

## **Profile Page**



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Designation : Associate Professor

Department : Chemical Engineering

Qualification : PhD Chemical Engineering  
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### **Research Interests :**

Applied Photocatalysis, Pollution Abatement, Computational Fluid Dynamics

### **Other Profile Links :**

#### **Google Scholar Link :**

Google Scholar [Click Here](#)

#### **Personal Web Link :**

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### **Journal Publications :**

Year	Journal	Publication
2022	Nanotechnology for Environmental Engineering, <a href="https://doi.org/10.1007/s41204-021-00182-5">https://doi.org/10.1007/s41204-021-00182-5</a>	Pratibha Attri, Sangeeta Garg, Jatinder Kumar Ratan, 2022. Degradation of 4-aminopyridine using bio-mediated Ag-doped Cu <sub>2</sub> O nanoparticles under visible light.
2022	Environmental Science and Pollution Research. <a href="https://doi.org/10.1007/s11356-021-18269-6">https://doi.org/10.1007/s11356-021-18269-6</a>	Pratibha Attri, Sangeeta Garg, Jatinder Kumar Ratan, 2022. Silver nanoparticles from Tabernaemontana divaricate leaf extract: mechanism of action and bio?application for photo degradation of 4?aminopyridine
2022	Nanotechnology for Environmental Engineering, <a href="https://doi.org/10.1007/s41204-021-00181-6">https://doi.org/10.1007/s41204-021-00181-6</a>	Saeed Ahmed, Muhammad Yasir Akram, Ashutosh Kumar, Amit Dhir, Zahid Ali, Sushil Kumar Kansal, Jatinder Kumar Ratan, 2022. Development of magnesium oxide@carbon fiber paper composite film for the removal of methyl orange from aqueous phase

2022	Chemical Papers. <a href="https://doi.org/10.1007/s11696-022-02093-4">https://doi.org/10.1007/s11696-022-02093-4</a>	Anil Saini, Jatinder Kumar Ratan, 2022. Formulation and evaluation of surface?fluorinated micro sized?TiO <sub>2</sub> based self?cleaning cement: characterization, self?cleaning, depollution and antimicrobial study
2022	Results in Control and Optimization, 8, 100173	Drishti Yadav, Nikhil Pachauri, Om Prakash Verma, Deepak Sahu, Jatinder Kumar Ratan, Tarun Kumar Sharma, 2022. Controller design for optimal operation of Multiple Effect Evaporator of paper mills
2021	Nanotechnology for Environmental Engineering, 6(3), 58	Rakhi Khandelwal, Chanchal Kachhwaha, S.K Arora, Jatinder Kumar Ratan, Rohini Garg, 2021. A sustainable method for synthesis of silver nanoparticles by using Glycyrrhiza glabra extract
2021	Materials Today: Proceedings. <a href="https://doi.org/10.1016/j.matpr.2021.12.063">https://doi.org/10.1016/j.matpr.2021.12.063</a>	Pratibha Attri, Sangeeta Garg, Jatinder Kumar Ratan, Ardhendu S. Giri, 2021. Comparative study using advanced oxidation processes for the degradation of model dyes mixture: Reaction kinetics and biodegradability assay
2021	Journal of Minerals, Metals and Materials Society, <a href="https://doi.org/10.1007/s11837-021-05084-0">https://doi.org/10.1007/s11837-021-05084-0</a>	Pankaj Kumar, Jatinder Kumar Ratan, Neetu Divya, 2021. Synthesis and characterization of CeO <sub>2</sub> , Gr and rGO nanocomposites at different temperature
2021	Iranian Journal of Chemistry and Chemical Engineering, DOI: 10.30492/IJCE.2021.525826.4596	Anil Saini, Jatinder Kumar Ratan, 2021. Surface Fluorinated Microsized-TiO <sub>2</sub> for Formulation of Self-Cleaning Cement
2021	Environmental Technology, DOI: 10.1080/09593330.2021.1882582	Nikita Rajpal, Jatinder K. Ratan, Neetu Divya & Ananda Vardhan Hebbani, 2021. Bioremediation of greywater using a novel bacterial-fungal consortium: optimization and validation of the operating parameters in-vitro
2021	Research on Chemical Intermediates, 47 (4), 1535-1562. DOI: 10.1007/s11164-020-04381-8	Pratibha, Sangeeta Garg, Jatinder Kumar Ratan. Kinetic modelling and proposed mechanistic pathway for photocatalytic degradation of 4-aminopyridine using cuprous oxide nanoparticles
2020	ACS Applied Materials & Interfaces, 12 (46), 52136-52145	Vera S. Bieber, Egemen Ozelik, Harrison J. Cox, Christopher J. Ottley, Jatinder K. Ratan, Mustafa Karaman, Mustafa Tabakci, Simon K. Beaumont, Jas Pal S. Badyal, "Capture and Release Recyclable Dimethylaminomethyl-Calixarene Functional Cloths for Point-of-Use Removal of Highly Toxic Chromium Water Pollutants"
2020	Materials Letters, 260, 126888	Anil Saini, Isha Arora, Jatinder Kumar Ratan, 2020. Photo-induced hydrophilicity of micro sized-TiO <sub>2</sub> based self-cleaning cement
2020	Journal of the Indian Chemical Society, 97(3), 320-325	Pratibha, Sangeeta Garg, Jatinder Kumar Ratan, 2020. Degradation of 4-amino pyridine onto cuprous oxide nanoparticles synthesized from Tabernaemontana divaricate extract
2020	Journal of the Indian Chemical Society, 97(3), 478-482	Nikita Rajpal, Neetu Divya, Shalini Sharma, K.J. Balasubramani, Jatinder Kumar Ratan, 2020. Treatment of greywater using consortium of micrococcus luteus, rhodococcus equi and aspergillus niger
2020	Journal of the Iranian Chemical Society. <a href="https://doi.org/10.1007/s13738-020-02014-w">https://doi.org/10.1007/s13738-020-02014-w</a>	Pankaj Kumar, Neetu Divya, Jatinder Kumar Ratan, 2020. Study on the physic-chemical properties of reduced graphene oxide with different degrees of reduction temperature
2019	Materials Letters, 244, 178-181	Jatinder Kumar Ratan, Anil Saini, 2019. Enhancement of photocatalytic activity of self-cleaning cement
2019	Indian Journal of Environmental Protection, 39(5), 466-471	Jatinder Kumar Ratan, 2019. Groundwater Characterization and Treatment using UV/H <sub>2</sub> O <sub>2</sub> Process
2019	Sustainable Engineering, 30 (2019), 85-94	Pankaj Kumar, Neetu Divya, Jatinder Kumar Ratan, 2019. Synthesis and characterization of chemically derived graphine oxide from graphite

2018	Materials Today: Proceedings, 5, 3334-3345	Jatinder Kumar, Manjit Kaur, Bharadwaj Adiraju. Synthesis of activated carbon from agricultural waste: Characterization, parametric and isotherms study
2018	Materials Research Express, 5, 115509	Jatinder Kumar Ratan, Anil Saini, Priyanshu Verma, 2018. Microsized-titanium dioxide based self-cleaning cement: Incorporation of calcined dolomite for enhancement of photocatalytic activity
2018	India 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.
2017	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)
2017	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
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	Material 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
2015	Material Science Forum, 734, 317-324	Jatinder Kumar, Ajay Bansal. Degradation of acid red 27 in sunlight using TiO <sub>2</sub>
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	Indian Journal of Environmental Protection 25 (5), 511-515	Jatinder Kumar, AK Jana, A Bansal, R Garg. Development of correlation for BOD and COD for refinery waste
2014	International Journal of Engineering Technology Science and Research, 5(3), 340-342	Isha Arora, Jatinder Kumar Ratan, Ajay Bansal. TiO <sub>2</sub> photocatalysis in cementitious systems.
2014	International Journal of Engineering Technology, Management and Applied Sciences, 4(5), 191 - 205	Monica Bhankhar, Bharadwaj Adiraju, Jatinder Kumar Ratan. Preparation and characterization of activated carbon from terminali arjuna and adsorption studies
2014	Emerging Trends in Chemical Engineering, 3(2), 11-17.	Jatinder Kumar Ratan. Synthesis and Immobilization of N-doped Titanium Dioxide for Degradation of Amaranth Dye under Visible Light Irradiation from Light Emitting Diodes.
2014	Journal of NanoScience, NanoEngineering & Applications, 4(3), 23-31.	Naveen Mittal, Priyanshu Verma, Jatinder Kumar. Synthesis, characterization and photocatalytic activity of bismuth doped titanium dioxide under different light sources.
2014	Nano Trends, 16 (2), 39-42.	Priyanshu Verma, Anurag Srivastava, Naveen Mittal, Jatinder Kumar. Photocatalytic disinfection using titanium dioxide: Use of CFL as environmental disinfectant.
2014	International Journal of Engineering Research and Applications, 4 (7), 58-65.	Priyanshu Verma, Jatinder Kumar. Degradation and microbiological validation of meropenem antibiotic in aqueous solution using UV, UV/H <sub>2</sub> O <sub>2</sub> , UV/TiO <sub>2</sub> and UV/TiO <sub>2</sub> /H <sub>2</sub> O <sub>2</sub> processes.
2014	International Journal of ChemTech Research, 2(3), 547-1552.	Jatinder Kumar, Ajay Bansal. Sol-gel derived films of nano-crystals of TiO <sub>2</sub> for photocatalytic degradation of azorubine Dye.
2014	International Journal of ChemTech Research, 2(3), 1537-1543.	Jatinder Kumar, Ajay Bansal. Dual effect of photocatalysis and adsorption in degradation of azorubine dye using nano-sized TiO <sub>2</sub> and activated carbon immobilized with different techniques.

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.
2013	Journal of Modern Chemistry & Chemical Technology 4 (3), 1-6	Anurag Srivastava, Jatinder Kumar. Design and Development of an Optical Fiber pH Sensor using an Artificial Neural Network.
2009	Kathmandu University Journal of Science Engineering & Technology, 5(2), 79-87.	Jatinder Kumar, A. Jana, Cell growth prediction of bacillus licheniformis through artificial neural network at simultaneous multiple variation in concentration of nutrients in media.
2005	Paintindia, LV (12), 67-72	Asim K Jana, Amit Jain, Jatinder Kumar. Volatile organic compounds (VOCs) in paints and its reduction.

## Conference Publications :

Year	Conference	Publication
2021	CHEMBIOEN-2021	Jatinder Kumar Ratan, Shagun Agarwal, Deepak Sahu, Bhisham Kumar, Dhurandhe, Anchal Bahman, Kanchan, Nitin Naresh Pandhare, Om Prakash Verma, 2021. Incident heat flux measurements with efficient plate thermometer in the fire test environment
2021	CHEMBIOEN-2021	Jatinder Kumar Ratan, Anil Saini, 2021. Microsized-Titanium Dioxide based Self-cleaning Cement: Insights into Self- cleaning and Antimicrobial Activity Chemistry
2021	CHEMBIOEN-2021	Jatinder Kumar Ratan, Sreeshma Gopal, 2021. Self-cleaning Paint with Photocatalytic Properties
2021	CHEMBIOEN-2021	Jatinder Kumar Ratan, Ankit Choudhary, Mansvi Vohra, Vivek Kumar Singh, 2021. Formulation of Cement Paint
2021	CHEMBIOEN-2021	Jatinder Kumar Ratan, Nikita Rajpal, Neetu Divya, 2021. Bioremediation of Pesticides from domestic greywater by bioaugmented microbial consortium
2021	CHEMBIOEN-2021	Jatinder Kumar Ratan, Pratibha Attri, Sangeeta Garg, Ardhendu Sekhar Giri, 2021. Degradation Efficiency of 4-Aminopyridine using silver nanoparticles from Tabernaemontana Divaricate leaf extract
2021	CHEMBIOEN-2021	Jatinder Kumar Ratan, Pratibha Attri, Sangeeta Garg, 2021. Degradation of 4-Aminopyridine using Bio-mediated Ag doped Cu <sub>2</sub> O nanoparticles under visible light
2021	CHEMBIOEN-2021	Jatinder Kumar Ratan, Drishti Yadav, Om Prakash Verma, Deepak Sahu, Tarun kumar Sharma, Nikhil Pachauri, 2021. Energy Optimization and Control of Multiple Effect Evaporator of Paper Mills
2021	International Chemical Engineering Conference (ICHEC-2021)	Jaspinder Kaur, Jatinder Kumar Ratan, Anurag Kumar Tiwari, 2021. Heat Transfer Study from Square Cylinder Immersed in a Water based Nanofluid: Effect of Orientation
2020	International Conference on Advances in Chemical Engineering , UPES Dehradun	Jaspinder Kaur, Anurag Kumar Tiwari, Jatinder Kumar Ratan, 2020. Forced convection heat transfer from a solid cone in Nano fluids: Effect of orientation

2020	CHEMBIOEN-2020	Pratibha, Sangeeta Garg, Jatinder Kumar Ratan, 2020. Degradation of 4-amino pyridine onto cuprous oxide nanoparticles synthesized from Tabernaemontana divaricate extract
2020	CHEMBIOEN-2020	Nikita Rajpal, Neetu Divya, Shalini Sharma, K.J. Balasubramani, Jatinder Kumar Ratan, 2020. Treatment of greywater using consortium of micrococcus luteus, rhodococcus equi and aspergillus niger
2020	CHEMBIOEN-2020	Amitendra Singh, D. Giribabu , Jaspreet Kaur, Jatinder Kumar Ratan, 2020. Enhancement of drying rate of polyurethane coatings using dibutyltindilaurate (DBTDL) for commercial applications
2020	CHEMBIOEN-2020	Anil Saini, Jatinder Kumar Ratan, 2020. Codoping of Titanium Dioxide
2020	CHEMBIOEN-2020	Nikita Rajpal, Neetu Divya, Shalini Sharma, K.J. Balasubramani, Jatinder Kumar Ratan, 2020. Treatment of greywater using consortium of micrococcus luteus, rhodococcus equi and aspergillus niger
2020	CHEMCON-2020	Jaspinder Kaur, Anurag Kumar Tiwari, Jatinder Kumar Ratan, 2020. Forced convection heat transfer from a tilted square cylinder in nano fluids: Effects of confinement ratio (BEST PAPER AWARD)
2019	International Conference of Fluid Flow, Heat and Mass Transfer (FFHMT'19), Ottawa, Canada	Jaspinder Kaur, Anurag Kumar Tiwari, Jatinder Kumar Ratan, 2019. Hydrodynamic study of power-law fluids across unconfined semi-circular cylinder at low Reynolds numbers: Effect of orientation angle, 178 (1-8)
2019	2nd International Conference on Materials and Manufacturing (ICOMM-19), Deakin University, Geelong, Australia	Anil Saini, Jatinder Kumar Ratan, 2019. Photocatalytic depollution performance of self-cleaning cement, 21
2019	National Workshop on Catalysis for Clean Energy and Safe Environment, PU Chandigarh	Anil Saini, Jatinder Kumar Ratan, 2019. Modified Microsized-TiO <sub>2</sub> for Better Photocatalytic Efficiency
2019	ACEE-19	Pankaj Kumar, Neetu Divya, Jatinder Kumar Ratan, 2019. Catalytic properties of graphene oxide and graphene based composite materials: A review
2019	ACEE-19	Pratibha, Sangeeta Garg, Jatinder Kumar Ratan, Ardhendu S Giri, 2019. Eco friendly development of cuprous oxide nanoparticles using tabernaemontana divaricata and its photocatalytic activity against pharmaceutical compounds
2019	ACEE-19	Vinay Kumar Midha, Jatinder Kumar Ratan, Ajay Sharma, Simran Sharma, 2019. Study on self-cleaning and anti-microbial performance of low temperature synthesized nitrogen doped titanium dioxide for multiple applications
2018	National Conference on Advances in Chemical Science & Technology	Pratibha, Sangita Garg, Jatinder Kumar Ratan. A recent technology used for the treatment of pharmaceutical waste water.
2018	National Conference on Advances in Chemical Science & Technology	Isha Arora, Shailesh Bharti, Jatinder Kumar Ratan. Performance of self-cleaning cement with varying amounts of photocatalyst.

2018	CHEMCON-2018	Jaspinder Kaur, Anurag Kumar Tiwari, Jatinder Kumar Ratan, 2018. Viscoelastic fluid flow over a tilted squar cylinder in creeping flow regime.
2018	CHEMCON-2018	Pratibha, Sangeeta Garg, Jatinder Kumar Ratan, 2018. Photocatalytic degradation of 4-Aminopyridine by bio-mediated Cu <sub>2</sub> O nanoparticles
2018	CHEMCON-2018	Pankaj Kumar, Neetu Divya, JK Ratan, 2018. Catalytic properties of heterostructure graphene-based metrix materials for environment: A review
2018	International conference on Environmental Geotectynology, Recycled Waste Materials and Sustainable Engineering	Pankaj Kumar, Neetu Divya, Jatinder Kumar Ratan. Synthesis and characterization of chemically derived graphene oxide from graphite.
2018	International Conference on Research Trends in Engineering, Applied Science and Management	Isha Arora, Jatinder Kumar Ratan, Ajay Bansal. TiO <sub>2</sub> photocatalysis in cementitious systems.
2017	International Conference on Research Trends in Engineering, Applied Science and Management	Madhuri, Jatinder Kumar Ratan. Performance Analysis of Shell and Tube Heat Exchanger using CFD.
2017	International Conference on Latest Concepts in Science, Technology, Management and Humanities	Monica, Bharadwaj Adiraju, Jatinder Kumar Ratan. Preparation and Characterization of activated carbon from terminali arjuna and adsorption studies.
2017	International Conference on Material Characterization and Processing	Jatinder Kumar Ratan, Manjit Kaur, Bharadwaj Adiraju. Synthesis of activated carbon from agricultural waste: Characterization, parametric and isotherms study.
2017	International Conference on Chemical and Biochemical Engineering, Sydney	Jatinder Kumar. Optimization of process parameters of photocatalytic process using computational fluid dynamics.
2016	CHEMCON-2016	Pratibha Attri, Sangita Garg, Jatinder Kumar Ratan, Aridhendu Giri. A comparative study on oxidation of reactive model dye mixture by advanced oxidation processes: Reaction kinetics and biodegradability assay
2016	National Conference on Recent Advances in Chemical & Environmental Engineering	Nikita Rajpal, Jatinder Kumar Ratan. Role of fungus in waste water treatment: A review.
2016	National Conference on Recent Advances in Chemical & Environmental Engineering	Pratap Honemane, Jatinder Kumar Ratan. Photocatalysis for degradation of Amaranth dye using light emitting diodes.
2016	National Conference on Recent Advances in Chemical & Environmental Engineering	Jay Bulani, Sunpreet Singh, Jatinder Kumar Ratan. A review on photocatalytic degradation of organic dyes in presence of nanostructured titanium dioxide.
2016	National Conference on Recent Advances in Chemical & Environmental Engineering	Praveen Kumar, Jatinder Kumar Ratan. Assessment of physio-chemical water quality parameters of river Gomti.
2016	National Conference on Recent Advances in Chemical & Environmental Engineering	Manjeet Kaur, Jatinder Kumar Ratan. Preparation & characterization of activated carbon.
2016	National Conference on Recent Advances in Chemical & Environmental Engineering	Sravan Kumar, Sarbjit Singh, Jatinder Kumar Ratan, Rahul Mor. Assessment of water quality on river Kali Bein using multivariate statistical techniques.
2016	International Conference on Humanizing Work and Work Environment	Pankaj Kumar, Jatinder Kumar Ratan, Neetu Divya. Hydrothermal synthesis of cerium oxide/graphene (CeO <sub>2</sub> /G) nanocomposite as diesel additive for environmental pollution control.

2015	International Conference on Chemical Engineering, Chicago	1) Jatinder Kumar, Ajay Bansal. Simulation of annular reactor used for photocatalytic degradation
2014	International Conference on Emerging Trends in Traditional and Technical Textiles	Priyanshu Verma, Jatinder Kumar. Photocatalytic degradation of Beta-lactam antibiotics.
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.
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	2) Jatinder Kumar, Ajay Bansal. Study of flow behaviour of aqueous solution of rhodamine in annular reactor using computational fluid dynamics.
2012	CHEMCON-2012	11) Sumit S Arora, J. Kumar, Ajay Bansal, 2012. RTD analysis of annular reactor using CFD simulations.
2012	CHEMCON-2012	A. Srivastava, Jatinder Kumar, Ajay Bansal. TiO <sub>2</sub> photocatalysis in architectural concrete: A review.
2012	CHEMCON-2012	A. Srivastava, Jatinder Kumar, Ajay Bansal. Comparative analysis of photodegradation efficiencies of ZnO & TiO <sub>2</sub> : A review.
2012	CHEMCON-2012	Monika Sharma, Jatinder Kumar, Ajay Bansal. Photocatalytic degradation of Rhodamine B dye using Photo-Fenton process.
2012	CHEMCON-2012	Monami Dey, Jatinder Kumar, Ajay Bansal. Immobilization of titanium dioxide: Photocatalytic degradation of amaranth and its kinetic study.
2012	CHEMCON-2012	Anurag Srivastava, Jatinder Kumar, Ajay Bansal. Comparative analysis of photodegradation efficiencies of Fenton reagent, ZnO and TiO <sub>2</sub> .
2012	CHEMCON-2012	Monami Dey, Jatinder Kumar, Ajay Bansal. Preparation and evaluation of immobilized titanium dioxide photocatalyst for dye degradation.
2012	CHEMCON-2012	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-2012	Nitish Raizada, Prince Kumar, Jatinder Kumar. Development and design of an artificial neural network in signal processing of optical fibre pH sensor
2012	CHEMCON-2012	Gaurav Kaila, Jatinder Kumar. Optimization of distillation of benzene toluene process.
2012	CHEMCON-2012	Anuj Juneja, Kuber Kushwaha, Sumit S.Arora, J. Kumar, Ajay Bansal. Production of electricity by organic photovoltaic cells.
2012	CHEMCON-2012	Anuj Juneja, Sumit S.Arora, Anmol Gupta, J. Kumar, Ajay Bansal. Review of synthesis of solid catalysts and applications for biodiesel production.
2012	CHEMCON-2012	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	3) 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	4) Jatinder Kumar, Ajay Bansal. Photocatalytic degradation of amaranth dye over immobilized nano-crystals of TiO <sub>2</sub>
2010	International Conference on Production and Industrial Engineering	Sumit Singh, Ajay Bansal, Jatinder Kumar. Enhancement of efficiency of circular sieve tray using CFD simulations
2008	World Congress on Engineering and Computer Science, San Francisco	Vipan Kumar, Jatinder Kumar. Kinetics of jatrophacurcas transesterification in batch reactor.
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	5) Jatinder Kumar, Ajay Bansal, MK Jha. Comparison of statistical and neural network techniques in predicting physical properties of various mixtures of diesel and biodiesel
2006	CHEMCON-2006	A.K.Jana, R Sharma, Sangeeta Garg, Jatinder Kumar. Production and properties of LDPE- starch blend films laminated with LDPE.
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/ISSN No.	Year
Book Chapter	A Review on Titanium Dioxide Based Photocatalytic Cement: Self-cleaning Cement	Springer	Anil Saini, Jatinder Kumar Ratan	978-3-030-96553-2	2022
Book	Advances in Chemical, Bio and Environmental Engineering	Springer	Ratan, J.K., Sahu, D., Pandhare, N.N., Bhavanam, A. (eds)	978-3-030-96553-2	2022
Book Chapter	Incident Heat Flux Measurements with Efficient Plate Thermometer in the Fire Test Environment	Springer	Shagun Agrawal, Deepak Sahu, Bhisham Kumar Dhurandher, Anchal Bahman, Jatinder Kumar Ratan, Kanchan, Nitin Naresh Pandhare, Om Prakash Verma	978-3-030-96553-2	2022
Book Chapter	Environmental and Toxicological Implications of Nanopharmaceuticals – An Overview. Nanopharmaceutical: Principles and Applications	Springer	Priyanshu Verma, Jatinder Kumar Ratan		2021
Book Chapter	Assessment of the negative effects of various inorganic water pollutants on the biosphere - An overview	Elsevier	Priyanshu Verma, Jatinder Kumar Ratan		2020



Book	Photocatalytic degradation of amaranth dye	Lambert Academic Publishing, Germany	Jatinder Kumar, Ajay Bansal	978-3-8433-6607-6	2010
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## Research Projects :

Role	Project Type	Title	Funding Agency	From	To	Amount	Status	Co-Investigator
Principal Investigator	R & D	Development and Evaluation of Self-cleaning Cement	JK Cement Ltd	03-08-2017	03-09-2020	20.0 lacs	Completed	
Principal Investigator	Consultancy	Study on Characteristics of Water of Holy Bein (Sultanpur Lodhi) and Its Effect on Fishes	Punjab Pollution Control Board	01-01-2017	31-12-2017	3.0 lacs	Ongoing	
Principal Investigator	R & D	Study on Treatment of Groundwater of A B Sugars Ltd	A B Sugars Ltd	01-01-2015	31-12-2015	1.0 lacs	Completed	
Principle Investigator	R & D	Preparation and Characterization of Activated Carbon	TEQIP-II	29-12-2015	30-07-2016	0.5 lacs	Completed	
Principle Investigator	R & D	TiO <sub>2</sub> Photocatalysis in Cementitious System	TEQIP-III	05-03-2018	09-08-2018	0.2 lacs	Completed	Dr Ajay Bansal
Principal Investigator	R&D	Studies on Wet on Wet Coating for Railway Coaches to Reduce the Cycle Time of Process	GS Industries	03-09-2019		10.5	Ongoing	
Principal Investigator	R&D	Testing of UV Based Products	TEQIP-III	29-07-2020		2.0 lacs	Ongoing	Dr Mahesh Sah
Principal Investigator	Consultancy	Quantification of Ash Generation	GVK Power (Goindwal Sahib) Ltd	30-08-2019	27-02-2020	1.18 Lacs	completed	

Principal Investigator	Consultancy	Hydrogeological Study of the Area in the Vicinity of SEL Manufacturing Company Ltd, Nawashahar, Punjab	SEL Manufacturing Company Ltd	22-09-2020		17.11 Lacs	Ongoing	Dr Mahesh Patel
Principal Investigator	Consultancy	Environmental audit of Ms Trident Ltd (Towel Division), Barnala	Punjab Pollution Control Board, Patiala	29-12-2020		7.257 Lacs	Ongoing	Prof. SK Sinha & Dr NN Pandhare
Principal Investigator	Consultancy	Ground Water Study for the Area Inside the Factory and Outside the Factory of Rana Sugars Ltd., Buttar Seviyan, Baba Bakala, Amritsar	Rana Sugars Ltd, Amritsar	2022		8.85 Lacs	Ongoing	Dr Mahesh Patel
Principal Investigator	Consultancy	Treatability Study of Leachate Generated at Dumpsite of Amritsar	Averda India, Amritsar	15-11-2021		9.23	Ongoing	Dr Mahesh Patel

### Events Organized :

Category	Type	Title	Venue	From	To	Designation
Conference	National	Advances in Chemical & Environmental Engineering (ACEE-16)	NIT Jalandhar	22-04-2016	23-04-2016	Joint Organizing Secretary
Short Term Course	National	Energy & Environment Management	NIT Jalandhar	19-10-2013	23-10-2013	Coordinator
Conference	International	CHEMCON-2012	NIT Jalandhar	27-12-2012	30-12-2012	Incharge (Accommodation)
Workshop	National	Water Quality and Conservation	Lidhran, Jalandhar	03-09-2007	03-09-2007	Coordinator
Conference	International	S-CHEMCON-2008	NIT Jalandhar	26-09-2008	27-09-2008	Treasurer
Short Term Course	National	Application of Six Sigma in Indian Industry	NIT Jalandhar	09-06-2014	14-06-2014	Co-coordinator

Conference	International	Biomedical Engineering and Assistive Technologies (BEATS-2010)	NIT Jalandhar	17-12-2010	19-12-2010	Executive Committee Member
Conference	National	2nd National Conference on Advances in Chemical and Environmental Engineering (ACEE-19)	NIT Jalandhar	23-03-2019	24-03-2019	Organizing Secretary
Conference	International	International Conference on Chemical, Bio & Environmental Engineering (CHEMBIOEN-2020)	NIT Jalandhar	13-02-2020	14-02-2020	Organizing Secretary
STC	National	Short Term Course on Catalysis	NIT Jalandhar	10-08-2019	14-08-2019	Coordinator
STC	National	Short Term Course on "Happiness & Yoga In Engineering Practice"	NIT Jalandhar	22-06-2020	26-06-2020	Coordinator
STC	National	Short Term Course on Material Science & Engineering	GWEC, Ajmer (Mentee Institute)	09-12-2019	13-12-2019	Coordinator
Conference	International	2nd International Conference on Chemical, Bio & Environmental Engineering (CHEMBIOEN-2021)	NIT Jalandhar	20-08-2021	21-08-2021	Chairman

### Professional Affiliations :

Designation	Organization
Life Member	Indian society for Technical Education, New Delhi
Life Member	International Association of Engineers (IAENG), Hong Kong
Life Member	World Academy of Science, Engineering & Technology (WASET), USA
Life Member	International Association of Advanced Materials
Executive Member	IICHe Doaba Regional Centre
Faculty Advisor	IICHe Dr BR Ambedkar NIT Jalandhar Student Chapter
President	Indian Chemical Society - North Branch
Founder Chairman	Society of Chemical, Bio and Environmental Engineering (CHEMBIOEN)
Elected Fellow	Indian Chemical Society
Executive member	Catalyst Society of India, Chandigarh Chapter

### PhD Supervised :

Scholar Name	Research Topic	Status	Year	Co-Supervisor
Jaspinder Kaur	Numerical Studies of Momentum and Heat Transfer Phenomena from a BluffBody in Water based Nanofluid	Ongoing	2018	Dr AK Tiwari
Anil Saini	Development and Evaluation of Self-cleaning Cement	Ongoing	2018	

Ms Pratibha	Bio-mediated Synthesis and Characterization of Silver doped Cuprous Oxide Nanoparticles for Degradation of Target Pollutants	Ongoing	2016	Dr Sangeeta Garg
Ms Nikita Rajpal	Bioremediation of Water using Microbial Consortium	Ongoing	2015	Dr Neetu Divya
Mr Pankaj Kumar	Synthesis and Characterization of Cerium Oxide/Graphene (CeO <sub>2</sub> /G) Nanocomposites for Diesel	Ongoing	2015	Dr Neetu Divya

## PG Dissertation Guided :

Student Name	Dissertation Title	Status	Year	Co-Supervisor
Amitendra Singh	Analysis of Various Concentration of Dibutyltin Dilaurate (DBTDL) in Polyurethane Paint for Reducing the Cycle Time of Paint Application	Completed	2020	
Isha Arora	Traditional Cement to Smart Cement: Incorporation of Self-cleaning Property	Completed	2018	
Ajay Sharma	Multifunctional Finishing of Woven Fabrics Using TiO <sub>2</sub> Nanoparticles and Doped N-TiO <sub>2</sub> Nanoparticles	Completed	2017	Dr Vinay Midha
Monica	Preparation and Characterization of Activated Carbon from Terminalla Arjuna	Completed	2017	Dr Neetu Divya
Madhuri	Performance Analysis of Shell and Tube Heat Exchanger	Completed	2017	
Praveen Kumar	Investigation of Physio-chemical Parameters for Monitoring of River Water Quality: A Case Study of Gomti River in India	Completed	2016	Dr SS Bal
Honemane Pratap	Photocatalysis for Degradation of Amaranth Dye using Light Emitting Diodes	Completed	2016	
Manjit Kaur	Preparation and Characterization of Activated Carbon	Completed	2016	
Ajit Singh Jayswal	Groundwater Characterization and Treatment using UV/H <sub>2</sub> O <sub>2</sub> Process	Completed	2015	
Monica Sharma	Photocatalytic Decolourization of Rhodamine B using Photo-Fenton Process	Completed	2014	Dr Ajay Bansal
Naveen Mittal	Synthesis, Characterization and Photocatalytic Activity of Bismuth Doped-Titanium Dioxide under Different Light Sources	Completed	2014	
Priyanshu Verma	Photocatalytic Degradation of Meropenem Antibiotic in Aqueous Solution and Urine Sample using UV/TiO <sub>2</sub> and UV/ TiO <sub>2</sub> /H <sub>2</sub> O <sub>2</sub> Processes	Completed	2014	
Anurag Srivastava	Production of self-cleaning cement using modified titanium dioxide	Completed	2013	Dr Ajay Bansal
Sumit Singh	RTD analysis of annular reactor using computational fluid dynamics	Completed	2013	Dr Ajay Bansal
Monami Dey	Preparation and Evaluation of Immobilized Titanium Dioxide Photocatalyst for Dye Degradation	Completed	2012	Dr Ajay Bansal

## Patents :

Name	Reg./Ref. No.	Date of Award/Filling	Organization	Status
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An improved packed bed photocatalytic reactor with high and uniform illumination and an associated technique of purification	Patent No. 361300	16/03/2021	Patent Office, New Delhi	Granted
Biodegradable packaging films from modified barley husk and method of synthesis thereof	20201107500	21-02-2020	Patent Office New Delhi	Under Publication
Photocatalytic reactor for water treatment	279651	08-03-2017	Patent Office, New Delhi	Granted
Technology Transfer for development and commercialization of air purifier	NITJ/D/20/315	08-06-2020	HiSafe Electronic Coporation	Technology Transferred and Commercial Air Purifier "AIROSAFE" launched on 11-11-2020
An improved cement paint composition and a method of preparing thereof	202011032783	30-07-2020	Patent Office, New Delhi	Under Examination after publication

### Admin. Responsibilities :

Position Held	Organization	From	To
Deputy Chief Warden	NIT Jalandhar	22-02-2018	09-07-2009
Senior Warden (Hostel 6 & 7)	NIT Jalandhar	13-02-2018	09-07-2009
General Secretary, NITJ Alumni Association	NIT Jalandhar	01-11-2016	till date
Coordinator (PG Scholarship)	NIT Jalandhar	31-01-2015	04-02-2021
Deputy Registrar (Academics)	NIT Jalandhar	2014	2015
Deputy Chairman (Cultural Affairs)	NIT Jalandhar	2015	2016
Warden (Hostel 6)	NIT Jalandhar	2008	2012
Faculty Advisor (Music and Dramatics)	NIT Jalandhar	2005	2009
Treasurer (ISTE NIT Jalandhar Student Chapter)	NIT Jalandhar	2001	2016
Coordinator (Movie Club)	NIT Jalandhar	2016	2017
Faculty Advisor (Athletics)	NIT Jalandhar	2004	2005
Mamber, Pay Anomaly Committee	NIT Jalandhar	2012	2013
Member, House Allotment Committee	NIT Jalandhar	2012	2014
Faculty Advisor ( Technical Club)	NIT Jalandhar	2015	2016
Faculty Advisor (Badminton)	NIT Jalandhar	2012	2015
Faculty Adviser, NCC	NIT Jalandhar	2013	2013
Faculty Advisor Chemical Engineering Society	NIT Jalandhar	2006	2008
Coordinator (NPTEL & SWAYAM)	NIT Jalandhar	07-12-2018	20-02-2020
Associate Dean (Research and Consultancy)	NIT Jalandhar	23-01-2019	04-02-2021
Coordinator (IPR)	NIT Jalandhar	04-02-2021	till date
Associate Dean (Faculty Welfare)	NIT Jalandhar	2021	till date

Coordinator (Campus Safety & Security)	NIT Jalandhar	10-01-2022	
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### Award and Honours :

Title	Activity	Given by	Year
Elected Fellow	Contribution to Academics and Research	Indian Chemical Society, Kolkata, India	2021
Best Paper Award	Paper presentation in CHEMCON-2020	Indian Institute of Chemical Engineers (IChE), Kolkata	2020
Best Teacher Award	For commendable teaching, research and administrative activities	Chairman (Senate), NIT Jalandhar	2020
Gold Medal	Topper in M Tech	Senate, NIT Jalandhar	2010
Outstanding Young Chemical Engineer Award	Contribution in the field of Chemical Engineering	IChE, Kolkata	2008