

## CURRICULUM VITAE

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### Academic Qualification

Degree / Certificate	University / Board	Year	Division	Subjects
<b>PhD</b>	QAU Islamabad	2016		<b>Physical Chemistry</b>
M.Phil.	QAU Islamabad	2012	1 <sup>st</sup>	<b>Physical Chemistry</b>
M.Sc.	BZU Multan	2010	1 <sup>st</sup>	<b>Physical Chemistry</b>
B.Sc.	BZU Multan	2008	1 <sup>st</sup>	Chem., Phys, Math.
F.Sc.	BISE Multan	2006	2 <sup>nd</sup>	Chem., Phys, Math.
Matric	BISE Multan	2003	1 <sup>st</sup>	Chem., Phys, Math, Bio.

## **Professional Experience**

**Assistant Professor at Department of Chemistry** University of Education Lahore, Attock Campus, Attock, Pakistan from 12-04-2019 to till

**Assistant Professor at Department of Chemistry** University of Wah, Wah Cantt, Pakistan from 03-10-2017 to 03-04-2019

**Assistant Professor at Institute of Chemical Sciences**, Bahauddin Zakariya University Multan, Pakistan from 08-09-2016 to 07-09-2017

**Visiting Faculty Member at Department of Chemistry QAU**, Islamabad from March 2016 to July 2106

**Teaching Assistant at Department of Chemistry QAU**, Islamabad from September 2015 to February 2016

Four years teaching experience at intermediate level in Punjab Group of Colleges, Islamabad.

## **Research Interests**

Polymer Hydrogels, Nanomaterials, Catalysis, Adsorption, Drug delivery, Biosensors.

## **M. Phil Thesis Title**

Synthesis and characterization of hybrid microgels for catalytic applications

## **PhD Thesis Title**

Synthesis and characterization of polymer beads and hydrogel metal nanoparticle composites for adsorption and catalytic applications

## **Research Fellowship**

*Research Fellowship Program for Foreign Citizens by TUBITAK* Turkey at Nano Science and Technology Research and Application Center Canakkale Onsekiz Mart University, Turkey

Topic: “Synthesis and characterization of hydrogel-metal nanoparticle Composites for catalytic applications”

## **Research Projects/ Grants Utilized**

- 1. Title of the Project:** Fabrication of transition and noble metal nanoparticles in responsive hydrogel matrices and investigation of their catalytic properties

**Amount:** 4,35,600 (PKR)

**Year:** 2018

**Funded by:** Higher Education Commission of Pakistan

### **Reviewer of International Journal**

- Journal of Materials Science
- Applied Surface Science
- Polymer Composites
- Polymer Engineering & Science
- Journal of Porous Materials
- Desalination and Water Treatment
- Polymers for Advanced Technologies

### **Workshops/ Training**

- Training Workshop on advanced Chemical Techniques in Natural and Applied Sciences organized by Department of Chemistry and Central Hi-Tech Lab University of Agriculture Faisalabad, Pakistan. 10<sup>th</sup> to 12<sup>th</sup> September, 2015.

### **Awards and achievements:**

- Best debater of the college award in Government College Khanewal during 2003-2006.
- First and 2<sup>nd</sup> position winner in debate competitions at district level.
- Best poster award in 11<sup>th</sup> International & 23<sup>rd</sup> National chemistry Conference organized by National Center of Excellence in Physical chemistry, University of Peshawar, Pakistan October 15-17, 2012.

### **References**

#### **1. Prof. Dr. Mohammad Siddiq**

Department of Chemistry,

Quaid-i-Azam University, Islamabad 45320, Pakistan.

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#### **2. Prof. Dr. Nurretin Sahiner**

Faculty of Science & Arts, Chemistry Department,

Canakkale Onsekiz Mart University, Terzioğlu Campus, 17100 Canakkale, Turkey.

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### M.Phil Thesis Supervised

<b>Sr. No.</b>	<b>Student</b>	<b>Session</b>	<b>Title</b>
<b>1</b>	Sonia Zulfiqar	2015-17	Polymer templated metal nanoparticles for environmental applications
<b>2</b>	Aliya Arooj	2015-17	Synthesis of Cobalt oxide/Polyaniline composites for Electrochemical Monitoring of Pesticides in Soft Drinks
<b>3</b>	Sadia Saeed	2015-17	Preparation of poly(acrylic acid) hydrogel fabricated with cobalt nanoparticles for environmental applications
<b>4</b>	Nadeem Abbas	2016-18	Synthesis and characterization of metal nanoparticles containing composite hydrogels for catalytic reduction of nitrocompounds
<b>5</b>	Muhammad Fahad Qureshi	2016-18	Synthesis, characterization and catalytic applications of anionic hydrogels integrated with copper nanoparticles
<b>6</b>	Muhammad Abdullah	2016-18	Synthesis and characterization of responsive hydrogels fabricated with metal nanoparticles for catalytic applications
<b>7</b>	Muhammad Atif	2016-19	Development of magnetic hydrogel for decontamination of water
<b>8</b>	Zaema Sajid	2017-19	In situ synthesis of copper nanoparticles in cross-linked polymeric networks for catalytic reduction of organic pollutants
<b>9</b>	Muhammad Riaz	2017-19	Manufacturing of responsive hydrogel fabricated with metal nanoparticles for environmental applications
<b>10</b>	Nusrat Jabeen	2017-19	Synthesis and characterization of responsive hydrogel embedded with cobalt nanoparticles for decontamination of water

## Participation in Chemistry Conferences

1. Paper presented in “Pak-Belarus International Conference on Chemical Sciences” organized by Department of Chemistry Quaid-i-Azam University, Islamabad Pakistan. April 24-26, 2019.
2. Paper presented in “4<sup>th</sup> International Chemistry Conference on recent Trends in Chemistry” organized by Department of Chemistry Allama Iqbal Open University (AIU), Islamabad, Pakistan. November 07-08, 2018.
3. Poster presented in “A day long International Conference on Recent Challenges and Chemical Sciences” jointly organized by Institute of Chemical Sciences Bahauddin Zakariya University Multan, Pakistan and Royal Society of Chemistry, Pakistan Local Section. December 22, 2017.
4. Paper presented in “3<sup>rd</sup> International Chemistry Conference on recent Trends in Chemistry” organized by Department of Chemistry Allama Iqbal Open University (AIU), Islamabad, Pakistan. November 23-24, 2017.
5. Paper presented in “Fifth International Conference on Multifunctional, Hybrid and Nanomaterials” organized by Elsevier at the Lisbon Congress Center, Praça das Indústrias, 1300-307 Lisboa, Portugal. March 06-10, 2017.
6. Paper presented in “2<sup>nd</sup> conference on emerging materials and processes” organized by National University of Science and Technology (NUST), Islamabad, Pakistan. December 22-23 2015.
7. Poster presented in international symposium for advanced materials jointly organized by Kahuta Research Laboratories and National Center for Physics, Islamabad, Pakistan. 12-16 October, 2015.
8. Paper presented in 14<sup>th</sup> International & 26<sup>th</sup> National chemistry Conference on “Chemistry: Exploring Solutions in the Changing World” jointly organized by The chemical Society of Pakistan & Department of Chemistry & Department of Biochemistry

and Biotechnology of The Islamia University of Bahawalpur, Pakistan. October 05-08, 2015.

9. Poster presented in European Conference on Surface Science 30 (ECOSS 30) organized by Bilkent University, Ankara, Turkey. 31 August - 05 September 2014.
10. Paper presented in 5<sup>th</sup> Chemistry Conference on “Chemistry in Engineering and Life Sciences” jointly organized by Chemistry Division PINSTECH, DFNFC, NCC and PIEAS, Islamabad, Pakistan. November 04-06 2013.
11. Paper presented in 12<sup>th</sup> International & 24<sup>th</sup> National chemistry Conference on “Innovations in Chemistry” jointly organized by The chemical Society of Pakistan & Institute of Chemical Sciences Bahauddin Zakariya University Multan, Pakistan. October 28-30. 2013.
12. Paper accepted for oral presentation in International Conference on Physical and Environmental Chemistry (ICPEC-2013) organized by National Center of Excellence in Physical chemistry, University of Peshawar, Pakistan. September 9 – 11 2013
13. Paper accepted for oral presentation in ICNBS Egypt 2013.
14. Poster presented in 11<sup>th</sup> International & 23<sup>rd</sup> National chemistry Conference organized by National Center of Excellence in Physical chemistry, University of Peshawar, Pakistan October 15-17, 2012.
15. Participated in “Symposium on Hydrogen and Fuel Cells” organized by Department of Chemistry Quaid-i-Azam university Islamabad July 9-11, 2012.
16. Participated in 4<sup>th</sup> International Scientific Spring-2012 (Nano Science) jointly organized by national Centre for Physics (NCP), Islamabad, Pakistan and The Abdus Salam International Centre for Theoretical Physics (ICTP) Trieste, Italy March 05-09, 2012.
17. Participated in 10<sup>th</sup> International and 22<sup>nd</sup> National Chemistry Conference organized by Department of Chemistry and Biochemistry, University of Agriculture, Faisalabad, Pakistan November 21-23, 2011.

## **Publications**

- [27] Zahoor H. Farooqi, Hamadia Sultana, Robina Begum, Muhammad Usman, Muhammad Ajmal, Jan Nisar, Ahmad Irfan, Muhammad Azam "Catalytic degradation of malachite green using a crosslinked colloidal polymeric system loaded with silver nanoparticles" *International Journal of Environmental Analytical Chemistry* (2020) DOI: 10.1080/03067319.2020.1779247.
- [26] Muhammad Siddiq, Khush Bakhat and Muhammad Ajmal. "Stimuli responsive microgel containing silver nanoparticles with tunable optical and catalytic properties" *Pure and Applied Chemistry* 92(3) (2020) 445–459.
- [25] Khalida Naseem, Zahoor H. Farooqi, Robina Begum, Weitai Wu, Ahmad Irfan, Muhammad Ajmal Systematic study for catalytic degradation of nitrobenzene derivatives using core@shell composite micro particles as catalyst. *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 594 (2020) 124646.
- [24] Abdul Haleem, Sidra Bibi Syaal, Muhammad Ajmal, Jaweria Ambreen, Sajid Rauf, Nasir Ali, Saz Muhammad, Afzal Shah, Muhammad Abid Zia, Muhammad Siddiq. Silver and palladium nanoparticles embedded poly(n-isopropylacrylamide-co-2-acrylamido-2-methylpropane sulfonic acid) hybrid microgel catalyst with pH and temperature dependent catalytic activity, *Korean Journal of Chemical Engineering* 37(4) (2020) 614-622.
- [23] Rahmat Ullah, Faiza Jan Iftikhar, Muhammad Ajmal, Afzal Shah, Mohammad Salim Akhter, Haseeb Ullah and Amir Waseem Modified clays as an efficient adsorbent for Brilliant green, Ethyl violet and Allura red dyes: Kinetic and Thermodynamic studies. *Polish Journal of Environmental Studies* 29 (5) (2020) 1-9.
- [22] T.M. Ansari, M. Ajmal, S. Saeed, H. Naeem, H.B. Ahmad, K. Mahmood, Z.H. Farooqi, Synthesis and characterization of magnetic poly (acrylic acid) hydrogel fabricated with cobalt nanoparticles for adsorption and catalytic applications, *Journal of the Iranian Chemical Society* 16(12) (2019) 2765-2776.

- [21] Z. Shafiq, M. Ajmal, S. Kiran, S. Zulfiqar, G. Yasmeen, M. Iqbal, Z.H. Farooqi, Z. Ahmad, N. Sahiner, K. Mahmood, Facile synthesis of hydrogel-nickel nanoparticle composites and their applications in adsorption and catalysis, *Pure and Applied Chemistry* 91(10) (2019) 1567–1582.
- [20] S.T. Muntha, M. Ajmal, H. Naeem, A. Kausar, M.A. Zia, M. Siddiq, Synthesis, Properties, and Applications of Polysulfone/Polyimide Nanocomposite Membrane Reinforced with Silica Nanoparticles, *Polymer Composites* 40(5) (2019) 1897-1910.
- [19] H. Naeem, M. Ajmal, R.B. Qureshi, S.T. Muntha, M. Farooq, M. Siddiq, Facile synthesis of graphene oxide–silver nanocomposite for decontamination of water from multiple pollutants by adsorption, catalysis and antibacterial activity, *Journal of environmental management* 230 (2019) 199-211.
- [18] M. Ajmal, F. Aftab, I. Bibi, M. Iqbal, J. Ambreen, H.B. Ahmad, N. Akhtar, A. Haleem, M. Siddiq, Facile synthesis of porous anionic hydrogel embedded with nickel nanoparticles and evaluation of its catalytic performance for the rapid reduction of 4-nitrophenol, *Journal of Porous Materials* 26(1) (2019) 281-290.
- [17] Z.H. Farooqi, R. Khalid, R. Begum, U. Farooq, Q. Wu, W. Wu, M. Ajmal, A. Irfan, K. Naseem, Facile synthesis of silver nanoparticles in a crosslinked polymeric system by in situ reduction method for catalytic reduction of 4-nitroaniline, *Environmental technology* 40(15) (2019) 2027-2036.
- [16] M. Shahid, Z.H. Farooqi, R. Begum, K. Naseem, M. Ajmal, A. Irfan, Designed synthesis of silver nanoparticles in responsive polymeric system for their thermally tailored catalytic activity towards hydrogenation reaction, *Korean Journal of Chemical Engineering* 35(5) (2018) 1099-1107.
- [15] M. Waqas, A. Zulfiqar, H.B. Ahmad, N. Akhtar, M. Hussain, Z. Shafiq, Y. Abbas, K. Mehmood, M. Ajmal, M. Yang, Fabrication of highly stable silver nanoparticles with shape-dependent electrochemical efficacy, *Electrochimica Acta* 271 (2018) 641-651.
- [14] H. Naeem, M. Ajmal, S. Muntha, J. Ambreen, M. Siddiq, Synthesis and characterization of graphene oxide sheets integrated with gold nanoparticles and their applications to adsorptive removal and catalytic reduction of water contaminants, *RSC advances* 8(7) (2018) 3599-3610.



- [13] F. Bibi, M. Ajmal, F. Naseer, Z. Farooqi, M. Siddiq, Preparation of magnetic microgels for catalytic reduction of 4-nitrophenol and removal of methylene blue from aqueous medium, *International journal of environmental science technology* 15(4) (2018) 863-874.
- [12] F. Naseer, M. Ajmal, F. Bibi, Z.H. Farooqi, M. Siddiq, Copper and cobalt nanoparticles containing poly (acrylic acid-co-acrylamide) hydrogel composites for rapid reduction of 4-nitrophenol and fast removal of malachite green from aqueous medium, *Polymer Composites* 39(9) (2018) 3187-3198.
- [11] Z.H. Farooqi, A. Ijaz, R. Begum, K. Naseem, M. Usman, M. Ajmal, U. Saeed, Synthesis and characterization of inorganic–organic polymer microgels for catalytic reduction of 4-nitroaniline in aqueous medium, *Polymer Composites* 39(3) (2018) 645-653.
- [10] A. Arshad, J. Iqbal, M. Siddiq, Q. Mansoor, M. Ismail, F. Mehmood, M. Ajmal, Z. Abid, Graphene nanoplatelets induced tailoring in photocatalytic activity and antibacterial characteristics of MgO/graphene nanoplatelets nanocomposites, *Journal of Applied Physics* 121(2) (2017) 024901.
- [9] M. Ajmal, S. Demirci, M. Siddiq, N. Aktas, N. Sahiner, Amidoximated poly (acrylonitrile) particles for environmental applications: removal of heavy metal ions, dyes, and herbicides from water with different sources, *Journal of Applied Polymer Science* 133(7) (2016).
- [8] M. Ajmal, S. Demirci, Y. Uzun, M. Siddiq, N. Aktas, N. Sahiner, Introduction of double amidoxime group by double post surface modification on poly (vinylbenzyl chloride) beads for higher amounts of organic dyes, As (V) and Cr (VI) removal, *Journal of colloid interface science* 470 (2016) 39-46.
- [7] M. Ajmal, S. Demirci, M. Siddiq, N. Aktas, N. Sahiner, Simultaneous catalytic degradation/reduction of multiple organic compounds by modifiable p (methacrylic acid-co-acrylonitrile)–M (M: Cu, Co) microgel catalyst composites, *New Journal of Chemistry* 40(2) (2016) 1485-1496.
- [6] M. Ajmal, S. Demirci, M. Siddiq, N. Aktas, N. Sahiner, Betaine microgel preparation from 2-(methacryloyloxy) ethyl] dimethyl (3-sulfopropyl) ammonium hydroxide and its use as a catalyst system, *Colloids Surfaces A: Physicochemical Engineering Aspects* 486 (2015) 29-37.

- [5] M. Ajmal, M. Siddiq, N. Aktas, N. Sahiner, Magnetic Co–Fe bimetallic nanoparticle containing modifiable microgels for the removal of heavy metal ions, organic dyes and herbicides from aqueous media, *RSC advances* 5(54) (2015) 43873-43884.
- [4] M. Ajmal, M. Siddiq, H. Al-Lohedan, N. Sahiner, Highly versatile p (MAc)–M (M: Cu, Co, Ni) microgel composite catalyst for individual and simultaneous catalytic reduction of nitro compounds and dyes, *RSC Advances* 4(103) (2014) 59562-59570.
- [3] Z.H. Farooqi, S.R. Khan, T. Hussain, R. Begum, K. Ejaz, S. Majeed, M. Ajmal, F. Kanwal, M. Siddiq, Effect of crosslinker feed content on catalytic activity of silver nanoparticles fabricated in multiresponsive microgels, *Korean Journal of Chemical Engineering* 31(9) (2014) 1674-1680.
- [2] M. Ajmal, Z.H. Farooqi, M. Siddiq, Silver nanoparticles containing hybrid polymer microgels with tunable surface plasmon resonance and catalytic activity, *Korean Journal of Chemical Engineering* 30(11) (2013) 2030-2036.
- [1] S.R. Khan, Z.H. Farooqi, M. Ajmal, M. Siddiq, A. Khan, Synthesis, characterization, and silver nanoparticles fabrication in N-isopropylacrylamide-based polymer microgels for rapid degradation of p-nitrophenol, *Journal of Dispersion Science Technology* 34(10) (2013) 1324-1333.