

Curriculum Vitae

Shanza Rauf Khan

Address: House No. 907, Block B, Citi Housing Society,
Sialkot, Pakistan
Nationality: Pakistani
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Language: PTE Academic 76 points (2024)
IELTS General 7.5 band (2023)

Academic Qualification

Degree	University / Board	Year	Marks	Percentage/ CGPA	Division	Subject(s)
Joined UAF as Lecturer after MPhil (till date)						
MPhil	PUIC Lahore	2012-14 (Fall)	1151/1300 Distinction	88.0 % 3.95 CGPA	1 st	Physical Chemistry
MSc	PUIC Lahore	2010-12	945/1200 Gold Medal	78.75%	1 st	Physical Chemistry
BSc	PU Lahore	2008-10	621/800	77.63%	1 st	Chemistry, Botany, Zoology
FSc	BISE Gujranwala	2005-07	911/1100	82.82%	1 st	Chemistry, Physics, Biology
Matric	FBISE Islamabad	2003-05	918/1050	87.43%	1 st	Chemistry, Physics, Biology

Professional Experience

- Designation: **Lecturer (Visiting) (BPS-18)**
Institution: Centre for Undergraduate Studies, **University of the Punjab, Lahore**
Duration: From October 22, 2013 to March 8, 2015 (1 year 4 months 17 days)
- Designation: **Lecturer (BPS-18)**
Institution: Department of Chemistry, University of Agriculture, Faisalabad
Duration: From Sep 16, 2015 to till date (9+ years)

Research Interests: Modeling, Smart microgels, Nanomaterials, Functional materials

Research Accomplishments

Total Patents 4
Total publications 82
Total citations 1165 (h-index 20)
Total impact factor ~223 (2023)

Patent

1. Graphene oxide and cobalt tin oxide nanocomposite and method of use, **US Patent, US10882029B1, January 5, 2021, Application # 16,595/577 (granted)**
2. Cobalt hydroxystannate nanocube fuel additive, **US Patent, 10808193B2. October 20, 2020, Application # 16 / 452,717 (granted)**
3. Method for making mesoporous magnesium hydroxide nanoplates, an antibacterial composition, and a method of reducing nitroaromatic compounds, **US Patent, US11584655B2, February 21, 2023, Application # 16,597/531 (granted)**
4. Morphologically controlled synthesis of ferric oxide nano/micro particles, **US Patent, US11628423B2, April 18, 2023, Application # 15,992/950 (granted)**

1st author and Corresponding author Journal Articles

1. Hifza Arshad, Sarmed Ali, Saba Jamil, Saima Noreen, Shamsa Bibi, Tahseen Kamal, Asima Saif, Urooj Mariam, Shaista Liaqat, Muhammad Jamshed Latif, **Shanza Rauf Khan***, Biodegradable sodium alginate-based nanohybrid: Tuning reaction conditions for maximum efficiency in wastewater treatment, **International Journal of Biological Macromolecules** **2025**, 308, 142522 <https://doi.org/10.1016/j.ijbiomac.2025.142522> (IF=7.7) **Q1**
2. Muhammad Jamshed Latif, Sanam Shehzadi, Sarmed Ali, Saba Jamil, Tahseen Kamal, Shamsa Bibi, **Shanza Rauf Khan***, Comparative catalytic analysis of non-biodegradable barium oxide nanoparticles and biodegradable barium oxide/sodium alginate nanocomposite against organic dyes, **International Journal of Biological Macromolecules** **2025**, 304, 140749 <https://doi.org/10.1016/j.ijbiomac.2025.140749> (IF=7.7) **Q1**
3. Muhammad Jamshed Latif, Sarmed Ali, Saba Jamil, Shamsa Bibi, Touseef Jafar, Ammara, Sadia Noreen, Arslan Bashir, **Shanza Rauf Khan***, Comparative catalytic reduction and degradation with biodegradable sodium alginate based nanocomposite: Zinc oxide/N-doped **carbon nitride**/sodium alginate, **International Journal of Biological Macromolecules** **2024**, 127954 <https://www.sciencedirect.com/science/article/pii/S0141813023048535> (IF=7.7) **Q1**
4. Muhammad Zaheer, Muhammad Jamshed Latif, Sarmed Ali, Saba Jamil, Shamsa Bibi, **Shanza Rauf Khan***, M. Abdul Rehman, Immobilization of zero valent cobalt and tin nanoparticles in sodium alginate/**graphitic carbon nitride beads** for efficient reduction of organic pollutants, **Diamond and Related Materials**, **2025**, <https://doi.org/10.1016/j.diamond.2025.112320> (IF = 4.3) **Q2**
5. Muhammad Hashaam, Sarmed Ali*, Tahreem Khan, Muhammad Salman, **Shanza Rauf Khan***, Amjad Islam Aqib, Tean Zaheer , Shamsa Bibi, Saba Jamil, Merfat S. Al-Sharif, Samy F. Mahmoud and Wangyuan Yao, Assembly of Smart Microgels and Hybrid Microgels on **Graphene Sheets** for Catalytic Reduction of Nitroarenes, **Catalysts** **2022**, 12, <https://doi.org/10.3390/xxxxx> (IF = 4.501) **Q2**
6. Rimsha Aslam, **Shanza Rauf Khan***, Sarmed Ali, Saba Jamil, Tahseen Kamal, Saima Noreen, Ali Raza, Maham Fatima, Aiman Naeem, Muhammad Jamshed Latif, Catalytic activity of **g-C₃N₄/SA** and **Ag⁰-Fe⁰-fabricated g-C₃N₄/SA composite beads** towards dye-containing wastewater treatment: a comparative study, **Journal of Chemical Technology and Biotechnology**, **2025** <https://doi.org/10.1002/jctb.7826> (IF=2.8) **Q3**
7. Sarmed Ali, Sayyed Junaid Ul Hassan Shah, Saba Jamil, Shamsa Bibi, Muhammad Usman Shah, Amjad Islam Aqib, Tean Zaheer, **Shanza Rauf Khan***, Muhammad Ramzan Saeed Ashraf Janjua, Zirconium nanoparticles-poly (N-isopropylacrylamide-methacrylic acid) hybrid microgels decorated **graphene** sheets for catalytic reduction of organic pollutants, **Chemical Physics Letters**, **2021**, 780, 138915, <https://doi.org/10.1016/j.cplett.2021.138915> (IF=2.328) **Q3**

8. Urooj Mariam, Sarmed Ali, Saba Jamil, Asima Saif, Hifza Arshad, Tahseen Kamal, Shaista Liaqat, Muhammad Jamshed Latif, **Shanza Rauf Khan***, Synthesis, characterization and catalytic applications of CaO-Cu decorated PANI/SA nanocomposites for wastewater treatment, **Materials Science in Semiconductor Processing** **2025**, 193, 109486 <https://doi.org/10.1016/j.mssp.2025.109486> (IF=4.2) **Q2**
9. **Shanza Rauf Khan***, Sarmed Ali, Kaleem Zulfiqar, Saba Jamil, Saima Noreen, Ali Raza, Muhammad Jamshed Latif, From nitroarenes to fuel efficiency: The dual impact of copper/polystyrene nanocomposite catalysts, **Inorganic Chemistry Communications** **2025**, 172, <https://doi.org/10.1016/j.inoche.2024.113690> (IF=3.405) **Q2**
10. Ayesha Saddiqua, Sarmed Ali, Saba Jamil, Saima Noreen, **Shanza Rauf Khan***, Muhammad Jamshed Latif, Laraib Nazir, Asima Saif, Kiran Fatima, Catalytic Performance of Magnesium Oxide Nanoparticles and MgO/Sodium Alginate Nanocomposite: A Sustainable Approach for Wastewater Treatment, **Journal of Inorganic and Organometallic Polymers and Materials**, **2025**, <https://doi.org/10.1007/s10904-025-03758-9> (IF = 3.9) **Q2**
11. Ammara, Sadia Noreen, Sarmed Ali, Saba Jamil, Shamsa Bibi, Muhammad Jamshed Latif, **Shanza Rauf Khan***, CuO/PANI nanocomposite: an efficient catalyst for degradation and reduction of pollutants, **Polymer Bulletin**, **2024**, <https://doi.org/10.1007/s00289-024-05423-6> (IF = 3.1) **Q2**
12. Asima Saif, Sarmed Ali, Saba Jamil, Tahseen Kamal, Muhammad Jamshed Latif, **Shanza Rauf Khan**, Hifza Arshad, Urooj Mariam & Shaista Liaqat, Comparison of Catalytic Applications of CaO-Ag Bimetallic Nanoparticles and Its Composite: CaO-Ag/Na-alg/PANI, **Journal of Inorganic and Organometallic Polymers and Materials**, **2024**, <https://doi.org/10.1007/s10904-024-03460-2> (IF = 3.9) **Q2**
13. Hamza Shehroz, Sarmed Ali*, Guria Bibi, Tahreem Khan, Saba Jamil, **Shanza Rauf Khan***, Muhammad Hashaam, Saman Naz, Comparative investigation of catalytic application of $\alpha/\beta/\gamma$ -MnO₂ nanoparticles synthesized by green and chemical approaches, **Environmental Technology**, **2024**, **45** (6), 1081-1091 (IF = 3.475) **Q4**
14. Arslan Bashir, **Shanza Rauf Khan**, Amjad Islam Aqib, Laiba Shafique, Farid S. Ataya, Multifunctional integration of tungsten oxide (WO₃) coating: A versatile approach for enhanced performance of antibiotics against single mixed bacterial infections, **Microbial Pathogenesis**, **2024**, 189, 106571 <https://www.sciencedirect.com/science/article/pii/S088240102400038X> (IF=3.8) **Q3**
15. **Shanza Rauf Khan***, Sajid Ali, Wardah Burhan, Sarmed Ali, Saba Jamil, Shamsa Bibi, Naila Bilal, Sabahat Naseem, Muhammad Jamshed Latif, Comparison effects of gelation on sodium alginate–iron oxide nanocomposites for efficient catalytic degradation of organic dyes, **Applied Nanoscience**, **2024**, 14, 875–889 <https://link.springer.com/article/10.1007/s13204-024-03055-w>
16. Ali Raza, **Shanza Rauf Khan***, Sarmed Ali, Saba Jamil, Shamsa Bibi, Silver/Titanium nanoparticles encapsulated microgel for catalytic reduction, **Inorganic Chemistry Communications** **2023**, <https://doi.org/10.1016/j.inoche.2023.110851> (IF=3.405) **Q2**
17. Sayyed Junaid Ul Hassan Shah, Saba Jamil, Sarmed Ali, **Shanza Rauf Khan*** and Muhammad Ramzan Saeed Ashraf Janjua, Synthesis of rod like chromium/manganese layer double hydroxide and applications, **Russian Journal of Physical Chemistry A**, **2022**, 96 (6), 1215–1227 (IF=0.691) **Q4**
18. Saman Naz, Guria Bibi, Saba Jamil, Shafiq UrRehman, Shamsa Bibi, Sarmed Ali, Tahreem Khan, **Shanza Rauf Khan*** and Muhammad Ramzan Saeed Ashraf Janjua, Preparation of manganese-doped tin oxide nanoparticles for catalytic reduction of organic dyes, **Chemical Physics Letters**, **2022**, **802**, 139768, <https://doi.org/10.1016/j.cplett.2022.139768> (IF=2.328) **Q3**
19. Guria Bibi, **Shanza Rauf Khan***, Sarmed Ali, Saba Jamil, Shamsa Bibi, Hamza Shehroz, Muhammad Ramzan Saeed Ashraf Janjua, Role of capping agent in the synthesis of zinc–cobalt bimetallic nanoparticles and its application as catalyst and fuel additive, **Applied Nanoscience** (2022) <https://doi.org/10.1007/s13204-022-02468-9> (IF = 3.674)
20. Qurat UllAin, Sarmed Ali, Saba Jamil, Shamsa Bibi, **Shanza Rauf Khan***, Shafiq UrRehman, Guria Bibi, Tahreem Khan, Hamza Shehroz, Muhammad Hashaam, Muhammad Ramzan Saeed Ashraf Janjua, Comparison of catalytic and fuel additive properties of bimetallic nanoparticles and its

- composite: FeMnO₃ and PANI-FeMnO₃, *Materials Science in Semiconductor Processing*, 144 (2022) 106630, <https://doi.org/10.1016/j.mssp.2022.106630> (IF = 3.927) **Q2**
21. Burhan Ullah, **Shanza Rauf Khan***, Sarmed Ali, Saba Jamil, Synthesis, Parameters, Properties and Applications of Responsive Molecularly Imprinted Microgels: A Review, *Reviews in Chemical Engineering*, 2021, Manuscript # revce.2020.0030.R3 (IF=6.299) **Q1**
 22. Burhan Ullah, **Shanza Rauf Khan***, Sarmed Ali, Saba Jamil and Muhammad Ramzan Saeed Ashraf Janjua, 4-Nitrophenol Imprinted Core-Shell Poly(N-isopropylacrylamide-acrylic acid)/Poly(acrylic acid) Microgels Loaded with Cadmium Nanoparticles: A Novel Catalyst, *Materials Chemistry and Physics*, 2021, 260, DOI: 10.1016/j.matchemphys.2020.124156. (IF=4.094) **Q3**
 23. **Shanza Rauf Khan***, Sarmed Ali, Burhan Ullah, Saba Jamil, Tanzeela Zaniab, Synthesis of iron nanoparticles in poly(N-isopropylacrylamide-acrylic acid) hybrid microgels for catalytic reduction of series of organic pollutants: A first approach, *Journal of Nanoparticle Research*, 2020, 22:192. DOI: 10.1007/s11051-020-04924-5 (IF=2.253) **Q3**
 24. Iqra Mukhtar, Sarmed Ali, Saba Jamil, Shafiq urRehman, **Shanza Rauf Khan***, Engineering of cobalt sulfide (Co₃S₂) microcubes for selective catalytic hydrogenation of nitroarenes and enhanced calorific value of fuel, *Chemical Physics Letters*, 2020, 754, 137649. DOI: 0.1016/j.cplett.2020.137649 (IF=2.328) **Q3**
 25. **Shanza Rauf Khan***, Saba Jamil, Shamsa Bibi, Sarmed Ali, Tanzila Habib, Muhammad Ramzan Saeed Ashraf Janjua, A Versatile Material: Perovskite Bismuth Ferrite Microparticles as a Potential Catalyst for Enhancing Fuel Efficiency and Degradation of Various Organic Dyes, *Journal of Inorganic and Organometallic Polymers and Materials*, 2020, DOI: 10.1007/s10904-020-01520-x (IF=3.543) **Q2**
 26. **Shanza Rauf Khan***, Areeba Naeem, Saba Jamil, Amjad Islam Aqib, Muhammad Ramzan Saeed Ashraf Janjua, Synthesis of manganese-tin oxide microparticles by solvothermal method and study of application as catalyst and additive, *Environmental Technology*, 2019, DOI: 10.1080/09593330.2019.1660414 (Accepted, IF=3.247) **Q4**
 27. **Shanza Rauf Khan***, Saira Kanwal, Muhammad Hashaam, Saba Jamil, Burhan Ullah and Muhammad Ramzan Saeed Ashraf Janjua, Investigation of catalytic and fuel additive applications of copper/ copper(I) oxide/copper(II) oxide (Cu/CuO/Cu₂O) microspheres synthesized by hydrothermal method using sucrose as template, *Materials Research Express*, 2020, 7, 025036. (IF=1.620) **Q4**
 28. **Shanza Rauf Khan***, Saba Jamil, Muhammad Mustaqeem, Muhammad Ramzan Saeed Ashraf Janjua, Template Free Synthesis of Calcium-Tin (CaSn₃) Bimetallic Micro Cubes: Characterization, Catalytic Activity, Adsorption and Additive Properties, *Chemical Physics Letters*, 2020, 739, 136917. DOI: 10.1016/j.cplett.2019.136917 (IF = 2.348) **Q3**
 29. **Shanza Rauf Khan***, Maria Batool, Saba Jamil, Shamsa Bibi, Sobia Abid, Muhammad Ramzan Saeed Ashraf Janjua, Synthesis and characterization of Mg–Zn bimetallic nanoparticles: Selective hydrogenation of p-nitrophenol, degradation of reactive carbon black 5 and fuel Additive, *Journal of Inorganic and Organometallic Polymers and Materials*, 2020, 30, 438–450 (IF=3.543) **Q2**
 30. **Shanza Rauf Khan***, Sobia Abid, Saba Jamil, Amjad Islam Aqib, Muhammad Naeem Faisal, and Muhammad Ramzan Saeed Ashraf Janjua, Layer by layer assembly of zinc oxide nanotubes and nanoflowers as catalyst for separate and simultaneous catalytic degradation of dyes and fuel additive, *ChemistrySelect*, 2019, 4, 5548 –5559 (IF=2.109). **Q3**
 31. **Shanza Rauf Khan***, Muhammad Umar Khalid, Saba Jamil, Aiman Mujahid, Muhammad Ramzan Saeed Ashraf Janjua and Songnan Li, Photocatalytic degradation of reactive black 5 on the surface of tin oxide microrods, *Journal of Water and Health*, 2018 16 (5), 773-781. (IF = 1.744) **Q3**
 32. **Shanza Rauf Khan***, Saba Jamil; Songnan Li; Amara Sultan. Acrylic acid and methacrylic acid based responsive microgels as catalyst for reduction of 4-nitrophenol. *Russian Journal of Physical Chemistry A*. 2018, 92 (13), 2656–2664. (IF = 0.691) **Q4**
 33. Muhammad Umer Khalid, **Shanza Rauf Khan***, Saba Jamil, Morphologically Controlled Synthesis of Cubes like Tin Oxide Nanoparticles and Morphologically controlled synthesis of cubes like tin oxide nanoparticles and study of its application as photocatalyst for Congo red degradation and as fuel

- additive. *Journal of Inorganic and Organometallic Polymers and Materials*, **2018**, 28 (1), 168-176. (IF = 3.543) **Q2**
34. Zahoor H. Farooqi, **Shanza Rauf Khan** and Robina Begum, Temperature responsive hybrid microgels for catalytic applications: A review, *Materials Science and Technology*, **2017**, 33 (2), 129-137 (IF = 1.920). **Q2**
 35. Robina Begum, Zahoor H. Farooqi and **Shanza Rauf Khan**, Poly(N-isopropylacryl amide-co-acrylic acid) copolymer microgels for various applications: A review, *International Journal of Polymeric Materials and Polymeric Biomaterials*, **2016**, 65 (16), 841–852 (IF = 2.604). **Q3**
 36. **Shanza Rauf Khan**, Zahoor H. Farooqi, Waheed-uz-Zaman, Abid Ali, Robina Begum, Farah Kanwal, Mohammad Siddiq, Kinetics and mechanism of reduction of nitrobenzene catalyzed by silver-poly(N-isopropylacrylamide-co-allylactic acid) hybrid microgels, *Materials Chemistry and Physics*, **2016**, 171, 318-327. (IF = 4.094) **Q3**
 37. Zahoor H. Farooqi, **Shanza Rauf Khan**, Robina Begum and Aysha Ijaz, Review on synthesis, properties, characterization and applications of responsive microgels fabricated with gold nanostructures, *Reviews in Chemical Engineering*, **2016**, 32 (1), 49–69 (IF = 6.299). **Q1**
 38. Zahoor Hussain Farooqi, **Shanza Rauf Khan**, Robina Begum, Farah Kanwal, Ahsan Sharif, Ejaz Ahmed, Shumaila Majeed, Kiran Ejaz, Ayesha Ijaz, Effect of acrylic acid feed contents of microgels on catalytic activity of silver nanoparticles fabricated hybrid microgels, *Turkish Journal of Chemistry*, **2015**, 39, 96-107 (IF=1.239). **Q4**
 39. Zahoor H. Farooqi, Tanzila Sakhawat, **Shanza Rauf Khan**, Farah Kanwal, Robina Begum, Synthesis, characterization and fabrication of copper nanoparticles in N-isopropylacrylamide based co-polymer microgels for degradation of p-nitrophenol, *Material Science – Poland*, **2015**, 33 (1), 185-192 (IF=1.022) **Q4**
 40. Zahoor H. Farooqi, Naghza Tariq, Robina Begum, **Shanza Rauf Khan**, Zafar Iqbal, Abbas Khan, Fabrication of silver nanoparticles in poly (N-isopropylacrylamide-co-allylactic acid) microgels for catalytic reduction of nitroarenes, *Turkish Journal of Chemistry*, **2015**, 39, 576-588. (IF=1.239) **Q4**
 41. Zahoor H. Farooqi, Zonarah Butt, Robina Begum and **Shanza Rauf Khan**, Poly(N-isopropylacrylamide-co-methacrylic acid) microgel stabilized copper nanoparticles for catalytic reduction of nitrobenzene, *Material Science – Poland*, **2015**, 33 (3), 627-634 (IF=1.022). **Q4**
 42. Zahoor H. Farooqi, **Shanza Rauf Khan**, Tajamal Hussain, Kiran Ejaz, Shumaila Majeed, Robina Begum, Muhammad Ajmal, Farah Kanwal and Mohammad Siddiq, Effect of crosslinker feed content on catalytic activity of silver nanoparticles fabricated in multiresponsive microgels, *Korean Journal of Chemical Engineering*, **2014** 31 (9), 1674-1680 (IF=3.309). **Q3**
 43. Zahoor H. Farooqi, Sadia Iqbal, **Shanza Rauf Khan**, Farah Kanwal, Robina Begum, Cobalt and nickel nanoparticles fabricated p(NIPAM-co-MAA) microgels for catalytic applications, *e-Polymers*, **2014**, 14 (5), 313-321 (IF=2.025) **Q2**
 44. **Shanza Rauf Khan**, Zahoor H. Farooqi, Muhammad Ajmal and Mohammad Siddiq, Synthesis, characterization and silver nanoparticles fabrication in N-isopropylacrylamide based polymer microgels for rapid degradation of p-nitrophenol, *Journal of Dispersion Science and Technology*, **2013**, 34 (10), 1324-1333 (IF=2.262). **Q4**

Instruments	Softwares
<ul style="list-style-type: none"> • UV-Visible spectrophotometer (Single and double beam) • Atomic absorption spectrophotometer • Flame photometer • Polarimeter • Refractometer • Thermal conductivity analyzer • Thermal expansion coefficient analyzer 	<ul style="list-style-type: none"> • PYTHON • MS office (Word, Excel, Power Point ...) • Origin • VESTA • FULLPROF • MATCH • ChemSketch • ChemDraw

<ul style="list-style-type: none"> • Bomb calorimeter • Specific gravity meter • Thin Layer Chromatography • Column chromatography 	<ul style="list-style-type: none"> • VESTA • R
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Community Service and Community Trainings

1. Performed duty as **Presiding Officer** in General Election-2018 and General Election-2024 Pakistan.
2. Attended 2 days training entitled “Two-Day Training of Presiding Officers and Senior Assistant Presiding Officers, General Elections-2018” organized by Election Commission of Pakistan dated **July 2018, July 2023, January 2024**.
3. Performed duty in grow more wheat campaign 2023 (from 7-11-2023 to 15-11-2023).
4. Performed duty in grow more wheat campaign 2022 (from 28-10-2022 to 6-11-2022).
5. Attended One-Day Seminar “Breast Cancer Awareness and Self Examine Program” on Feb 19, 2019.
6. Planted trees on World forest day at **Jallo Forest Park Lahore (March 21, 2014)**.