newtonian and non-Newtonian fluids by Drop -Weight method"
2010	Industrial and Engineering Chemistry Research, 49(19), 925-28	Renu Gupta, Ajay Bansal, "Effect of Bed Configuration on Dispersion in a Packed-Bed Reactor"
2010	International Journal of Computers and Applications, 32(1), 99-103	Jatinder Kumar, Ajay Bansal, "Application of Neural Network For Estimating Properties of Dieselâ€“Biodiesel blends"
2010	Bulletin of Chemical Reaction Engineering & Catalysis, 5(1), 31-37	Renu Gupta, Ajay Bansal, "Hydrodynamic studies on trickle bed reactor for foaming liquids"
2010	International Journal of Chem Tech Research, 2(3), 1537-1543	Jatinder Kumar, Ajay Bansal, "Dual effect of Photocatalysis and adsorption in degradation of Azorubine dye using Nano sized TiO2 and activated carbon immobilized with different Techniques"
2010	International Journal of Chem Tech Research, 2(3), 1547-52	Jatinder Kumar, Ajay Bansal, "Sol-gel derived films of nano-crystals of TiO2 for photocatalytic degradation of Azorubine dye"
2010	Geotechnical and Geological Engineering, 28, 661-69	Gunjan Bhalla, Arvind Kumar, Ajay Bansal, "Performance of Scarp-Tire-Shreds as a Potential Leachate Collection Medium"

2009	Industrial and Engineering Chemistry Research, 48(7), 3341-3350	Ajay Bansal, R K Wanchoo, S K Sharma, "Dynamic liquid saturation in a Trickle Bed Reactor Involving Newtonian/Non-Newtonian Liquid-Phase"
2009	Bulletin of Chemical Reaction Engineering & Catalysis, 4(2), 43-53	Neetu Divya, Ajay Bansal and A K Jana, "Surface Modification, Characterization and Photocatalytic Performance of Nano-Sized Titania modified with Silver and Bentonite clay"
2009	Bulletin of Chemical Reaction Engineering & Catalysis, 4(1), 16-22	K.R. Ayyappan, Amrit Toor, Ritu Gupta, Ajay Bansal and R.K. Wanchoo, "Catalytic Hydrolysis of Ethyl Acetate using Cation Exchange Resin (Amberlyst 15) : A Kinetic Study"
2008	Chemical Engineering Communications, 195, 1106-1127	Ajay Bansal, R K Wanchoo, S K Sharma, "Two-Phase Pressure Drop in a Trickle Bed Reactor Involving Newtonian/Non-Newtonian Liquid-Phase"

Conference Publications :

Year	Conference	Publication
2020	11th International Conference on Materials Processing and Characterization -2020(ICMPC 2020), 15-17 Dec 2020, Indian Institute of Technology Indore, India.	V. Kumar, R. Gupta and A. Bansal. "Influence of RhB dye concentration on ZnS nanoflowers decorated TiO ₂ photoanode in dye sensitized solar cell"
2020	V. Kumar, R. Gupta and A. Bansal. "PEDOT:PSS conjugated pencil graphite based counter electrode as a replacement of Pt in DSSCs"	International Online Conference on Sustainable Research Technology & Development (IOSCRT-2020), 24-25 Sep, 2020, Panjab University, Chandigarh, India.
2020	EGRWSE 2019, Springer Nature	KR Reddy, AK Agnihotri, Y Yukselen-Aksoy, BK Dubey, A Bansal Sustainable Environment and Infrastructure: Proceedings of EGRWSE
2019	V. Kumar, R. Gupta and A. Bansal. "Organic cocktail of Rhodamine B and Fast Green Dye as sensitizer in Dye sensitized solar Cell"	2nd National conference on Advances in Chemical and Environmental Engineering (ACEE'19), 23-24 Mar. 2019, NIT Jalandhar (India).
2019	70th Canadian Chemical Engineering	Vijay Sodhi, Ajay Bansal, MK Jha Experimental Investigation of an Innovative Advancement to the Conventional Treatment for Pollution Reduction and Sludge Yield Minimization from High Strength Industrial Influent
2018	International Conference on Research Trends in Engineering, Applied Science and Management	Isha Arora, Jatinder Kumar Ratan, Ajay Bansal. TiO ₂ photocatalysis in cementitious systems
2018	V. Kumar, R. Gupta and A. Bansal. "Facile synthesis of visible light driven gC ₃ N ₄ /ZnO nanocomposite for the degradation of Coomassie Brilliant Blue Dye"	CHEMCON 2018, the 71th annual Session of IChE, 27-30 Dec. 2018, NIT Jalandhar (India).
2018	V. Kumar, R. Gupta and A. Bansal. "Synthesis of rGO/TiO ₂ nanocomposite for the efficient photocatalytic degradation of RhB dye"	International Conference on Environmental Geotechnology, Recycled Waste Materials and Sustainable Engineering, 29-31 Mar. 2018, NIT Jalandhar (India).
2018	71st Indian Chemical Engineering	Vijay Sodhi, Ajay Bansal, MK Jha Minimization of Excess Biosolids in Oxidic-Settling-Anoxic (OSA) Treatment for Tannery Influent
2018	International Conf. on Environmental Challenges: A Global concern (ICEC-10)At: Kanya Maha Vidyalaya, Jalandhar, India	M. K. Kaushik, Arvind Kumar, Ajay Bansal, Natural attenuation mechanisms for the removal of specific landfill leachate pollutants
2016	V. Kumar, S. K. Chauhan and A. Bansal, "A review on development of low cost dye sensitized solar cell".	National conference on Advances in chemical and environmental engineering (ACEE'16), 22-23 Apr. 2016, NIT Jalandhar (India).

2016	V. Kumar, S. K. Chauhan, A. Bansal and R. Gupta, "A review on the optimization of dye sensitized solar cell"	CHEMCON 2016, the 69th annual Session of IChE, 27-30 Dec. 2016, Anna university, Chennai, India
2016	Advances in Chemical and Environmental Engineering	Saurabh patel , Ajay Bansal, "Studies on fire retardant wood"
2016	Advances in Chemical and Environmental Engineering	K Mehta, Ajay bansal, M K Jha, N Divya, "Fly ash based zeolite as a potential photocatalyst"
2016	Advances in Chemical and Environmental Engineering	Renuka, Renu Gupta, Ajay bansal, Rajmohan aetkuri, Nikesh Kumar, "Prediction of Mass Transfer Coefficient in gas-liquid bubble column for Newtonian and non-Newtonian fluids"
2016	Advances in Chemical and Environmental Engineering	Nikesh Kumar, Ajay Bansal, Renu Gupta, "Performance of Airlift Recators involving non-Newtonian fluids-a review"
2016	Advances in Chemical and Environmental Engineering	Vikash Kumar, Simranjit Kaur, Ajay Bansal, Renu Gupta, "A review on development of low cost dye sensitized solar cell"
2016	Advances in Chemical and Environmental Engineering	Nasir Ahmad, F Q Mir, Ajay Bansal, S Verma, "Preparation and Characterization of low cost membrane from locally available clay"
2016	Advances in Chemical and Environmental Engineering	Simranjit Kaur, Vikash Kumar, Renu Gupta, Ajay bansal, "Reactive dividing wall distillation column: an emerging separation technology: areview"
2016	Advances in Chemical and Environmental Engineering	Vijay Sodhi, Ajay bansal, M K jha, "Response of an Anoxic-Aerobic Activated Sludge operation for synthetic and real Industrial wastewater"
2015	International Conference on Chemical Engineering, Chicago	Jatinder Kumar, Ajay Bansal. Simulation of annular reactor used for photocatalytic degradation
2015	V. Kumar, S. K. Chauhan and A. Bansal. "Synthesis of reduced grapheme oxide-TiO ₂ (rGO/T) photocatalyst for the photocatalytic degradation of RhB Dye"	2nd national conference on advanced oxidation Processes (AOP), 15-16 Oct. 2015, Panjab University, Chandigarh (India).
2013	Jatinder Kumar, Ajay Bansal. Simulation of annular reactor used for photocatalytic degradation	Jatinder Kumar, Ajay Bansal. Immobilization of nanoparticles of titanium dioxide for photocatalytic degradation.
2013	International Conference on Future Trends in Structural, Civil, Environmental and Mechanical Engineering, Bangkok	Jatinder Kumar, Ajay Bansal. Immobilization of nanoparticles of titanium dioxide for photocatalytic degradation.
2012	International Conference on Chemical, Biological and Environmental Engineering, Venice	Jatinder Kumar, Ajay Bansal. Study of flow behaviour of aqueous solution of rhodamine in annular reactor using computational fluid dynamics.
2012	CHEMCON-12	Sumit S Arora, J. Kumar, Ajay Bansal, 2012. RTD analysis of annular reactor using CFD simulations.
2012	CHEMCON-12	A. Srivastava, Jatindar Kumar, Ajay Bansal. TiO ₂ photocatalysis in architectural concrete: A review.
2012	CHEMCON-12	A. Srivastava, Jatindar Kumar, Ajay Bansal. Comparative analysis of photodegradation efficiencies of ZnO & TiO ₂ : A review.
2012	CHEMCON-12	Monika Sharma, Jatinder Kumar, Ajay Bansal. Photocatalytic degradation of Rhodamine B dye using Photo-Fenton process

2012	CHEMCON-12	Monami Dey, Jatinder Kumar, Ajay Bansal. Immobilization of titanium dioxide: Photocatalytic degradation of amaranth and its kinetic study.
2012	CHEMCON-12	Anurag Srivastava, Jatinder Kumar, Ajay Bansal. Comparative analysis of photodegradation efficiencies of Fenton reagent, ZnO and TiO ₂ .
2012	CHEMCON-12	Monami Dey, Jatinder Kumar, Ajay Bansal. Preparation and evaluation of immobilized titanium dioxide photocatalyst for dye degradation.
2012	CHEMCON-12	Sourav Choudhary, Sumit Singh Arora, Jatinder Kumar, Ajay Bansal. Three-dimensional analysis of forced convection flow and heat transfer at different flow conditions.
2012	CHEMCON-12	Anuj Juneja, Kuber Kushwaha, Sumit S.Arora, J. Kumar, Ajay Bansal. Production of electricity by organic photovoltaic cells.
2012	CHEMCON-12	Anuj Juneja, Sumit S.Arora, Anmol Gupta, J. Kumar, Ajay Bansal. Review of synthesis of solid catalysts and applications for biodiesel production.
2012	CHEMCON-12	Anuj Juneja, Sumit S. Arora, Kuber N Khuswah, J. Kumar, Ajay Bansal. Effect of mixing on rate kinetics of reaction for photocatalytic degradation of dye.
2010	World Congress on Engineering and Computer Science. University of California, San Francisco	Jatinder Kumar, Ajay Bansal. Photocatalytic degradation of amaranth dye in aqueous solution using sol-gel coated cotton fabric
2010	International Conference on Energy & Environment, University of Cambridge, Cambridge	Jatinder Kumar, Ajay Bansal. Photocatalytic degradation of amaranth dye over immobilized nano-crystals of TiO ₂
2010	International Conference on Production and Industrial Engineering	Sumit Singh, Ajay Bansal, Jatinder Kumar. Enhancement of efficiency of circular sieve tray using CFD simulations
2007	International conference on Artificial Intelligence, Knowledge Engineering and Data Bases	Jatinder Kumar, Ajay Bansal. Selection of best neural network for estimating properties of diesel-biodiesel blends
2007	World Congress on Engineering and Computer Science, University of California ,San Francisco	Jatinder Kumar, Ajay Bansal, MK Jha. Comparison of statistical and neural network techniques in predicting physical properties of various mixtures of diesel and biodiesel
2005	CHEMCON-2005	Jatinder Kumar, Amit Jain, Ajay Bansal, M K Jha. Neural network based simulation for prediction of physical properties of diesel-biodiesel blends.

Book/Chapter Publications :

Type	Title	Publisher	Authors	ISBN/ISS N No.	Year
Scopus Indexed, Book	Sustainable Environmental Geotechnics	Springer, Singapore, 2020	Reddy, K.R., Agnihotri, A.K., Yukselen-Aksoy, Y., Dubey, B.K., and Bansal, A.	978-3-030-51349-8	2020

Scopus Indexed, Book	Sustainable Environment and Infrastructure	Springer, Singapore, 2020	Reddy, K.R., Agnihotri, A.K., Yukselen-Aksoy, Y., Dubey, B.K., and Bansal, A.	978-3-030-51353-5	2020
Book Chapter	"Biotechnological exploitation of cyanobacteria and microalgae for bioactive compounds" in the book "Biotechnological Production of Bioactive Compounds"	Elsevier	Shailendra Kumar Singh, Rupali Kaur, Ajay Bansal, Suman Kapur, Shanthi Sundaram	ISBN: 978-0-444-64323-0	2020
	Challenges and Opportunities in the Application of Nanotechnology for Sustainable Biofuel Production	Taylor & Francis	Shailendra Kumar Singh, Ajay Bansal, Suman Kapur, Shanthi Sundaram	10.1201/9780429023194-1	2020
Scopus Indexed, Book	Sustainable Engineering	Springer, Singapore, 2019	Arvind Kumar Agnihotri, Krishna Reddy, Ajay Bansal	Print ISBN 978-981-13-6716-8 Online ISBN 978-981-13-6717-5	2019
Scopus Indexed, Book	Recycled Waste Materials	Springer, Singapore, 2019	Arvind Kumar Agnihotri, Krishna Reddy, Ajay Bansal	Print ISBN 978-981-13-7016-8 Online ISBN 978-981-13-7017-5	2019
Scopus Indexed, Book	Environmental Geotechnology	Springer, Singapore, 2019	Arvind Kumar Agnihotri, Krishna Reddy, Ajay Bansal	Print ISBN 978-981-13-7009-0 Online ISBN 978-981-13-7010-6	2019
Book Chapter	Minimization of Bio-sludge from Tannery Effluent Using Anoxic Modified Conventional Activated Sludge Process	Springer, Singapore	Vijay Sodhi, Ajay Bansal, Mithilesh Kumar Jha	978-981-13-7009-0	2019
Book Chapter	Synthesis of rGO/TiO ₂ Nanocomposite for the Efficient Photocatalytic Degradation of RhB Dye	Springer, Singapore	Vikash Kumar, Ajay Bansal, Renu Gupta	Vikash Kumar Ajay Bansal Email author Renu Gupta	2019

Book Chapter	Synthesis and Assessment of Photocatalytic activities of undoped and Mn doped ZnO nanoparticles	Novel Perspectives and Prospects published by McGraw Hill	Rubal Preet, Ajay Bansal, Renu Gupta, Sukhdeep Kaur		2015
Book Chapter	Photocatalysis by nanoparticles of titanium dioxide for drinking water purification: A conceptual and state-of-art review	Trans Tech Publications Ltd.,	Kreuzstrasse 10, CH-8635 Durnten-Zurich Switzerland		2015
Book	Engineering Applications of Nanoscience and Nanomaterials	Trans Tech Publications Ltd. Keruzstrasse Switzerland	Ajay Bansal and Rajesh Tayade	ISBN-13: 978-3-037 85-701-4	2013
Book Chapter	Degradation of Acid Red 27 in Sunlight Using TiO ₂	Trans Tech Publications Ltd., Kreuzstrasse 10, CH-8635 Durnten-Zurich Switzerland	Jatinder Kumar, Ajay Bansal	ISBN-13: 978-3-0378 5-547 -8/ ISSN 0255-5476	2013
Book Chapter	Effect of Nano-Catalysts on Orange G Degradation	Dorling Kindersley (India) Pvt. Ltd., Licensees of Pearson Education in South Asia	Neetu Divya, Ajay Bansal and A K Jana	ISBN: 978-81-31 7-8991-9	2013
Monograph	CFD Simulations-Sieve Tray Design, Modeling and Enhancement	Lambert Academic Publishing GmbH and C. Germany	Sumit Singh, Ajay Bansal		2013
Book Chapter	Algal Bio-Hydrogen-Prospects and Challenges	Sardar Swaran Singh National Institute of Renewable Energy; Kapurthala, India	Singh S K, Jha MK, Bansal A & Dey A		2012
Book	Photocatalytic Degradation of Amaranth Dye: Concepts and Methods	Lambert Academic Publishing GmbH and C. Germany	Jatinder Kumar, Ajay Bansal		2010

Research Projects :

Role	Project Type	Title	Funding Agency	From	To	Amount	Status	Co-Investigator
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Principal Investigator	Sponsored	Effect of Surface Tension and Foaming on Mass Transfer in packed Bed Reactor	TEQIP-II, NIT Jalandhar	Dec-16	Mar-17	42093	Completed	Dr Renu Gupta
Principal Investigator	Sponsored	Studies on the Fabrication of Dye-Sensitized Solar Cell	TEQIP-II, NIT Jalandhar	Dec-16	Mar-17	35622	Completed	Dr Renu Gupta
Principal Investigator	Sponsored	Design and operational Analysis of upgraded treatment for real industrial wastewater	TEQIP-II, NIT Jalandhar	2015	2016	50,000	Completed	Dr M K Jha
Principal Investigator	Sponsored	Study on Treatment of Ground Water of AB Sugars Ltd.	AB Sugars Ltd & Dasuya Hoshiarpur	2014	2015	1.0 Lac	Completed	Dr Jatinder Kumar
Principal Investigator	Sponsored	IST-DST project for dept of Chemical Engineering	DST, Govt of India	2015	2020	1.5 Crore	Ongoing	Dr S Bajpai Dr M K Jha
Principal Investigator	Sponsored	Mass Transfer Studies in Lab Scale Airlift Reactor	TEQIP-II, NIT Jalandhar	Dec-2015	Dec-2016	50,000	Completed	Dr Renu Gupta
PI	R & D	Performance Evaluation of Dye Sensitized Solar Cell fabricated with ZnS modified TiO ₂ photoanode	NCPRE, IIT Bombay	2019	2020	Fabrication, Characterization, Chemicals and Testing facility provided	Completed	Dr Renu Gupta

Events Organized :

Category	Type	Title	Venue	From	To	Designation
One Week Short Term Course	National	Energy and Environment management	NIT Jalandhar	19.10.13	23.10.13	Chief Coordinator

Short Term Training Programme	National	Recent Advances in Energy Technology	NIT, Jalandhar	02-06-2014	06-06-2014	Coordinator
International Summer Term Course	International	GIAN Course on Landfills and Geoenvironmental Engineering	NIT, Jalandhar	30-05-2016	03-06-2016	Coordinator
Conference	National	Advances in Chemical and Environmental Engineering	NIT, Jalandhar	22-04-2016	23-04-2016	Organising Secretary
Conference	National	National Conference on Sustainable Research in energy and Environment	NIT Jalandhar	Jan 15, 2021	Jan 16, 2021	Conference Chair
STC	National	One week STC on Advances in Chemical , Biochemical and allied Industries	NIT Jalandhar	Nov 5, 2020	Nov 9, 2020	Convener
STC	National	STC on Manufacturing Technologies for Tissue engineering and Drug Delivery Systems	NIT Jalandhar	Oct 3, 2020	Oct 7, 2020	Co-Patron
Conference	International	International Conference on Biomacro molecules and Cellular Interface	Dept of Biotechnology, NITJ	Jan 9, 2021	Jan 10, 2021	As Co-Patron
One Week Short Term Course	National	Advances in Chemical, Biochemical and Allied Industries	Department of Biotechnology and Centre for Energy and Environment, NIT Jalandhar	Nov. 5, 2020	Nov. 9, 2020	Convener
Conference	National	Sustainable Research in Energy and Environment	Department of Biotechnology, Chemical Engineering and Centre for Energy and Environment, NIT Jalandhar	Jan. 15, 2021	Jan. 16, 2021	Conference Chair

Professional Affiliations :

Designation	Organization
Fellow	The Institution of Engineers (India) Kolkata
Fellow Membership (FICER)	Global Earth Society Society for Environmental Energy and Development
Fellow	Indian Institute of Chemical Engineers Kolkata
Certified Energy Auditor	National Productivity Council
Certified Energy Manager	National Productivity Council
Life Fellow-8461	Indian Chemical Society Kolkata
Life Member (LM-553)	Indian Desalination Association , Mumbai
Life Membership (L41158)	The Indian Science Congress Kolkata

PhD Supervised :

Scholar Name	Research Topic	Status	Year	Co-Supervisor
Baneesh Patial	Removal of organic pollutants	Ongoing	2022	Dr Renu Gupta
Nikesh Kumar	Hydrodynamic And Mass Transfer Studies on Rheologically Complex Fluids in Airlift Reactors	Completed	2021	Dr Renu Gupta
Vikash Kumar	Synthesis of Nanostructured Hybrid Photoanodic Materials for Dye Sensitized Solar Cells	Ongoing	2021	Dr Renu Gupta
Renuka	Degradation of Refractory Organic Compounds using Semiconductor Hybrid Nanocomposites	Completed	2021	Dr Renu Gupta
Deepanjali	Yet to be decided	Ongoing	2021	Prof Umesh Rathore
Vijay Sodhi	Studies on hybrid system for minimizing excess sludge from biological treatment of tannery effluent	Completed	2020	Dr. M K Jha
Deepika		Ongoing	2019	Dr Virender Singh
Vidya Pandey	Removal of organic pollutants	Ongoing	2019	Prof (Mrs) A P Toor
Prashant kumar	Process Optimization of Biodiesel Production using Hybrid Hetrogeneous Catalyst	Completed	2015	Dr M K Jha, Dr Anik K Sarma
Jatinder Kumar	Modeling and simulation of Immobilized titania based annular photocatalytic Recator using CFD	Completed	2014	
Mohan K Kaushik	Permeability Studies on tire shreds as leachate collection medium	Completed	2014	Dr A K Agnihotri
Chhavi Rani	Biodegradation of Azo Dyes by Suspension and immobilized	Completed	2012	Dr A K Jana
Renu Bala	Dispersion Studies on Trickle Bed Reactors	Completed	2012	
Shailendra Kumar Singh	Biosorption of Heavy Metals using Chlorella minutissima	Completed	2012	Dr M K Jha, Dr Apurba Dey
Neetu Divya	Studies on Photocatalytic Degradation of Dyes	Completed	2011	Dr A K Jana
Gunjan Bhalla	Use of scrap Tire Shreds as potential Leachate Collection Medium	Completed	2010	Dr A K Agnihotri

PG Dissertation Guided :

Student Name	Dissertation Title	Status	Year	Co-Supervisor
Roshan Singh	Bioethanol production through fermentation of mixed food waste by using Saccharomyces Cerevisiae	Completed	2021	Dr Nikhil G N
Suninda Kumari	Molecular docking studies of selective bioactive compounds with key enzymes of anaerobic digestion	Completed	2021	Dr Nikhil G N
Amitendera Singh	Production of Alcohol from Kitchen Waste	Completed	2020	Dr N N Pandhare
Abhishek Sharma	Studies on instability of Non-Newtonian Fluids	Completed	2019	Dr Giribabu
Isha Arora	Traditional cement to smart cement: Incorporation of self cleaning property	Completed	2018	Dr Jatinder Kumar Ratan
Sourabh Patel	Development of Hybrid gCN/ZnO nanocomposite for the Photocatalytic Degradation of Amoxycilin	Completed	2017	Dr Renu Gupta
Neha Jain	To Study The Effect of Concentration and Temperature on The Rheology of Simple and Complex Fluids	Completed	2017	Dr Renu Gupta
Ankita Sharma	Studies on Degradation of Chlorophenols under UV and Solar Radiation using Modified Titanium Dioxide Photocatalyst	Completed	2017	Dr Renu Gupta

Renuka	Gas Holdup and Mass Transfer Studies in Packed Bubble Column	Completed	2016	Dr Renu Gupta
Aetukuri Rajmohan	Hydrodynamics and Mass Transfer Studies in Bubble Columns for Newtonian and Non-Newtonian Fluids	Completed	2016	Dr Renu Gupta
Vishakha Wadhawan	Pressure Drop Studies in Upflow Packed Bed Reactor	Completed	2015	Dr Renu Gupta
Saurabh Srivastava	Domestic Waste Water Treatment By Electrocoagulation Using Aluminium Electrodes	Completed	2014	Dr Renu Gupta
Monica Sharma	Photocatalytic Decolourization of Rhodamine B using Photo-Fenton Process	Completed	2014	Dr Renu Gupta
Afkham Mir	Drag Coefficient Estimation for non-Spherical Particles in non Newtonian Fluids	Completed	2013	Dr Renu Gupta
Anurag Srivastava	Production of self-cleaning cement using modified titanium dioxide	Completed	2013	Dr Jatinder Kumar Ratan
Sumit Singh	RTD analysis of annular reactor using computational fluid dynamics	Completed	2013	Dr Jatinder Kumar Ratan
Sunny Kumar	Removal of Dyes from Wastewater by Electrocoagulation	Completed	2012	Dr Jatinder Kumar Ratan
Monami Dey	Preparation and Evaluation of Immobilized Titanium Dioxide Photocatalyst for Dye Degradation	Completed	2012	Dr Jatinder Kumar Ratan
Rubal Preet	Chromium(III) uptake by Bentonite Adsorption -Desorption Studies	Completed	2011	Dr Jatinder Kumar Ratan
Sunil Kumar	Removal of Chromium(VI) from Wastewater by Electrocoagulation	Completed	2011	Dr Jatinder Kumar Ratan

Patents :

Name	Reg./Ref. No.	Date of Award/Filing	Organization	Status
Air Cooled and Breathable Single Piece Bodysuit for Personal Protection	202011034189	10.8.20	NIT Jalandhar	Published
Controlled Artificial Gravity Generating Bed	202111001877	15.01.21	NIT Jalandhar	Filed
A Controlled Pushup Exercise Device for Astronauts	202111043897	Sept 2021	NIT Jalandhar	Filed

Admin. Responsibilities :

Position Held	Organization	From	To
Vice President	Indian Institute of Chemical Engineers, Kolkata, IChE	1.1.18	31.12.18
Vice President	Indian Institute of Chemical Engineers, Kolkata, IChE	1.1.13	31.12.13
Controller of Examinations	Indian Institute of Chemical Engineers, Kolkata, IChE	1.1.11	31.12.11
Head, Dept of Chemical Engineering	NIT Jalandhar	6.9.10	4.9.13
President, Faculty Club	NIT Jalandhar	1.1.07	31.12.07
Head, Dept of Chemical Engineering	NIT Jalandhar	26.1.17	2019

Deputy Coordinator TEQIP-II	NIT Jalandhar	20.2.13	4.9.14
Associate Dean (research & Consultancy)	NIT Jalandhar	31.1.15	24.1.17
Warden, Hostel No. 3	NIT Jalandhar	3.10.06	29.10.10
Deputy Chief warden	NIT Jalandhar	5.9.07	29.10.10
Chairman, Postgraduate Committee in Engineering	NIT Jalandhar	5.9.14	
Nodal Office, Equity Action Plan TEQIP-II	NIT Jalandhar	5.9.14	
In-charge, Mass Transfer lab	NIT Jalandhar		
Chairman	Doaba Regional Centre of IChE	1.7.16	
Vice Chairman	Doaba Regional Centre of IChE	1.7.12	30.6.16
Secretary	Doaba Regional Centre of IChE	1.7.08	30.6.10
Chairman Board of Studies in Chemical Engineering	NIT Jalandhar	6.9.10	4.9.13
Chairman Board of Studies in Chemical Engineering	NIT Jalandhar	26.1.17	
Member Board of Studies in Chemical Engineering, Food Technology, Energy Studies	Panjab University, Chandigarh	1.4.13	31.3.15
Head Department of Biotechnology	NIT Jalandhar	05-02-20	05.02.21
Head of the Central Workshop	NIT Jalandhar	05-02-21	till date

Award and Honours :

Title	Activity	Given by	Year
Best paper award in National Conference SREE 2021	Application of Zinc oxide as nano-catalyst for removal of hazardous pollutants in wastewater	NIT Jalandhar	2021
Best paper award in National Conference SREE 2021	Degradation of Bisphenol A from aqueous systems using synthesized hybrid nanocomposite	Department of Chemical Engineering NIT Jalandhar	2021
Best paper award in National Conference SREE 2021	Eosine Y sensitized TiO ₂ as photoanode for application in dye sensitized solar cell (Vikash Kumar, Renu Gupta, Ajay Bansal)	Department of Chemical Engineering NIT Jalandhar	2021
Best Paper Award	International Online Conference on Sustainable Research Technology & Development (IOSCRT-2020), 24-25 Sep, 2020, Panjab University, Chandigarh, India. (Vikash Kumar, Renu Gupta, Ajay Bansal)	Panjab University, Chandigarh, India.	2020
Best Teacher Award	For the academic achievements during the years 2017-2018	NIT Jalandhar	2017-2018

Gold Medal	For securing Overall 1st position in B Tech in University	Pt. Ravishankar Shukla University Raipur	1991
Combine Merit Certificate	For Securing Overall 1st Rank in Combined Merit List	Ravishankar Vishvidyalaya Raipur	1991
Merit Certificate	For Securing 1st Position in 4th year of Chemical Engineering	Ravishankar Vishwavidyalaya Raipur	1990
Merit Certificate	For Securing 1st Position in 3rd year of Chemical Engineering	Ravishankar Vishwavidyalaya Raipur	1989
Merit Certificate	For Securing 4th Position in 1st year of B E. in all Engineering Branches	Ravishankar Vishwavidyalaya Raipur	1987
Silver Medal	For Securing 11th position in Kurukshetra University, Kurukshetra	S A Jain College Ambala City	1985
Bronze Medal	For Securing 3rd position in state in Matriculation examination	Himachal Pradesh Board of School Education, Dharamshala	1984
National Scholastic Excellence Award	For securing 3rd position state in Matriculation Examination	HMT Bangalore	1984
Merit Certificate	National Scholarships Scheme	Government of Himachal Pradesh	1984