

FATIMA ASHRAF

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Nationality: Pakistan

RESEARCH INTERESTS

Exploring nanotechnology and polymer chemistry tools for the fabrication of functional materials.

EDUCATION

Department of Chemistry

Lahore, Pakistan

University of Engineering and Technology (UET)

M.Phil Applied Chemistry

Thesis Title: “Fabrication on Nafion/Polymer Brushes Functionalized Nanoparticles Based Composite Membranes for Fuel Cell Applications”

Department of Chemistry

Lahore, Pakistan

University of Engineering and Technology (UET)

M.Sc Applied Chemistry

Thesis Title: “Phytochemical investigation and pharmaceutical applications of essential oil and fixed oil of Nigella Sativa”

Department of Chemistry

RESEARCH EXPERIENCE

Department of Chemistry & Chemical Engineering

Lahore, Pakistan

Lahore University of Management Sciences (LUMS)

Visiting Research Assistant

Nishat Textile Mills Limited

Lahore, Pakistan

Intern

TECHNICAL SKILLS LIST

Synthesis Skills

- Polymer brushes fabrication via “*grafting from*” (surface initiated polymerizations) and “*grafting to*” (coupling reactions) strategies.
- SiO₂ nanoparticles, TiO₂ nanoparticles, synthesis and surface functionalization.
- Functionalization of polymeric surfaces.
- Formation of fuel cell membranes
 - Surface Functionalization
 - Polymerization
 - Polymer Brushes
 - Materials Chemistry
 - Thin Films
 - Spectroscopy
 - XPS
 - Polymer Chemistry
 - Analytical Chemistry

- Drug Discovery
- Biotechnology
- Inorganic Chemistry
- Nanoparticles
- Functionalization
- Polymers
- Nanotechnology

Characterization Techniques

- Structure elucidation: spectroscopic techniques: (UV-Visible, FTIR).
- Recrystallization
- Thin layer chromatography (TLC)
- Thermal and mechanical properties: Thermogravimetric analysis (TGA),
- Surface chemical characterization, water absorption measurements, and materials morphology: X-ray photoelectron spectroscopy (XPS), X-ray powder diffraction (XRD), transmission electron microscopy (TEM), scanning electron microscopy (SEM), Electrochemical Impedance Spectroscopy (EIS).

Computer Skills

- Microsoft word, Power Point, Excel, Origin 7, C⁺⁺.

PROFESSIONAL EXPERIENCE

**Kinnaird College for Women University,
Lecturer**

Lahore, Pakistan
September 2023-Continue

**Fazaia College of Education for Women
Lecturer**

Lahore, Pakistan
October 2021-August 2023

ACADEMIC ACHIEVEMENTS

LANGUAGE

English and Urdu

PUBLICATIONS

1. Farrukh, A.; **Ashraf, F.**; Kaltbeitzel, A.; Ling, X.; Wagner, M.; Duran, H.; Ghaffar, A.; ur Rehman, H.; Parekh, S. H.; Domke, K. F.; Yameen, B., Polymer brush functionalized SiO₂ nanoparticle based Nafion nanocomposites: a novel avenue to low-humidity proton conducting membranes.

REFERENCES

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