

DR. PRERNA HIGGINS

Assistant Professor

Department of Chemistry

Faculty of Sciences

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OBJECTIVE – To become an excellent professional in the field of Chemistry.

AREA OF RESEARCH INTEREST- ENVIRONMENTAL REMEDIATION

The thrust area of research is focused on Environmental Pollution especially water pollution. It includes the purification of wastewater discharging toxic pollutants (inorganic as well as organic, pharmaceutical drugs) by the adsorption technique using the low cost adsorbent materials especially agricultural materials and synthesized nano-adsorbents, nano-composites.

PRESENT DETAIL

Currently, an Assistant Professor in St. Stephen's College, Department of Chemistry, University of Delhi.

TITLE OF Ph.D

“ADSORPTIVE REMOVAL OF PHARMACEUTICAL DRUGS FROM AQUEOUS SOLUTION USING NANOMATERIALS.”

EDUCATION

Completed Doctrate in Philosophy (**Ph.D**) in Chemistry from Sam Higginbottom University of Agriculture Technology and Sciences in **2022**.

Completed **Masters (M.Sc)** in Chemistry from University of Allahabad in **2017**.

Completed **Graduation (B.Sc)** from University of Allahabad in **2015**.

Completed **Intermediate** from Bishop Johnson School and College with Physics Chemistry Biology stream from **ISC board** in **2012**.

Completed **High School** from St. Mary's Convent Inter College with Science from **ICSE board** in **2010**.

ACHIEVEMENTS

Attained **1st Rank** in B.Sc and **4th Rank** in faculty of science in UNIVERSITY OF ALLAHABAD.

Attained **1st rank (GOLD MEDALIST)** in UNIVERSITY OF ALLAHABAD in the Department of Chemistry at Masters level.

Was honored by the U.G.C. S.G.C. Award in M.Sc Chemistry.

Was honored by the DDMS Govil Award for Rank 1 in M.Sc Chemistry.

AIR-1 in Entrance Exam for Master's Level.

TRAINING EXPERIENCE

Attended one week short term course on "NEW TRENDS IN WASTE WATER TREATMENT AND IT'S REUSE" (NTWT-2019) in MNNIT (Motilal Nehru National Institute of Technology) sponsored by TEQIP (Technical Education Quality Improvement).

PAPER PRESENTATION IN CONFERENCE

1. Presented in the CHEM-CONFLUX20, an International Conference on Energy and Environmental Technologies For Sustainable Development organized by Department of

Chemical Engineering, MNNIT on 14th -16th Feb 2020. The paper presented was **“Adsorptive Removal of Diclofenac Drug from aqueous solution using Polyaniline”**.

2. Presented a paper entitled **“PANI/HNT Based Nano-composite as an Efficient Adsorbent for the removal of Diclofenac From its Aqueous Solution”** in the International Industrial Chemistry Conference organized by Department of Chemistry, NED University of Engineering and Technology Karachi on 26th -28th Feb 2021.
3. Presented a paper entitled **“Efficacy of metal hydroxides bio-nano-composite for the adsorptive removal of pharmaceutical drug”** in the 58th Annual Convention of Chemists, 2021 & International Conference on “Recent Trends in Chemical Sciences (RTCS-2021)” organized by the Indian Chemical Society, Kolkata during December 21st –24th, 2021.

List of Publications

1. Perna Higgins., Shaziya H Siddiqui & Rajeev Kumar, (2022). Design of novel graphene oxide/halloysite nanotube@ polyaniline nanohybrid for the removal of diclofenac sodium from aqueous solution. *Environmental Nanotechnology, Monitoring & Management*, **17**, 100628.
2. Perna Higgins., Shaziya H Siddiqui & Rajeev Kumar, (2022). Design of novel metal hydroxide bio-nanocomposite (CBCS@ LDH) for the scavenging of ciprofloxacin (CPN) drug from its aqueous solution: Kinetic, isotherm, thermodynamic and reusability studies. *Current Research in Green and Sustainable Chemistry*, **5**, 100298.
3. Perna Higgins & Shaziya H Siddiqui (2022). Efficacy of Polyaniline (PANI) nanofibres for capturing Diclofenac (DC) drug from its aqueous solutions. *Journal of the Indian Chemical Society*, **99**(6), 100494.
4. Perna Higgins., Shaziya H Siddiqui., Amit Chattree., Runit Isaac, (2022). Kinetic and Isothermic modelling over PANI @HNT for scavenging Diclofenac (DCL) drug from its aqueous solution. *Indian Journal of Natural Sciences*, ISSN: 0976-0997.

5. Aldahash, Saleh Ahmed, Perna Higgins, Shaziya Siddiqui, and Mohammad Kashif Uddin, (2022). Fabrication of polyamide-12/cement nanocomposite and its testing for different dyes removal from aqueous solution: characterization, adsorption, and regeneration studies, *Scientific Reports* **12**, 1: 13144.
6. Runit Isaac, Shaziya H Siddiqui., Amit Chattree., Perna Higgins, (2022). Pre-monsoon and Post-monsoon Study on the analysis of physio-chemical parameters, WQI and Correlation coefficient of river Yamuna at Prayagraj, Uttar Pradesh, *Indian Journal of Natural Sciences*, ISSN: 0976-0997.
7. Isaac, R., Siddiqui, S., Higgins, P., Paul, A. S., Lawrence, N. A., Lall, A. S., ... & Prasad, A. (2024). Assessment of seasonal impacts on water quality in Yamuna river using water quality index and multivariate statistical approaches. *Waste Management Bulletin*, 2(3), 145-153.
8. Higgins, P., Kumar, R., & Siddiqui, S. H. (2025). Synthesis and characterization of SiO₂/GO/Al₂O₃ nanocomposite adsorbent for the uptake of ciprofloxacin: isothermal and reusability studies. *Journal of the Iranian Chemical Society*, 22(2), 407-418.

BOOK CHAPTERS

1. Perna Higgins and Runit Isaac. "Environmental Remediation of Organic Pollutants Employing Pistachio Waste." *Pistachios Cultivation, Production and Consumption*. Nova Publication, 2022. 147-164.
2. Shaziya Siddiqui, Perna Higgins and Runit Isaac. "Alumina-Based Adsorbents." *Nanomaterials for Environmental Applications*, Taylor & Francis, pp. 161-178. CRC Press, 2022.

3. Runit Isaac, Perna Higgins and Mini Singh. "Pistachio Waste- Derived Carbon: An Efficient Material for Heavy Metal Adsorption." Pistachios Cultivation, Production and Consumption. Nova Publication, 2022. 129-146.
4. Shaziya Siddiqui, Amit Chattree, Perna Higgins, Kavipriya, Tuan Anh Nguyen, and Susai Rajendran. "Food products safety." Nanosensors for Smart Agriculture, pp. 757-768. Elsevier, 2022. ISBN: 9780128245545.
5. Perna Higgins, & Shaziya H Siddiqui. "Metal organic frameworks: its synthesis, properties and applications". In Metal Organic Frameworks pp. 43-56. Elsevier, 2024. ISBN: 978044352597.
6. Shaziya H Siddiqui, Saima Habib Khan and Perna Higgins. "Nanotechnology for sustainable agriculture, food and environment". CRC Press, 2023. ISBN :9781003397861

SEMINAR/WEBINAR/WORKSHOP

Participated in One day Seminar on 150 years of Periodic table of Chemical Elements on 16th October 2019.

Participated in an International Webinar on "Health and Environmental Protection during Pandemic Outbreak of COVID 19" on 25th – 26th June 2020.

Attended the National Webinar on Insights into the Fundamentals of Chemistry on 18th -20th June 2020

Attended a one day webinar on The wondrous world of nanomaterials on 23rd May 2020

Attended an International e-conference on Advancements in Material Science and Technology from 23rd -25th November 2020

Attended a one day webinar on Environmental Restoration and Circular Economy on 5th June 2021

Attended Lecture Series from 10th -24th April 2021 organized by the Indian Chemical Society

Attended a one day online webinar by Taylor and Francis Group on 25th March 2021

Participated in the “Workshop on Instrumentation Techniques in Chemical Sciences” (ITCS-2021) June 25th -29th 2021

AFFILIATION

Web of science researcher id – [AAT-2947-2021](#)

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