Anupama Singh

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Objective

To get a challenging position in a professional organization where I can enhance my skills and strength in conjugation with the company goal. I am willing to work as a key player in challenging and creative environment.

Education

Year	Course	Institute	Grade/%
2019	Ph.D. (Center Environment & Energy)	Indian Institute of Technology, Patna **Thesis submitted**	**8.38 CPI**
2012	M.Tech (Environmental Science & Technology)	National Institute of Technology, Durgapur	**8.78 CGPA III Position**
2009	B.Tech (Biotechnology)	Institute of Engineering and Technology, Bundelkhand University, Jhansi.	**71.25% III Position**
2004	Intermediate (AMU Board)	Girls Senior Secondary school, A.M.U. Aligarh	**60.25%**
2001	High School (AMU Board)	Girls Secondary School, A.M.U. Aligarh	**61.84%**

Experience

- Worked as a **lecturer** of Environmental Science at P.K. Institute of Technology and Management Mathura-Aligarh Road, Birhana (Raya), Mathura- 281206, from 12 Sep.09 to 26 July 10.

- Worked as **Project Engineer** in the DHI (India) Water & Environment Pvt. Ltd. 3rd Floor, NSIC – STP complex, NSIC Bhawan Okhla Industrial Estate New Delhi – 110020 India from 23 July 12 to 30 Nov 12.

Professional Skills

SUBJECTS STUDIED

- Landfill and Solid Waste Technology and Management
- Environment Management (EIA etc.)
- Treatment and Management of Water & Waste Water
- Environmental Analysis
- Environmental Geology and Soil conservation
- Numerical Method & Modeling of Environmental systems

AREAS OF INTEREST

- Microbiology and Waste Water Engineering.
- Impurity Separation from drinking water
- Environmental Chemistry
- Solid, Nuclear and Hazardous Waste Management
- Air Noise Pollution Quality, Control, Monitoring and Analysis

Journal Publications

- **Singh A.,** Raj P. **Sustainable Recycling Model for Municipal Solid Waste in Patna.** Energy & Environment ISSN: 0958305X. DOI: 10.1177/0958305X18787335 **(SSCI)**.

- **Singh A.,** Raj P. **Segregation of Waste at Source Reduces the Environmental Hazards of Municipal Solid Waste in Patna, India.** Archives of Environmental Protection ISSN: 2083-4810, Dec. 2018, volume 44, No. 4 **(SCI).**

- Raj P., **Singh A. A Review of Municipal Solid Waste Management in Developing Countries.** International Journal of Environment and Development ISSN: 0973-3574, **Dec. 2017, Volume 14, No. 2, 234-256. (UGC listed).**

- **Singh A,** Mukhopadhyay D, Sarkar J P, Dutta S. **Study on Effect of plastic on the biodegradation of Vegetable Solid Market Waste through Detail Leachate Analysis.** International Journal of Solid Waste Technology and Management ISSN: 10881697, **Aug. 2014, Volume 40, No. 3, 266-284. (SCOPUS).**

Conference Proceedings Publications

- **Singh A**, Raj P. **Integrated Sustainable Solid Waste Management for Patna**. Proceedings of the 3rd International Conference on Biological Waste as Resource (BWR 2018), The Education University of Hong Kong, **Hong Kong**, **Dec. 17-19, 2018, 123.**

- **Singh A**, Raj P. **Sustainable Recycling Practices to Reduce Health Hazards of Municipal Solid Waste in Patna, India.** Proceedings of 19th International Conference on Environment, Energy and Waste Management (ICEEWM 2017). World Academy of Science, Engineering and Technology (WASET) Mumbai, India, **Feb. 7-8, 2017, 19 (2) Part V, 629-632**. DAI: urn:dai:10.1999/1307-6892/57013. **(ISI)**

- **Singh A**, Raj P. **Sustainable Recycling Model for Municipal Solid Waste in Patna**. Compendium of papers, 5th International Conference on Advance in Energy Research (ICAER 2015). Mumbai, India: Department of Energy Science and Technology, Indian Institute of Technology Bombay, **Dec. 15-17, 2015, 1161-1166**.

- Kumar D, **Singh A**, Sarma A K. **Energy and Exergy analysis of IC Engine for Karanja Biodiesel**. Compendium of papers, 5th International Conference on Advance in Energy Research (ICAER 2015). Mumbai, India: Department of Energy Science and Technology, Indian Institute of Technology Bombay, **Dec. 15-17, 2015, 1092-1098**.

- **Singh A,** Mukhopadhyay D, Sarkar JP, Dutta S. **Biodegradation of Vegetable Solid Market Waste in the presence of Plastic.** Proceedings of International Conference on Environmentally Sustainable Urban Ecosystems (ENSURE 2012), Department of Civil Engineering, Indian Institute of Technology Guwahati, Guwahati 781039, Assam, India, **Feb. 24–26, 2012, 183.**

Conference/Workshops/Symposium

- **Singh A**, Raj P. **Integrated Sustainable Solid Waste Management for Patna**. The 3rd International Conference on Biological Waste as Resource (BWR 2018), The Education University of Hong Kong, **Hong Kong**, **Dec. 17-19, 2018**.

- **Singh A**, Raj P. **Sustainable Recycling Practices to Reduce Health Hazards of Municipal Solid Waste in Patna, India.** Paper presentation in 19th International Conference on Environment, Energy and Waste Management (ICEEWM 2017). World Academy of Science, Engineering and Technology (WASET) Mumbai, India, **Feb. 7-8, 2017**.

- **Singh A**, Participated in a National Symposium 2017 on Environmental Degradation and Its Impact in Children and Women Health. Mahavir Cancer Sansthan & Research Center Patna, Bihar, **Jan. 16, 2017.**

- **Singh A**, Raj P. **Sustainable Recycling Model for Municipal Solid Waste in Patna**. Poster presentation at 5th International Conference on Advance in Energy Research (ICAER 2015). Mumbai, India: Department of Energy Science and Technology, Indian Institute of Technology Bombay, **Dec. 15-17, 2015.**

- **Singh A**, Participated in Workshop on Effective Pedagogy for waste management. Indian Institute of Technology, Patna, **April 18, 2015**.

- **Singh A**, Raj P. **Municipal Solid Waste Management: A Review**. Paper presentation competition on Issues in Solid Waste Management Workshop. Indian Institute of Technology, Patna, **Oct. 11, 2014**.

- **Singh A,** Mukhopadhyay D, Sarkar JP, Dutta S. **Biodegradation of Vegetable Solid Market Waste in the presence of Plastic.** International Conference on Environmentally Sustainable Urban Ecosystems (ENSURE 2012), Department of Civil Engineering, Indian Institute of Technology Guwahati, Guwahati 781039, Assam, India, **Feb. 24–26, 2012.**

- **Singh A**, Attended an International Conference on Sustainable Water Resources Management and Climate Change Adaptation. Department of Civil Engineering, National Institute of Technology Durgapur, **Feb. 17-19, 2011.**

Certificate Courses

- **Singh A,** attended a GIAN course on **Waste Management and Health Care**. Global Initiative for Academic Networks (GIAN), Indian Institute of Technology Patna, **Dec. 03-08, 2018.**

- **Singh A,** attended a GIAN course on **Fuzzy Techniques for Intelligent Decision Making**. Global Initiative for Academic Networks (GIAN), Indian Institute of Technology Patna, **Dec. 11-15, 2017.**

- **Singh A**, attended a GIAN course on **Flexible Statistical Modeling**. Global Initiative for Academic Networks (GIAN), Mangalore University, **Oct. 10-14, 2016.**

- **Singh A** (Enrollment No.: EDU152015113161), Attended a course on **Remote Sensing, Geographical Information System & Global Navigation Satellite System**. Indian Institute of Remote Sensing, Indian Space Research Organization, Department of Space, Government of India, **Aug. 10 - Nov. 27, 2015.**

Academic Research and Projects

1. Academic Research (Ph D): Integrated Sustainable Solid Waste Management to Reduce Health Hazards of young population in Patna

[July, 2014- December 2019]

Abstract: The collected Municipal Solid Waste (MSW) is dumped in open dumping at landfilling sites while the uncollected wastes remain strewn on the roadside, many-a-time clogging drainage in Patna (the capital city of Bihar in India). Such unsafe and inadequate management of MSW causes the spread of bacteria, viruses, particulate matter, dioxins and other harmful pollutants in the surroundings and atmosphere. Hence, due to the repeated exposure of a population to these pollutants can lead to serious health problems such as Diarrhoea/Dysentery, Acute Respiratory Infection (ARI), and Asthma/Chronic Respiratory Diseases (CRD). Therefore, the two-phase study included environment health hazards caused due to MSW in the young population of Patna and preventive Municipal Solid Waste Management (MSWM) models. Primary and secondary data on diseases in the community of Patna, specifically youth, has been collected from the Annual Health Survey (AHS) 2010-13 and health practitioners during 2017, respectively. Correspondingly, the primary data on MSW and lack of MSWM from 127 households in urban Patna, India was collected. during 2015-16, using random sampling method. The stakeholders of the MSWM system in Patna has also been interviewed during 2017. Selected diseases show the incidence rate and increasing prevalence rate. Moreover, the same pattern has been followed in the trend forecast. The young population has an incidence of 70.70% of vector-borne illnesses like Typhoid/Dengue/Malaria. Similarly, for ARI, approximately 56.59% of infected patients belonged to youth, whereas, in the case of Asthma/CRD, 34.76% were young patients. The preventive MSW management models for the reduction of environmental health hazards are logistic regression, Sustainable Recycling Model (SRM) and Integrated Sustainable Solid Waste Management (ISSWM) model through the Analytical Hierarchy Process (AHP). Logistic regression model odds ratios and their 95% confidence intervals were used to show the strength of the associations among segregation of wastes at source, segregation behaviour, collection bins in the area, a distance of collection bins from a residential area, and transportation of MSW. The 'segregation of waste at source' has a robust scope to accomplish sustainable recycling at urban Patna to manage MSW with the overall accuracy of 92.126%, which proves a better fit logistic regression model. The SRM is based on the similitudes in the recommendations required to attain 'sustainable development' and 'sustainable recycling'. SRM has six gears drive by various variables. Each gear has been tested for its existence in Patna. As a result, 'social aspect gear drive by three variables in sustainable recycling model is public health; public awareness; health of workers involves in recycling' shows complete non-existence behaviour. Hence, a survey (n = 127) has been performed to evaluate the success factors for social aspect gear existence in sustainable recycling model. Multivariate statistical analysis, i.e., ANOVA has been executed the comparison of respondents' perception of success factors and success factor groups affecting sustainable recycling of MSW in Patna. The ISSWM strategy for achieving better management of MSW with integration and sustainability through multiple criteria approach based on AHP for group decision support. Hence, this study concludes that 'segregation of waste at source' helps to attain SRM, such ISSWM strategy has been selected through AHP. That is the most viable approach to manage MSW in Patna and would eventually reduce environmental pollutants for public health safety.

2. Project (M.Tech.): Effect of plastic on the biodegradation of Solid Waste.

[May, 2010- Apr, 2012]

Description: In the present study, biodegradation of vegetable wastes has been studied in the presence of plastic with an aim to assess the effect of plastic on the rate of biodegradation and investigate the change of structure of plastic during experimentation.

The weight of plastic is varied from 0% to 15%, 40-micron plastic is used for such purpose. The anaerobic bioreactor has been used to facilitate biodegradation process, and it was run for fifty-six days. Leachate has been collected at a regular interval and analyzed for different parameters like pH, COD, DO, BOD, Kjeldahl nitrogen, TOC, etc. The cow-dung seed has also been used to enhance the biodegradation process. Its weight has been varied from 0% to 10%.

3. Minor & Major Project (B.Tech.): AmBisome treatment in fungal infection a nano-approach. [Aug, 2008 – Dec, 2008 & Feb, 2009 - May, 2009]

Description: Amphotericin B, a polygene antibiotic, is the drug of choice for a variety of systemic fungal infections that were usually fatal before its introduction. The cationic mechanism of this compound has been the subject of intensive investigation over many years and is thought to reside in its ability to form membrane ion channels particularly in the presence of sterols. That these channels and associated lethal permeability changes occur at somewhat lower membrane concentrations in the presence of ergosterol (the predominant sterol in fungal cell membranes) rather than cholesterol (the predominant sterol in mammalian cell membranes) most likely forms the basis of the selective toxicity of this drug.

Industrial & Institutional Trainings

1. **Industrial Training in Fermentation and Distillation**

--Winter Training

Place: Mohan Meakin Ltd. Lucknow.

Description: In this training, I got exposure to Production of Industrial Alcohol or Ethanol. I studied the Fermentation process and also studied the associated entities such as Yeast Vessel and Pre-fermentation. I understood the data analysis which is carried out for various tests. I studied the Product Recovery section, Effluent Treatment Plant, and Bottling Unit.

2. **Industrial Training in Milk Quality Control Department**

--Summer Training

Place: Parag Dairy Industry Bamrauli, Allahabad.

Description: As quality control is very crucial section of any milk plant, I got an I depth exposure in various important tests such as Raw milk testing, Adulteration test, Gerber's Method (For fat % calculation), MBRT Testing (Methylene Blue Reduction Test), COB Testing (Clot on Boiling) and Microbial Testing. I went through following important sections of the production department.

1. Pasteurizer
2. Homogenization
3. Cream supporter
4. Refrigeration
5. Steam Raising Equipment

3. **Institutional Training in Study of Biochemical and Immunological Techniques**

-- Winter Training

Place: Department of Biochemistry J.N. Medical College, AMU, Aligarh

Description: I studied the following Biochemical and Immunological Techniques.

1. Enzyme-linked immunosorbent assay (ELISA)
2. Agarose gel electrophoresis
3. Polyacrylamide gel electrophoresis (PAGE)
4. UV-visible spectroscopy

5. Fluorescence spectroscopy

Achievements

- Got 1st Prize in the debate.
- Got 2nd Prize in Loan Tennis.

General Interests

Painting, Listening Music and Solving Puzzles

Personal Information

Full Name	Anupama Singh
Date of Birth	April 28, 1988
Gender	Female
Languages Known	English, Hindi, Urdu
Permanent Address	D/o Mr. Shailendra Kumar Singh 5/191, Jawahar Nagar, Durga Mandir Marg, G.T. Road, Aligarh (U.P.)-202001

Reference

1. **Dr. Susmita Dutt** Professor, Department of Chemical Engineering National Institute of Technology, Durgapur Durgapur – 713209, INDIA E mail: susmita_che@yahoo.com Tel: 91-343-2754082 Fax : 91-343-2547375	2. **Dr. Nalin Bharti** Head of the Department & Associate Professor (ECONOMICS), Department of Humanities and Social Sciences Indian Institute of Technology, Patna Bihar – 801103, INDIA E mail: nalinbharti@gmail.com Tel: +91-612-302-8017 Fax:+91-612-227-7383
3. **Dr. Kalyan Adhikari** Professor, Department of Earth and Environmental studies National Institute of Technology, Durgapur Durgapur – 713209, INDIA E mail: k_adh@yahoo.com Tel: 0343 2754429, 2754426 Fax No.: (0343)2547375, 254675	