

Curriculum Vitae

Personal Information

Renuka

Designation: Research Associate, CIAB, Mohali

Date of Birth: 17th August 1991

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Academic Qualification

Ph.D. (Submitted) Chemical Engineering	Dr. B R Ambedkar National Institute of Technology Jalandhar, Punjab	2021 8.69 CGPA
M.Tech Chemical Engineering	Dr. B R Ambedkar National Institute of Technology Jalandhar, Punjab	2016 9.34 CGPA
B.Tech Chemical Engineering	SBS State Technical Campus, Ferozepur, Punjab	2013 81.48%
Intermediate (12th) Non-Medical	Baba Farid Public School Faridkot, CBSE Board	2009 82.20%
Matriculation (10th)	Little Angels High School Faridkot, PSEB Board	2007 81.40%

Awards and Prizes

Gold medal	M.Tech	Institute Topper Dr. B R Ambedkar National Institute of Technology Jalandhar	2016
Gold medal	B.Tech	University Topper Punjab Technical University, Jalandhar	2013

Research Work

Ph.D.

- ❖ Degradation of refractory organic compounds using semiconductor hybrid nanocomposites

M.Tech

- ❖ Gas holdup and mass transfer studies in packed bubble column

Research Interests

- ❖ Synthesis of nano-composites with varying size and shapes.
- ❖ Applications of Nanomaterials in fabrication of nano-sensors/devices for waste-water treatment
- ❖ Fabrication of novel materials for degradation of new and emerging persistent organic pollutants

Journal Publications

- ❖ **Renuka Garg**, Renu Gupta, Nirmal Singh, Ajay Bansal (2021) “*Eliminating pesticide quinalphos from surface waters using synthesized GO-ZnO nanoflowers: Characterization, degradation pathways and kinetic study*”, *Chemosphere* 286, 131837. <https://doi.org/10.1016/j.chemosphere.2021.131837> **SCI, IF : 7.086**
- ❖ **Renuka Garg**, Renu Gupta, Nirmal Singh, Ajay Bansal (2021) “*Characterization and performance evaluation of synthesized ZnO nanoflowers, nanorods, and their hybrid nanocomposites with graphene oxide for degradation of Orange G*”, *Environmental Science and Pollution Research*. <https://doi.org/10.1007/s11356-021-14511-3>. **SCI, IF: 4.223**
- ❖ **Renuka Garg**, Renu Gupta, Ajay Bansal (2021) “*Degradation mechanism, reaction pathways and kinetics for the mineralization of Bisphenol A using hybrid ZnO/graphene oxide nano-catalysts*” *Korean Journal of Chemical Engineering* 38(3), 485-497. <https://doi.org/10.1007/s11814-020-0718-8>. **SCI, IF : 3.309**
- ❖ **Renuka Garg**, Renu Gupta, Ajay Bansal (2021) “*Photocatalytic degradation of imidacloprid using semiconductor hybrid nano-catalyst: kinetics, surface reactions and degradation pathways*” *International Journal of Environmental Science and Technology* 18:1425–1442. <https://doi.org/10.1007/s13762-020-02866-y>. **SCI, IF: 2.860**
- ❖ **Renuka Garg**, Renu Gupta, Ajay Bansal (2021) “*Synthesis of g-C₃N₄/ZnO nanocomposite for photocatalytic degradation of a refractory organic endocrine disrupter*” *Materials Today: Proceedings*, 44: 855–859. <https://doi.org/10.1016/j.matpr.2020.10.787>. **Scoups**

Best Papers Awards

- ❖ **Renuka Garg**, Renu Gupta, Nirmal Singh, Ajay Bansal, *Degradation of bisphenol A from aqueous systems using synthesized hybrid nanocomposite* in the National Conference on Sustainable Research in Energy and Environment (SREE-2021) organized jointly by Department of Biotechnology, Department of Chemical Engineering and Centre for Energy & Environment January 15-16, 2021.
- ❖ **Renuka Garg**, Renu Gupta, Nirmal Singh, Ajay Bansal, *Application of Zinc oxide as nano-catalyst for removal of hazardous pollutants in wastewater* in the National Conference on Sustainable Research in Energy and Environment (SREE-2021) organized jointly by Department of Biotechnology, Department of Chemical Engineering and Centre for Energy & Environment January 15-16, 2021.

Patents Filed

1. Air Cooled and Breathable Single Piece Bodysuit for Personal Protection

Name of Inventor(s), Vishwajeet, **Renuka**, Ajay Bansal, Renu Gupta, K K Deepak, Dilbag
/creators: Singh

Name of the Applicant: Dr. B. R. Ambedkar National Institute of Technology, Jalandhar

Application no./IPR no.: 202011034189

2. Controlled Artificial Gravity Generating Bed

Name of Inventor(s), Vishwajeet, **Renuka**, Ajay Bansal, Renu Gupta, K K Deepak,
/creators: Dilbag Singh

Name of the Applicant: Dr. B. R. Ambedkar National Institute of Technology, Jalandhar

Application no./IPR no.: 202111001877

Technical Skills

- ❖ Have experience in nanomaterials synthesis, characterization and heterogeneous catalysis.
- ❖ Have skills in writing and drafting of manuscripts.
- ❖ Expertise in handling lab equipments such as UV-Vis Spectrophotometer, Total Organic Analyzer, Rheometer, BET, HPLC and FTIR etc.

Experience

Worked as Teaching Assistant during PhD., August 2016- July 2021 at NIT Jalandhar, @ 5 lac per annum.

- ❖ Assisted professor in lectures and coursework.
- ❖ Manage course related labs and inventory required during the semester and perform the experiments.
- ❖ Assisted in lab exam practical questions and conducting quizzes, mid-semester exam and final exams.

Papers Presented in Conferences

International Conferences

- ❖ **Renuka Garg**, Renu Gupta, Nirmal Singh, Ajay Bansal (2021) “*Hydrothermally synthesized recyclable titania nanotubes as photocatalyst for UV assisted degradation of imidacloprid*” International Conference on Recent Technologies and Advanced Materials for Green Energy and Sustainable Environment organized by Department of Chemical Engineering, National Institute of Technology Tiruchirappalli, March 12-13, 2021.
- ❖ **Renuka Garg**, Renu Gupta, Nirmal Singh, Ajay Bansal (2021) “*Eliminating pesticide quinalphos from surface waters using synthesized GO-ZnO nanoflowers: characterization, degradation pathways and kinetic study*” International Conference on Recent Technologies and Advanced Materials for Green Energy and Sustainable

Environment organized by Department of Chemical Engineering, National Institute of Technology Tiruchirappalli, March 12-13, 2021.

- ❖ **Renuka**, Renu Gupta, Ajay Bansal (2020) “*Synthesis and characterization of graphitic carbon nitride nanosheets for degradation of azo dye*” International Online Conference on Sustainable Research Technology & Development (IOSCRT-2020) organized by Dr. SSB University Institute of Chemical Engineering and Technology, Panjab University, Chandigarh, September 24-25, 2020.
- ❖ **Renuka**, Renu Gupta, Ajay Bansal (2019) “*Photocatalytic degradation of azo dyes using synthesized nanocatalyst*” International Conference Chemical Constellation Cheminar, organized by Department of Chemistry, Dr. BR Ambedkar National Institute of Technology, Jalandhar, October 12-13, 2019.
- ❖ **Renuka**, Renu Gupta, Ajay Bansal (2019) “*Degradation of Acid Orange 7 in aqueous solutions using titania based photocatalyst*” International Conference HWWE-2019, organized by Department of Chemistry, Dr. BR Ambedkar National Institute of Technology, Jalandhar, November 9-10, 2019.
- ❖ **Renuka**, Renu Gupta, Ajay Bansal (2018) “*Hydrothermal Synthesis of Titanium dioxide Nanotubes as Photocatalyst for Degradation of Refractory Organic compounds*” Indian Chemical Engineering Congress, 71th Annual Session of Indian Institute of Chemical Engineers organized by Dr. BR Ambedkar National Institute of Technology, Jalandhar, December 27-30, 2018.
- ❖ **Renuka**, Renu Gupta, Ajay Bansal (2016) “*Mass Transfer studies in packed bubble column*” Indian Chemical Engineering Congress, 69th Annual Session of Indian Institute of Chemical Engineers, A.C Tech, Anna University Chennai, December 27- 30, 2016.
- ❖ **Renuka** (2015) “*Advanced Adsorption Material for Waste Water Treatment (Dye)*” presented in International Multi Track Conference organized by CT Institute of Technology, Jalandhar May 22-23, 2015.

National Conferences

- ❖ **Renuka Garg**, Renu Gupta, Nirmal Singh, Ajay Bansal, *Degradation of bisphenol A from aqueous systems using synthesized hybrid nanocomposite* in the National Conference on Sustainable Research in Energy and Environment (SREE-2021) organized jointly by Department of Biotechnology, Department of Chemical Engineering and Centre for Energy & Environment January 15-16, 2021.
- ❖ **Renuka Garg**, Renu Gupta, Nirmal Singh, Ajay Bansal, *Application of Zinc oxide as nano-catalyst for removal of hazardous pollutants in wastewater* in the National Conference on Sustainable Research in Energy and Environment (SREE-2021) organized jointly by Department of Biotechnology, Department of Chemical Engineering and Centre for Energy & Environment January 15-16, 2021.
- ❖ **Renuka**, Renu Gupta, Ajay Bansal (2019) “*Degradation of organic pollutants in waste water using heterogeneous photocatalysts*” A Multitrack National Conference SLIETCON-2019 organized by SLIET Longowal at Chandigarh, March 1-2, 2019.
- ❖ **Renuka**, Renu Gupta, Ajay Bansal (2019) “*A Comparative study on degradation of refractory organic pollutants using different forms of nanocatalysts*” National Conference on Advances in Chemical and Environmental Engineering organized by Department of Chemical Engineering, Dr. BR Ambedkar National Institute of Technology, Jalandhar, March 23-24, 2019.

- ❖ **Renuka**, Renu Gupta, Ajay Bansal, A. Bharadwaj (2018) “*Synthesis of Graphene Oxide as a Support Material for Photocatalysts*” National Conference on Advances in Chemical Science & Technology organized by Department of Chemical Engineering, Dr. BR Ambedkar National Institute of Technology, Jalandhar, April 27-28, 2018.
- ❖ **Renuka**, Rajmohan Aetukuri, Renu Gupta, Ajay Bansal, Nikesh Kumar (2016) “*Prediction of Mass Transfer Coefficient in Gas–Liquid Bubble Column with Newtonian and non-Newtonian fluids*” National conference on Advances in Chemical and Environmental Engineering organized by Dr. BR Ambedkar National Institute of Technology, Jalandhar, March 22-23, 2016.
- ❖ **Renuka**, Renu Gupta, Ajay Bansal (2016) “*Trapping Congo Red Dye from Wastewater with Surfactants Coated Flyash*” 19th Punjab Science Congress organized by SUS Tangori, Mohali, February 7-9, 2016.
- ❖ **Renuka**, Rajmohan, Renu Gupta, Ajay Bansal, Nikesh kumar (2015)“*Innovative Treatment Techniques of Various AOPs*” 2nd National Conference on Advanced Oxidation Processes, Department of Chemical Engineering PU, Chandigarh October 15-16, 2015.
- ❖ **Renuka**, Renu Gupta, Ajay Bansal (2015) “*Recent Advances in Conjugated Polymers for light Emitting Devices*” presented in 2nd National conference organized by SBS State Technical Campus, Ferozepur in FMRA, December 24, 2015.

Short Term Courses Attended

- ❖ Five days Online DST SERB sponsored Short Term Training Programme (STTP) on Electrochemical Technology for Environmental Treatment and Clean Energy Conversion Organized by Department of Chemical Engineering, National Institute of Technology Calicut during November 16-20, 2020
- ❖ One week short term course/ Faculty Development Programme on “*Advances in Enzyme and bioprocessing Engineering*” organized by Department of Biotechnology, NIT Jalandhar February 07-11, 2019.
- ❖ One week short term course on “*Recent Tools and Techniques for Research*” organized by Department of Industrial and Production Engineering, NIT Jalandhar January 25-29, 2019.
- ❖ GIAN International winter term course on “*Chemical Process Safety and Hazards Management*” NIT Jalandhar, November 20 -24, 2017.
- ❖ GIAN International summer term course on “*Landfills and Geo-environmental Engineering*” NIT Jalandhar, May 30-June 3, 2016.
- ❖ Five days short term course on “*Water Quality Management*” NIT Jalandhar, June 20-24, 2016.
- ❖ One week short term course on “*Advances of Statistics in Science and Engineering*” NIT Jalandhar, September 19-25, 2016.
- ❖ Two days workshop on “*Academic Environment in Higher Technical Education: Future perspectives*” NIT Jalandhar, September 3-October 1, 2016.
- ❖ Two days “*Industry Institute Interaction Programme*” NIT Jalandhar, March 5-6, 2016.


- ❖ National seminar on Sustainability of Engineering Education “*Foreign Collaboration in Higher Education*” NIT Jalandhar, March 26-27, 2015.
- ❖ One Week Short Term Course on “*Current Opportunities and New Directions in Chemical Sciences and Technology*” NIT Jalandhar, December 7-13, 2015.
- ❖ One Week ISTE-SRM Short Term Course on “*Recent Advances in Hydrocarbon Engineering*” NIT Jalandhar, September 11-15, 2014.

Professional Memberships

Life member of Indian Institute of Chemical Engineers LAM-61770.

Declaration

I solemnly declare that the information furnished above is true and to the best of my knowledge.



Renuka