

## Dr. Vineeta Gautam

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### Title of Ph.D thesis and supervisor

“Studies on Polyaniline based Composites for Biosensors” Under the supervision of **Dr. V. L. Yadav** (Professor), Department of Chemical Engineering and Technology, IIT(BHU), Varanasi.

### Publications

1. Umesh Kumar, **Vineeta Gautam**, Kesheo Prasad, Novel Ganga-sand-encapsulated polyaniline granules for effective remediation of textile and pharmaceutical wastewater, Indian Chemical Engineer, 19 March 2024, <https://doi.org/10.1080/00194506.2024.2334468>
2. Adarsh Kumar Arya, **Vineeta Gautam**, Adarsh Kumar, Comparative Studies of Stochastic Techniques to Minimize the Cost of Biomass Supply Networks, International Conference on Recent Trends in Image Processing and Pattern Recognition, 383-392, Springer Nature Switzerland, 2023/12/7.
3. Baijnath, Lakhan Lal, **Vineeta Gautam**, Vijay Laxmi Yadav, A Comparative Study of the Removal Efficiency of Calcium Hydroxide and Sodium Hydroxide as Precipitating Agents for Chromium (III), Journal of Civil Engineering and Environmental Technology, Print ISSN: 2349-8404; Volume 1, Number 1; August, 2014 **pp. 17-20**.
4. **Vineeta Gautam, V. L. yadav**, “Comparative study of adsorption behavior of Basic Brown-1, Methylene Blue, Methyl Violet on almond shell” February, 2011. Published at “National Conference on Recent development in Material Science” organized by Feroz Gandhi College, Rai Bareli. ISBN: **9788189131517, pp-344-355**.
5. **Vineeta Gautam**, Anchal Srivastav, Karan Pratap Singh, Vijay Laxmi Yadav, Preparation and Characterization of Polyaniline, Multiwall Carbon Nanotubes, and Starch Bionanocomposite Material for Potential Bioanalytical Applications, **Polymer Composite**, 2015, 38, 496–506. [IF-5.23], **Wiley**
6. **Vineeta Gautam**, Anchal Srivastav, Karan Pratap Singh, Vijay Laxmi Yadav, Vibrational and Gravimetric Analysis of Polyaniline/Polysaccharide Composite Materials, ISSN 0965-545X, **Polymer Science, Series A. Focus on Physics**, 2016, 58(2) 206-219. [IF-1.206], **Springer**
7. **Vineeta Gautam**, Karan Pratap Singh, Vijay Laxmi Yadav, Polyaniline/MWCNTs/Starch modified Carbon Paste Electrode for Non-enzymatic Detection of Cholesterol: Application to Real Sample (Cow Milk), **Analytical and Bioanalytical Chemistry**, 2018, 410(8), 2173-2181. [IF-4.14]. **Springer**

8. **Vineeta Gautam**, Karan Pratap Singh, Vijay Laxmi Yadav, Preparation and Characterization of Green-nano-composite Material based on Polyaniline, Multiwalled Carbon Nano Tubes and Carboxymethyl Cellulose: for Electrochemical Sensor Applications, **Carbohydrate Polymer**, 2018, 189, 218–228. [IF-11.2]. Elsevier
9. **Vineeta Gautam**, Karan Pratap Singh, Vijay Laxmi Yadav, Polyaniline/MWCNTs/Starch nanocomposite material and hemoglobin modified carbon paste electrode for hydrogen peroxide and glucose biosensing, **International Journal of Biological Macromolecules**, 2018, 111, 1124-1132, [IF-8.2]. Elsevier

#### **Paper presented in International/National Conferences/Attended FDP Workshops**

1. Presented Research paper entitled " Synthesis of nano membranous composite material based on Polyaniline/MWCNTs/Cellulose acetate for selective electrochemical detection of Ascorbic Acid and Catechol " in International Conference Sustainable Development in Chemical and Environmental Engineering, 2024 at Thapar Institute of Engineering and Technology, Patiala -147004, Punjab, INDIA, held on 22-24<sup>th</sup> Feb 2024.
2. Presented Research paper entitled " Synthesis and characterization of novel crystalline polyaniline/Kaolin composite" in International Conference Sustainable Development in Chemical and Environmental Engineering, 2024 at Thapar Institute of Engineering and Technology, Patiala -147004, Punjab, INDIA, held on 22-24<sup>th</sup> Feb 2024.
3. Attended 1 week FDP "Inculcating Universal Human Values in Technical Education" 6<sup>th</sup>-10<sup>th</sup> November 2023 organized by AICTE.
4. Presented Research paper entitled "Polyaniline, MWCNTs and Araucaria Columnaris Composite for H<sub>2</sub>O<sub>2</sub> Detection" in International Conference IICHe - CHEMCON 2023 at Indian Institute of Chemical Engineers, Heritage Institute of Technology, Kolkata, held on 27-30<sup>th</sup> Dec, 2023.
5. Presented Research paper entitled A Review: Polyaniline based Composite Materials for Electrochemical Sensor/Biosensor Applications" in International Conference IICHe - CHEMCON 2023, at Indian Institute of Chemical Engineers, Heritage Institute of Technology, Kolkata, held on 27-30<sup>th</sup> Dec, 2023.
6. Presented Research paper entitled " A Review: Polyaniline based Composite Materials for Electrochemical Sensor/Biosensor Applications, International Conference CHEMTECNOVA 2023 at HBTU, Kanpur, held on 26-27<sup>th</sup> May, 2023.
7. Presented Research paper entitled " Electrochemical sensor based on Polyaniline, MWCNTs and Araucaria Columnaris for H<sub>2</sub>O<sub>2</sub> detection, International Conference organized by CHEMCON 2022, 75<sup>th</sup> Annual Session & International Conference held at Harcourt Butler Technical University, held on 27<sup>th</sup> -30<sup>th</sup> December, 2022.
8. Attended 3 days International workshop on Energy Power Environment National Institute of Technology Kurukshetra held on March 17-19, 2019.
9. Attended 1 week Faculty Development Programme on Green Technology for Sustainable Development organized by department of Chemical Engineering, Assam Engineering College, Guwahati held on 17<sup>th</sup> -21<sup>st</sup> December 2018.

10. Organized Stakeholders meeting in Bineswar Brahma Engineering College (BBEC), Kokrajhar, held on 27<sup>th</sup> October 2018.
11. As a co-ordinator of Industrial visit with the 3<sup>rd</sup> semester students, Department of chemical engineering, Bineswar Brahma Engineering College (BBEC), Kokrajhar, held on 31<sup>st</sup> October 2018.
12. Attended 5 days workshop on Recent Advances in Materials, Energy and Environmental Engineering conducted under TEQIP sponsored by MHRD, Government of India held on 16-20 July 2018 at IIT Guwahati.
13. Attended 3 days outcomes based education and NBA accreditation workshop held on 28-30 June 2018 at Govt. of College of Engineering, Bargur (Tamilnadu).
14. Attended TEQIP-III Faculty Induction workshop held on 06-10<sup>th</sup> February 2018, at Institute of Technology Kharagpur (West Bengal).
15. Oral Presentation as an invited speaker on research paper entitled “Application of Water-dispersible and Biocompatible Nano-Composite Material “Polyaniline/MWCNTs/Starch” for Non-Enzymatic Detection of Cholesterol” 2017 Global Conference on Polymer and Composite Materials (PCM 2017), Guangzhou, *China*, organized by Pusan National University Wuhan Advanced Materials Society on 23<sup>rd</sup>-25<sup>th</sup> May 2017.
16. Achieved 2<sup>st</sup> Prize in poster competition for presenting research paper entitled “Electrochemical Detection of Hydroquinone using [PANI/MWCNTs/CMC] Modified Carbon Paste Electrode” at 4th Lucknow Science Congress, Babasaheb Bhimrao Ambedkar University (A Central University) Vidya Vihar, Raebareli Road, Lucknow-226025 on 3<sup>rd</sup>-4<sup>th</sup> March-2017, pp 85.
17. Achieved 1<sup>st</sup> Prize in poster competition for presenting research paper entitled “A study on the degradation and solubility of polysaccharides: electron microscopic analysis and viscosity measurement” at 4th Lucknow Science Congress, Babasaheb Bhimrao Ambedkar University (A Central University) Vidya Vihar, Raebareli Road, Lucknow-226025 on 3<sup>rd</sup>-4<sup>th</sup> March-2017, pp 85.
18. Achieved 2<sup>st</sup> Prize in poster competition for presenting research paper entitled “PANI/MWCNTs/Starch composite material for H<sub>2</sub>O<sub>2</sub> Biosensor” at Institute Day, Department of Chemical Engineering and Technology, IIT(BHU), Varanasi,U.P. on 2-3<sup>rd</sup> April 2016.
19. Achieved best poster award for presenting research paper entitled “FTIR analysis of Polyaniline and polysaccharide based composite” International Conference on

“Harnessing Engineering, Technology, and Innovation for sustainable Development” organized by Dr. S.S. Bhatnagar University Institute of Chemical Engineering and Technology, Punjab University, Chandigarh, India on 19-20<sup>th</sup> September 2014.

20. Achieved best poster award for presenting research paper entitled “Investigation on “multi-component composite as an improved adsorbent” at International Conference on Nanoscience and Nanotechnology organized by Department of Applied Physics, School for Physical Sciences at Babasaheb Bhimrao Ambedkar University, Lucknow, U.P. on 18-20<sup>th</sup> November 2013.
21. Achieved best poster award for presenting research paper entitled “Application of low cost adsorbent (treated peanut hull) for removal of colors pollutants (Methylene Blue and Methyl Violet) from water effluents” at National Seminar on Water & Environment Challenges for water resource management in 21<sup>st</sup> Century, Organized by Department of Geology, MVM College, Bhopal, M.P. on 12-13<sup>th</sup> March 2011, pp 18.
22. Oral Presentation of research paper entitled “An Easy Entrapment Approach for the Preparation of Nano-Silica/Polyaniline Based Nanocomposite Material: Application as Effective Adsorbent” at National conference on Advance in Wastewater Treatment and reuse” organized by Department of Chemical Engineering, at Smarat Ashok Engineering College Vidisha (M.P.) on 27-28<sup>th</sup> September 2013.
23. Presented research paper entitled “Comparative studies for the removal of acid and basic dye from Polyaniline/MWCNT/Starch/Silica composite modified Ganga Sand” International Conference on Future Prospects of Advancements in Biological Sciences Health Issues & International Protection at Indira Gandhi Pratishthan, Lucknow, U.P. India on 7-8<sup>th</sup> February 2014, pp 95.
24. Presented Poster presentation entitled “Powder XRD Analysis of PANI/PAA/MWCNTs based composite materials prepared in two different acids” National symposium on organic synthesis and advanced material, Department of Chemistry, BHU, Varanasi, U.P. on 1-2<sup>nd</sup> March 2014.
25. Presented research paper entitled “Modification of treated peanut shell composite material by PANI/MWCNTs/silica” International Conference on Recent Advances in Analytic Sciences organized by Department of Applied Chemistry, IITBHU, Varanasi, U.P., India on 27 – 29<sup>th</sup> March, 2014.
26. Presented research paper entitled “Preparation and Characterization of Polyaniline/Kaolin Composite Material” National Conference on Impact of Rapid Advancements in Management, Science and Technology (IRAMST), organized by Rajshree Institute of Management & Technology Bareilly, U.P., on 26-27<sup>th</sup> December, 2015.
27. Presented research paper entitled “Polyaniline/MWCNTs/Starch Composite Material for Hydrogen Peroxide Sensor” International Conference on Recent trends in Engineering and Material Sciences (ICEMS-2016), organized by Jaipur National University, dated 17-19<sup>th</sup> March, 2016, pp 514-515.

28. Presented research paper entitled "Removal of dye from waste water using low cost adsorbent" at National seminar, "Impact of environmental changes of human life", organized by SSK Girls degree college, Allahabad,U.P. on 20-21<sup>st</sup> November 2010, pp 57.
29. Presented research paper entitled "Application of peanut hull as non conventional adsorbent for the effective removal of Safranin-O" at "National Conference on Green Chemistry: An approach to meet the challenges of sustainability (GCMS- 2011), organized by MMH College, Ghaziabad, on 22-23<sup>rd</sup> January 2011, pp 72.
30. Presented research paper entitled "Removal of Brilliant Blue from dye wastewater using activated sand (from Ganga River) by adsorption" at "National Conference on Current concept and frontier advances in science educational research, organized by TD College, Jaunpur on 5-6<sup>th</sup> March 2011, pp 18-19.
31. Presented research paper entitled "Comparative study on the adsorption behaviour of some basic dyes from wastewater using activated sand (from *Ganga River*)" at Annual International Conference on Water & Wastewater Management "H<sub>2</sub>O World, organized by the sixth sense media group, New Delhi on 11<sup>th</sup> March 2011.
32. Presented research paper entitled "Ganga sand used for the removal of dye (Methylene Blue and Methyl Violet) by adsorption method" at National Conference on Advance and futuristic trend in Material Science (AFTMS 2011) Bareilly U.P., on 26-27<sup>th</sup> March, 2011, pp 37.
33. Presented a review paper entitled "Implementation of Biosensors in Food Industry for Detecting Unwanted Threats: A Necessary Safety Measure" at National Conference on recent advances in the development of fermented foods, organized by CFST, IAS, BHU, Varanasi,U.P. 8-9<sup>th</sup> April, 2011, pp-212.
34. Presented research paper entitled "Characterization techniques for composite materials, nano materials and their application for electrochemical sensors" at National conference "Current concept and frontier advances in science educational research" organized by TD College, Jaunpur U.P., 5-6<sup>th</sup> March, 2011.
35. Presented research paper entitled "Removal of Victoria blue by using Ganga river sand as a low cost adsorbent" at International Conference "CONIAPS-XIII 13th Conference of International Academy of Physical Sciences", organized by University of Petroleum and Energy Studies, Dehradun(UK), on 14-16<sup>th</sup> June, 2011,
36. Oral Presentation of research paper entitled "Application of Ganga sand/polyaniline composite material as low cost adsorbent for the removal of methyl violet" at NSAFM, organized by Department of Chemistry, BHU, Varanasi, on 11-12<sup>th</sup> February, 2012.
37. Participated in 47 days workshop entitled "Entrepreneurship skill development program",

organized by: TBI Centre IIT-BHU, Varanasi, on 20<sup>th</sup> Jan-7<sup>th</sup> March 2011.

38. Participated in 2 days workshop entitled “National workshop on Jugaad in Manufacturing”, organized by Main workshop, IIT(BHU), Varanasi, on 8-9<sup>th</sup> January 2011.

39. Participated and student volunteer in “International Conference on Separation Processes”, organized by Department of Chemical Engineering & Technology, Institute of Technology, BHU- Varanasi, on 20-22<sup>nd</sup> October, 2009.

40. Participated in the National Conference on Recent trends in Chemistry, Organized by Department of Chemistry, BHU-Varanasi, on 19-20<sup>th</sup> February 2011.

#### **Educational Detail:**

<b>Class/Course</b>	<b>College/Institute</b>	<b>Board/ University</b>	<b>Year of Passing</b>
Ph.D. (Chemical Engg.)	IIT(BHU)	IIT(BHU)	2018
M. Tech. (Chemical Engg.)	IIT(BHU)	IIT(BHU)	2011
B. Tech. Chemical Technology (Oil Technology)	Harcourt Butler Technological Institute	A.K.T.U. Lucknow	2009

#### **Projects:**

- I have completed **CRS (Collaborative Research Scheme)** Project, which had been sanctioned by MHRD with amount of **17.58 lakh INR**. In this project I am trying to Develop novel polyaniline based composite materials to fabricate electrochemical biosensors for detecting some common disease biomarkers.
- Completed M. Tech. project entitled “**Removal of dye from wastewater using low cost adsorbents**” from July 2010 to June 2011.
- A project on **Manufacturing of Anionic Surfactant** in B. Tech 2009.

#### **Academic Seminar:**

- A Seminar entitled “**Introduction and Application of Biosensor**” in M. Tech 2<sup>nd</sup> semester.
- Mini project entitled “**Electrochemical synthesis and characterization of gold and silver nano particles**” in M. Tech 2<sup>nd</sup> semester.

#### **Summer Training & experience:**

**Organization:** Kanpur Edibles (Pvt.) limited  
**Duration:** Four Weeks  
**Department:** (Manufacturing of Edible oils and Vanaspati)

**Responsibilities:** Quality control and chemical analysis (Iodine value, Saponification value, Peroxide value, Acid Value, Melting point, Total dissolve solid, moisture content) of raw oil (Palm oil, Soybean oil, Rapeseed oil and other edible oils) and final vanaspati products

**Work Experience:**

**JUN 2022– Till date**

Assistant Professor, Department of Oil Technology, HBTU, Kanpur, UP

**DEC 2021– JUN 2022**

Guest Lecturer, Department of Chemical Engineering, HBTU, Kanpur, UP

**JAN 2018– SEPT 2021**

**ASSISTANT PROFESSOR:** Bineswar Brahma Engineering College (BBEC), Kokrajhar, responsibilities as teaching, lab experiments, exams, presentations, viva, lecture plan, lesson plan, research plan, industrial visit, workshops and seminars and others.

**JUL 2011 – JUN 2012**

**LECTURER,** Department of Chemical Engineering, MNNIT-Allahabad, UP

**Responsibilities:** Lectures, class test, lab experiments, presentations, Quiz, lecture plan, lesson plan, research plan, viva, workshops, seminars, industrial visit and others.

Vineeta Gautam