

Currently on short contract job- Research assistant/ project manager for NRPU project titled "metal sulphide based nano-material fabrication via single source precursor aimed at energy storage.

Complete one month training in "Health and Social Security" discipline from London Campus of Higher Education, U.K
<https://lchs.org.uk>

CONTACT

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SKILLS

- Microsoft Office
- Research Skills
- Data Analysis
- AI and Machine Learning
- Nanotechnology
- Laboratory Techniques
- Internet Applications
- Origin and Expert Software
- Kali Linux

EDUCATION

M.Phil. in Environmental Sciences (Chemistry)

Fatima Jinnah Women University, Rawalpindi

Result: 87.5%

B.S. in Environmental Sciences

Fatima Jinnah Women University, Rawalpindi

Result: 71.39%

LANGUAGES

English Urdu

NAMRA FATIMA AFTAB

PhD scholar-Environmental sciences (chemistry) FJWU

PROFESSIONAL EXPERIENCE:

Remote Academic hourly (Research Assistant)

"July-Sept. 2023" - present: offline work continues

- Holonyak Micro and Nanotechnology Laboratory (HMNTL), Grainger College of Engineering, University of Illinois at Urbana-Champaign
- Major Research Topics:

1. Role of nanotechnology in food and agriculture industry
2. Oncolytic virotherapy
3. Novel nanopseudoviruses

Responsibilities:

Collaborate with the research team to design, plan, and execute experiments related to nanotechnology applications in agriculture, medicine, and the environment.

Conduct literature reviews and assist in the development of research proposals.

Review articles to evaluate the performance of nanomaterials in different applications, including agriculture, medicine, and environmental remediation.

Collect, analyze, and interpret experimental data using appropriate statistical methods and software.

Prepare reports, summaries, and presentations based on research findings.

Collaborate with team members in data analysis and manuscript preparation for scientific publications.

Stay up to date with the latest advancements in the field of nanotechnology, bionanotechnology and related disciplines.

Attend online trainings and workshops.

A/O Levels Teacher

Subjects: English, Science, History, Geography - KFSSS (Cambridge Curriculum)

ACHIEVEMENTS:

- Published a chapter "Efficacious bioremediation of heavy metals and radionuclides from wastewater employing aquatic macro and microphytes" in the book "Bio-organic Amendments for Heavy Metal Remediation" (<https://doi.org/10.1016/B978-0-443-21610-7.00003-3>)
- Published Research Paper: "Sorptive and Degradative Assessment of Environmentally Pestilential Benzimidazole Fungicide Fuberidazole in Pedosphere" (<https://doi.org/10.1080/03067319.2021.1949586>)
- M.Phil. Thesis: "Green Synthesis of Neodymium and Yttrium Composites with Selected Metal Oxides Nanoparticles and Investigation of Their Electrochemical Behavior"
- B.S. Thesis: "Sorption and Degradation Studies of Fungicide Fuberidazole in Selected Soils of Pakistan"
- 100 Percentile Score in Graduate Assessment Test (GAT) contributing a chapter for an upcoming book "Bio-organic Amendments for Heavy Metal Remediation: Water Soil and Plant Approaches" to be published by Elsevier, scheduled by the end of October 2023.

Achieved proficiency in using different instruments during M.Phil. research.

a) GC-MS (Gas Chromatography –Mass Spectrometry)

(Brunker Scion QP5050A) with the interface of TQ-MS (triple quadrupole mass spectrometry) detector having BR-5MS column was used to separate out the constituents of the plant extract.

b) (UV–vis spectrophotometer) was used to check the spectrum curve of nanoparticles under the specified range 200–800nm.

- c) From FTIR (FTIR RX1- Perkin Elmer) spectral data, the functional groups responsible for the plants mediated NP and the presence of metal oxides were analyzed in the wave length range of 4000–400 cm⁻¹ using the standard KBr disk method.
- d) The X-ray diffraction (XRD) analysis was conducted for knowing the crystallinity using monochromatic Cu Ka1 radiation ($k = 1.54059 \text{ \AA}$) operated at 40 kV and 30 mA at 2 θ angle pattern.
- e) SEM (Scanning electron microscope) the morphology and size of Nanoparticles were observed using SEM.
- f) Gammy potentiostat 600+ was used having a three electrode system, one was the working electrode deposited on FTO, second was the counter electrode (platinum standard), third was reference electrode. 2MKOH was used as electrolyte for the investigation of the electrochemical behavior of the synthesized material for their application in energy storage devices

Achieved proficiency in using instruments during bachelor's research i.e

- a) Atomic absorption spectrophotometer was used to detect the heavy metals present in the soil samples.
- b) UV-visible spectrophotometer Samples were analyzed on UV-visible spectrophotometer (Model: BMS-1602) and by running them at detection wavelength of 250 nm to 350 nm.

INTERNSHIPS:

AI Lab, Islamabad

- Completed "AI for Everyone" course by Andrew Ng
- Research on integration of AI with chemistry and nanorobotics - Projects: Making hacking operating system, generating raw payload, embedding payload in an image
- Integration of AI in chemistry
- Department of Plant and Environmental Protection (DPEP), NARC
- Evaluation of matrix effects in the analysis of pesticide residues from apple samples
- Water analysis of Rawal Dam
- Conducted ion analysis

EXPERIENCE:

Community Work

- 7 days as a teacher of English and Science at Govt. MC Boys' Central Model High School, Millat Colony, Rawalpindi

Organizer

- FJWU Entrepreneurship Fairs at ORIC, Fatima Jinnah Women University
- Volunteer
- "No Litter Day" Awareness Event
- National Cleaner Production Center (NCPC) in collaboration with Army Heritage Foundation (AHF), Rawalpindi

PI-YAP Short-Certification Participant

- "CPEC-Responsive Youth"
- Member WWF
- Member IWISTER Pakistan
- Reviewer (International journal of environmental science and technology)
- Freelance content/Scientific writer
- Member of women in climate change Pakistan
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"References and Professional portfolio available on request"

Volunteering as Country team lead in an African organization Climate Change Writers

Key responsibilities:

- Establishing and managing country team.
- Developing country-specific plans aligned with CCW's global strategy.
- Partnering with local stakeholders, NGOs, and environmental organizations.
- Creating compelling climate-related content.
- Organizing events and awareness campaigns.
- Monitoring local initiatives and reporting progress.