Muhammad Imran Khan

Ph.D Applied Chemistry

School of Chemistry and Material Science

University of science and Technology of China (USTC)

Hefei, Anhui, P.R. China

Mobile: +8613002941521

E-mail: emran@mail.ustc.edu.cn

ACADEMIC				
Degree	**Year**	**Divisions**	**Institute**	**Field**
Post-Doctorate	November 2018 to Present		Xi'an Jiaotong University, Xi'an, Shaanxi, PR. China	Chemistry
Post-Doctorate	September 2017-September 2018		Fujian Institute of Research on the Structure of Matter, Fuzhou, Fujian, China	Chemistry
Ph.D	2017		University of Science and Technology of China (USTC) , Hefei 230026, Anhui, China	Chemistry
M.Phil	2011	Ist	The Islamia University of Bahawalpur, Pakistan	Chemistry
M.Sc	2008	Ist	Bahauddin Zakariya University Multan, Pakistan	Chemistry
B.Sc	2005	Ist	Govt College Khanewal, Multan	Physics, Math, Chemistry
F.Sc	2003	Ist	Govt College Khanewal, Multan	Pre-Medical
Matriculation	2000	Ist	GHSS, Makhdumpur, Khanewal	Biology, Chemistry, Physics

PROFESSIONAL EXPERINENCE:

Teaching Experience Four year in Govt. High School 2/AH, Khanewal, Pakistan.

HONOURS AND AWARDS:

1. Won **China Scholarship council (CSC) Scholarship for Ph.D "** at Huanzhong University of science and Technology (HUST), Wuhan, Hubei, PR. China.
2. Won **CAS-TWAS President Fellowship for PH.D. SCHOLARSHIP** at School of Chemistry and Material Science, University of Science and Technology of China, Hefei 230026, Anhui, PR. China (2013-2017).

3. Selected as **CAS-TWAS Outstanding Ph.D Student**.
4. Won **Outstanding Post-Doctorate** Research fellow grant at Fujian Institute of Research on the Structure of Matter, Chinese Academy of Sciences, Fuzhou 350002, Fujian, PR. China
5. Won **International Postdoctoral Exchange Fellowship program (Talent-Introduction Program)** for two years (From November 2018 To November 2020) at Xi'an Jiaotong University, Xi'an, Shaanxi, PR. China

RESEARCH INTERESTS:

1. Synthesis of ion exchange membranes (IEMs) for diffusion dialysis (DD), electrodialysis (ED) applications, and fuel cell.
2. Decontamination of pollutants from Industrial wastewaters by adsorption on ion exchange membranes (IEMs).

SKILLS:

1. Microsoft Office 2010, Net Searching, and Microsoft Excel etc.
2. Origin Software

PUBLICATIONS:

1. **Muhammad Imran Khan,** Chunlei Zheng, Abhishek N. Mondal, Md. Masem Hossain, Bin Wu, Kamana Emmanuel, Liang Wu, Tongwen Xu, "Preparation of anion exchange membranes from BPPO and dimethylethanolamine for electrodialysis" *Desalination 402* (2017) 10-18.
2. **Muhammad Imran Khan**, Abhishek N. Mondal, Bing Tong, Chenxiao Jiang, Kamana Emmanuel, Zhengjin Yang, Liang Wu, Tongwen Xu* "Development of BPPO-based anion exchange membranes for electrodialysis desalination applications" *Desalination 391* (2016) 61-68.
3. **Muhammad Imran Khan**, Abhishek N. Mondal, Congliang Cheng, Jiefeng Pan, Kamana Emmanuel, Liang Wu, Tongwen Xu* "Porous BPPO-based membranes modified by aromatic amine for acid recovery" *Separation and Purification Technology* 157 (2016) 27-34.

4. **Muhammad Imran Khan,** Majeda Khraisheh, Fares Almomani, "Fabrication and characterization of pyridinium functionalized anion exchange membranes for acid recovery", *Science of the Total Environment* 686 (2019) 90-96.
5. **Muhammad Imran Khan**, Rafael Luque, Pepijn Prinsen, Saima Anjum, Muhammad Nawaz, Aqeela Shaheen, Shagufta Zafar, Aziz ur Rehman*, "BPPO based anion exchange membranes for acid recovery via diffusion dialysis" *Materials* 10 (3) (2017) 266.
6. **Muhammad Imran Khan**, Rafael Luque, Shahbaz Akhtar, Aqeela Shaheen, Ashfaq Mehmood, Saeed Ahmad Buzdar and Aziz ur Rehman*, "Design of Anion Exchange Membranes and Electrodialysis Studies for Water Desalination" *Materials 9 (5)* (2016) 265.
7. **Muhammad Imran Khan**, Shahbaz Akhtar, Shagufta Zafar, Aqeela Shaheen, Muhammad Ali Khan, Rafael Luque, Aziz ur Rehman, "Removal of Congo Red from Aqueous Solution by Anion Exchange Membrane (EPTAC): Adsorption Kinetics and Thermodynamics" *Materials* 8 (7) (2015) 4147-4161.
8. **Muhammad Imran Khan,** Javier Fernandez-Garcia, Qi-Long Zhu, Fabrication of doubly-charged anion exchange membranes for enhancing hydroxide conductivity, *Separation Science and Technology* (2020)**. (Accepted)**
9. **Muhammad Imran Khan,** Abhishek N. Mondal, Kamana Emmanuel, Md. Masem Hossain, Noor Ul Afsar, Liang Wu, Tongwen Xu, "Preparation of pyrrolidinium-based anion exchange membranes for acid recovery *Via* diffusion dialysis" *Separation Science and Technology* (2016) 1881-1890.
10. **Muhammad Imran Khan*,** Jinzhan Su, Eric Lichtfouse, Liejin Guo, Higher efficiency of triethanolamine-grafted anion exchange membranes for acidic wastewater treatment, *Desalination and Water Treatment* (2020). **(Accepted)**

11. **Muhammad Imran Khan**, Muhammad Ali Khan, Shagufta Zafar, Muhammad Naeem Ashiq, Kinetic, equilibrium and thermodynamic studies for the adsorption of methyl orange using new anion exchange membrane (BII): *Desalination and Water Treatment 58* (2017) 285-297.
12. **Muhammad Imran Khan***, Shagufta Zafar, Muhammad Ali Khan, Abdul Rehman Buzdar, Prasert Prapamonthon "Adsorption kinetic, Equilibrium and Thermodynamic study for the Removal of Congo Red from Aqueous Solution" *Desalination and Water Treatment 98* (2018) 294-305.
13. **Muhammad Imran Khan*** "Comparison of different quaternary ammonium groups on desalination performance BPPO-based anion exchange membranes" *Desalination and Water Treatment* 108 (2018) 49-57.
14. **Muhammad Imran Khan*** Majeda Khraisheh "Synthesis and characterization of stable anion exchange membranes for desalination applications" *Desalination and Water Treatment* 113 (2018) 36-44.
15. **Muhammad Imran Khan***, Mushtaq Hussain Lashari, Majeda Khraisheh, Shabnam Shahida, Shagufta Zafar, Prasert Prapamonthon, Aziz ur Rehman, Saima Anjum, Naseem Akhtar, Farzana Hanif "Adsorption kinetics, equilibrium and thermodynamic study of Eosin-B onto anion exchange membrane" *Desalination and Water Treatment* 155 (2019) 84-93.
16. **Muhammad Imran Khan*,** Tariq Mahmood Ansari, Shagufta Zafar, Abdul Rehman Buzdar, Muhammad Ali Khan, Fatima Mumtaz, Prasert Prapamonthon, Mehwish Akhtar "Acid Green-25 Removal from Wastewater by Anion Exchange Membrane: Adsorption Kinetics" *Membrane water treatment* 9 (2) (2018) 79-85.
17. **Muhammad Imran Khan**, Liang Wu*, Abhishek N. Mondal, Zilu Yao, Tongwen Xu*, "Adsorption of methyl orange from aqueous solution on anion exchange

membranes: Adsorption kinetics and equilibrium" *Membrane Water Treatment* 7 (2015) *23-38.*

18. **Muhammad Imran Khan**, Md. Masem Hossain, Jiefeng Pan, Jin Ran, Abhishek N. Mondal, Liang Wu, Tongwen Xu, "Preparation of Diffusion Dialysis Membrane for Acid Recovery Via Phase Inversion Method" *Membrane Water Treatment* 6 (5) (2015) 365-378.
19. Muhammad Ali Khan, **Muhammad Imran Khan*,** Shagufta Zafar **"**Removal of different anionic dyes from aqueous solution by anion exchange membrane" *Membrane Water Treatment* 8 (3) (2017) 259-277.
20. **Muhammad Imran Khan**, Shagufta Zafar, Hafiz B. Ahmad, Mazhar Hussain, Zahid Shafiq,"Use of Morus Albal Leaves As Bioadsorbent For The Removal of Congo Red Dye" *Fresenius Environmental Bulletin* 24 (2015) 2251-2258.
21. **Muhammad Imran Khan*,** Shagufta Zafar, Muhammad Ali Khan, Fatima Mumtaz, Prasert Prapamonthone, Abdul Rehman Buzdar "Bougainvillea glabra leaves for adsorption of Congo Red from Wastewater" *Fresenius Environmental Bulletin* 27 (3) (2018) 1456-1465.
22. **Muhammad Imran Khan***, Shagufta Zafar, Muhammad Farooq Azhar, Abdul Rehman Buzdar, Warda Hassan, Abida Aziz, Majeda Khraisheh "Leaves powder of syzgium cumini as an adsorbent for removal of congo red dye from aqueous solution" *Fresenius Environmental Bulletin* 27 (2018) 3343-3350.
23. **Muhammad Imran Khan*,** Shagufta Zafar, Abdul Rehman Buzdar, Muhammad Farooq Azhar, Warda Hassan, Abida Aziz, "Use of citrus sinensis leaves as a bioadsorbent for removal of congo red dye from aqueous solution" *Fresenius Environmental Bulletin* 27 (2018) 4679-4688.

24. **Muhammad Imran Khan*,** Shagufta Zafar, Majeda Khraisheh, Muhammad Ali Khan, Abdul Rehman Buzdar, Munir Ullah Khan, Aziz ur Rehman, Prasert Prapamonthon, Warda Hassan, Abida Aziz, Muhammad Farooq Azhar, Ajaz Hussain, Junaid Tariq "Development and Surface modification of anion exchange membranes for enhancement of antifouling potential in electrodialysis Process", *Fresenius Environmental Bulletin* (2018) 6751-6761.

25. **Muhammad Imran Khan*,** Muhammad Ali Khan, Shagufta Zafar, Samina Ahmad Hussain, "Adsorption kinetics and thermodynamics study for the removal of anionic dye Eosin-B from aqueous solution by anion exchange membrane: Adsorption kinetics and Thermodynamics, *Scholar Journal of Engineering and Technology* 3 (2015) 741-751.

26. Farzana Hanif, Samreen Ehsan, Shagufta Zafar, Mehwish Akhtar, **Muhammad Imran Khan***, Muhammad Farooq Warsi, Shamroza Mubarik, Warda Hassan 8, Imran Shakir , Suryyia Manzoor, "Adsorptive removal of methyl orange and acid bue-2445 from binary system by anion exchange membrane BI: Nonlinear and linear form of isotherms" *Desalination and Water Treatment* (2020). **(Accepted)**

27. Hina Masood, Shagufta Zafar, Hafeez ur Rehman, **Muhammad Imran Khan***, Hafiz Badaruddin Ahmad , Aqsa Naz , Warda Hassan , Mushtaq Hussain Lashari, "Adsorptive removal of anionic dyes in aqueous binary mixture by anion exchange membrane" *Desalination and Water Treatment* (2020). **(Accepted)**

28. Shagufta Zafar, **Muhammad Imran Khan*,** Hafeez ur Rehman, Javier Fernandez-Garcia, Shabnam Shahida, Prasert Prapamonthon, Majeda Khraisheh, Aziz ur Rehman, Hafiz Badaruddin Ahmad, Muhammad Latif Mirza, Nasir Khalid, Mushtaq Hussain Lashari "Kinetic, equilibrium and thermodynamic studies for adsorptive

removal of cobalt ions by rice husk from aqueous solution" *Desalination and Water Treatment* (2020). **(Accepted)**

29. Shagufta Zafar, **Muhammad Imran Khan*,** Majeda Khraisheh, Mushtaq Hussain Lashari, Shabnam Shahida, Muhammad Farooq Azhar, Prasert Prapamonthon, Muhammad Latif Mirza, Nasir Khalid, Kinetic, equilibrium and thermodynamic studies for adsorption of nickel ions onto husk of Oryza sativa, *Desalination and Water Treatment* 167 (2019) 277-290.

30. Shagufta Zafar, **Muhammad Imran Khan***, Majeda Khraisheh, Shabnam Shahida, Tariq Javed, Muhammad Latif Mirza, Nasir Khalid "Use of rice husk as an effective bioadsorbent for removal of cerium ions from aqueous solution: kinetic, equilibrium and thermodynamic study" *Desalination and Water Treatment 150 (2019) 125-134.*

31. Shagufta Zafar, **Muhammad Imran Khan*,** Majeda Khraisheh, Shabnam Shahida, Nasir Khalid, Muhammad Latif Mirza, "Effective removal of lanthanum ions from aqueous solution using Rice husk: impact of experimental variables" *Desalination and Water Treatment* 132 (2018) 263-273.

32. Shabnam Shahida, **Muhammad Imran Khan**, Sadaf Azad, Nasar Ahmed, Mushtaq Hussain Lashari, Majeda Khraishehd, Fares Almomanid, Shagufta Zafar, "Use of laser-induced break spectroscopy for the determination of major and trace elements in Zanthoxylum armatum" *Emergent Materials* (2020). https://doi.org/10.1007/s42247-020-00095-0

33. Shabnam Shahida, **Muhammad Imran Khan,** "Synergistic extraction of Eu(III) and Nd(III) from aqueous medium using a mixture of sulfasalazine and 1,10-phenanthroline" *Journal of Radioanalytical and Nuclear Chemistry* (2020) **(Accepted)**

34. YA. Abbasi, S. Shahida, M. Ali, MH. Khan, **Muhammad Imran Khan**, "Liquid–liquid extraction of neodymium (III) and europium (III) using synergic mixture of furosemide and tribenzylamine in benzyl alcohol" *Journal of Radioanalytical and Nuclear Chemistry* (2019). https://doi.org/10.1007/s10967-019-06467-z

35. Bin Tong, Congliang Cheng, **Muhammad Imran Khan,** Yonghui Wu, Tongwen Xu, "Double cross-linking PVA-SiO_2 hybrid membranes for alkali recovery" *Separation and Purification Technology* 174 (2016) 203-211.

36. Suchandra Bhattacharjee, **Muhammad Imran Khan**, Xiaofang Li, Qi-Long Zhu, Xin-Tao Wu, "Recent Progress in Asymmetric Catalysis and Chromatographic Separation by Chiral Metal–Organic Frameworks" *Catalysts* 120 (8) (2018) 1-28.

37. Muhammad Irfan, Noor Ul Afsar, Erigene Bakangura, Abhishek Narayan Mondal, **Muhammad Imran Khan**, Kamana Emmanuel, Zhengjin Yang, Liang Wu, Tongwen Xu, "Development of novel PVA-QUDAP based anion exchange membranes for diffusion dialysis and the theoretical analysis therein" *Separation and Purification Technology* 178 (2017) 269-279.

38. Kamana Emmanuel, Bakangura Erigene, Congliang Cheng, Abhishek N. Mondal, Md. Masem Hossain, **Muhammad Imran Khan**, Noor Ul Afsar, Liang Ge, Liang Wu, Tongwen Xu, "Facile synthesis of Pyridinium functionalized anion exchange membranes for diffusion dialysis application" *Separation and purification technology*. 167 (2016) 108-116.

39. Kamana Emmanuel, Congliang Cheng, Abhishek N. Mondal, Bakangura Erigene, Md. Masem Hossain, Noor Ul Afsar, **Muhammad Imran Khan**, Liang Wu, Tongwen Xu, "Covalently cross-linked pyridinium based AEMs with aromatic pendant groups for acid recovery via diffusion dialysis" *Separation and Purification Technology* 164 (2016) 125-131.

40. Kamana Emannuel, Congliang Chen, Bakangura Erigene, Abhishek N. Mondal, Md. Masem Hossain, **Muhammad Imran Khan**, Noor ul Afsar, Ge liang, Liang Wu, Tongwen Xu "Imidazolium functionalized anion exchange membrane blended with PVA for acid recovery via diffusion dialysis" *Journal of Membrane Science* 497*(1)* (2015) 209-215.

41. Kamana Emanuel, Congliang Cheng, Bakangura Erigene, Abhishek Narayan Mondal, Noor Ul Afsar, **Muhammad Imran Khan**, Md. Masem Hossain, Chenxiao Jiang, Liang Ge, Liang Wu, Tongwen Xu, "Novel synthetic route to prepare doubly quaternized anion exchange membranes for diffusion dialysis application", *Separation and Purification Technology* 189 (22) (2017) 204-212.

42. Abhishek N. Mondal, Yubin He, Liang Wu, **Muhammad Imran Khan**, Kamana Emanuel, Md. Masem Hossain, Liang Ge, Tongwen Xu "Click mediated high-performance anion exchange membranes with improved water uptake" *Journal of Material Chemistry A* (2016).

43. Abhishek N. Mondal, Congliang Chen, **Muhammad Imran Khan,** Md. Masem Hossain, Kamana Emanuel, Liang Ge, Bin Wu, Yubin He, Jin Ran, Xiaolin Ge Noor ul Afsar, Liang Wu, Tongwen Xu" Improved acid recovery performance by novel poly(DMEAM-co-γ-MPS) anion exchange membrane via diffusion dialysis, *Journal of Membrane Science* 525 (2017) 163-174.

44. Abhishek N. Mondal, Chunlei Zheng, Congliang Chen, Jibin Miao, Md. Masem Hossain, Kamana Emanuel, **Muhammad Imran Khan**, Noor ul Afsar, Liang Ge, Liang Wu, Tongwen Xu, "Novel silica-functionalized aminoisophthalic acid-based membranes for base recovery via diffusion dialysis, *Journal of Membrane Science* 507 (2016) 90-98.

45. Abhishek N. Mondal, Chunlei Zheng, Congliang Chen, Md. Masem Hossain, **Muhammad Imran Khan**, Zilu Yao, Liang Wu, Tongwen Xu, "Effect of novel Polysiloxane functionalized Poly(AMPS-co-CEA) membranes for base recovery from alkaline waste solution via diffusion dialysis" *RSC Advances* 5 (115) (2015) 95256-95267.

46. Abhishek N. Mondal, Chunhua Dai, Jiefeng Pan, Chunlei Zhang, Md. Masem Hossain, **Muhammad Imran Khan**, Liang Wu, Tongwen Xu, "Novel pendant benzene di-sulfonic acid blended SPPO membranes for alkali recovery: Fabrication and properties" *Applied Materials & Interfaces* 7(29) (2015) 15944-15954.

47. Abhishek N. Mondal, Congliang Chen, Zilu Yao, Jiefeng Pan, Md. Masem Hossain, **Muhammad Imran Khan**, Zhengjin Yang, Liang Wu, Tongwen Xu, "Novel quaternized aromatic amine based hybrid PVA membrane for acid recovery" *Journal of Membrane Science* 490 (2015) 29-37.

48. Noor ul Afsar, Dongbo Yu, Congliang Cheng, Kamana Emmanuel, Liang Ge, Bin Wu, Abhishek N. Mondal, **Muhammad Imran Khan**, Tongwen Xu, "Fabrication of Cation Exchange Membrane (CEM) from Polyvinyl Alcohol (PVA) using lignin sulfonic acid: Applications in diffusion dialysis process for alkali recovery" *Separation Science and Technology* 52 (6) (2017) 1106-1113.

49. Erigene Bakangura, Congliang Cheng, Liang Wu, Xiaolin Ge, Jin Ran, **Muhammad Imran Khan,** Kamana Emmanuel, Noor Afsar, Muhammad Irfan, , Aamir Shehzad, Tongwen Xu, " Hierarchically Structured Porous Anion Exchange Membranes Containing Zwetterionic Pores for Ion Separation" *Journal of membrane Science* 537 (2017) 32-41.

50. Aqsa Naz, **Muhammad Imran Khan***, Shagufta Zafar, Hafeez ur Rehman3 Hina Masood, Mushtaq Hussain Lashari*, "Use of anion exchange membrane as an

effective adsorbent for adsorptive removal of dyes in aqueous binary mixture" *Desalination and Water Treatment* (2020). **(Submitted)**

51. **Muhammad Imran Khan*,** Jinzhan Su, Liejin Guo, Fabrication of 4-(dimethylamino)butyraldehyde diethyl acetal functionalized-anion exchange membranes with enhanced acid recovery, *Desalination and Water Treatment* (2019). **(Submitted)**
52. **Muhammad Imran Khan*,** Jinzhan Su, Liejin Guo, Preparation and characterization of high performance anion exchange membranes for acid recovery, *Separation Science and Technology* (2019). **(Submitted)**
53. **Muhammad Imran Khan,** Jinzhan Su, Liejin Guo, Development of triethanolamine functionalized-anion exchange membrane for adsorptive removal of methyl orange from aqueous solution, *Desalination and Water Treatment* (2019). **(Submitted)**
54. **Muhammad Imran Khan,** Adsorption of Eriochrome Black-T from aqueous solution using anion exchange membrane: Equilibrium, kinetic and thermodynamic studies, *Desalination and Water Treatment* (2019). **(Submitted)**
55. **Muhammad Imran Khan,** Mushtaq Hussain Lashari, Aziz ur Rehman, Majeda Khraisheh, Shabnam Shahida, Shagufta Zafar, Prasert Prapamonthon, "Removal of Methyl Orange from Aqueous Solution by Anion Exchange Membrane: Adsorption Kinetic, Equilibrium, and Thermodynamic Studies", *Chemical Engineering Research and Design* (2019). **(Submitted)**
56. **Muhammad Imran Khan***, Shagufta Zafar, "Use of Anion Exchange Membrane as a Novel Adsorbent for Removal of Anionic Dye" *Fresenius Environmental Bulletin (2018)*. **(Submitted)**
57. **Muhammad Imran Khan*,** Shagufta Zafar, Majeda Khraisheh, Shabnam Shahida, Warda Hassan, Muhammad Imran Irfan, Mehwish Akhtar, Naseem Akhtar, Prasert

Prapamonthon, "Adsorption of congo red dye onto leaves powder of grewia asiatica leaves: kinetic and thermodynamic studies" *Fresenius Environmental Bulletin (2018).* **(Submitted)**

PRESENTATIONS

1. **M.I. Khan**, M.L. Mirza N. Khalid and S. Zafar, "Sorption Behavior of Congo Red on Different Plant Leaves" 3rd Chemistry Conference on Recent Trends in Chemistry, Organized by Chemistry Division, PINSTECH, Islamabad. October 17-19 (2011).
2. **M.I. Khan**, Chunlei Zheng, Abhishek N. Mondal, Md. Masem Hossain, Bin Wu, Kamana Emmanuel, Liang Wu, Tongwen Xu, "Preparation of anion exchange membranes from BPPO and dimethylethanolamine for electrodialysis" Sixth Session of Chemical and Material Science Chinese Annual Conference, Organized by University of Science and Technology of China, Hefei, April 22-23 (2017).

References

1. **Professor Dr. Tongwen Xu (Supervisor)**, School of Chemistry and Material Science, University of Science and Technology of China, Hefei 230026, Anhui, PR. China

   Email: twxu@ustc.edu.cn
2. **Professor Dr. Prof. Majeda Khraisheh**, Department of Chemical Engineering, College of Engineering, Qatar University, Doha, Qatar

   Email: m.Khraisheh@qu.edu.qa
3. **Professor Dr. Hafiz Badar-ud-Din Ahmed**, Institute of Chemical Science, Bahauddin Zakariya University, Multan, Pakistan

   Email: hafizbadar@gmail.com, hafizbadar@bzu.edu.pk