# MARIA WASIM

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## Research Interest

- Synthesis and characterization of polymeric membranes. Synthesis of nano hydroxyapatite. Synthesis of graphene and its modification. Nanofibers synthesis from natural polymers via electrospinning process. Green and Nano-Composites, Membrane Technology using Reverse Osmosis, Ultrafiltration and Nanofiltration techniques. The polymer nanofiltration for the removal of azo dyes.

## Scholastic Record

- **PhD Polymer Technology (ongoing)** Session 2018 **(CGPA- 4)**

- **M.Phil. Polymer Technology:** Dept. of Polymer Engineering and Technology (DPET), University of the Punjab, Lahore, Pakistan (2014-16).

**Dissertation**: Mixed matrix membranes modified with electrospun (carboxy methylcellulosesodium salt /sepiolite) fibers for nanofiltration process

- **B.Sc (Hons) Chemistry:** Dept. of Chemistry, Kinnaird College for Women, Lahore (2010-14).

**Dissertation:** Synthesis of hydroxyapatite nanoparticles from eggshells using surfactant micelles as a template.
**Major subject:** Organic Chemistry

- **F.Sc (Phy, Chem,Bio):** Lahore College for Women University, Lahore, Pakistan (2008-10)

## Professional History

**Research Scholar** December 2020 – to date

Institute of Polymer and Textile engineering, University of the Punjab, Lahore, Pakistan

## Trainings & Seminars

- Participation in community service in Department of Research, Training and Postgraduate Medical Education, Punjab Institute of Cardiology, Lahore **(July 2012- August 2012).**
- Participated in training workshop on High Performance Liquid Chromatography (HPLC) by School of Physical Sciences in collaboration with Office of Research Innovative and Commercialization (ORIC), University of Punjab, Lahore **(November 2012).**
- Participation in training conducted in Food Analysis Laboratory, Department of Food Sciences and Human Nutrition, University of Veterinary and Animal Sciences, Lahore about Proximate Analysis of food samples, Aflatoxins in food and feed samples and production of prebiotic galacto-oligosaccharides from lactose using beta – galactosidase and their characterization through thin layer chromatography **(March 2013- April 2013).**
- Participation in International conference on engineering sciences **(ICES-2015).**
- Participation in workshop on entrepreneurship, use of business intelligence for development in collaboration with Office of Research Innovative and Commercialization (ORIC), University of Punjab, Lahore **(November 2016).**
- Participation in poster presentation in 6$^{th}$ Invention to Innovation Summit 2017- Buy and Sell Technology, University of Punjab, Lahore **(March 2017).**
- Participation in poster presentation in 7$^{th}$ Invention to Innovation Summit 2018- Buy and Sell Technology, University of Punjab, Lahore **(2018)**
- Poster presentation in 8$^{th}$ Invention to Innovation Summit 2019- Buy and Sell Technology, University of Punjab, Lahore **(2-3$^{rd}$ April 2019)**
- Prototype presentation in 8$^{th}$ Invention to Innovation Summit 2019- Buy and Sell Technology, University of Punjab, Lahore **(2-3$^{rd}$ April 2019)**
- Attended a webinar on Carbon nanotube based membranes: A potential breakthrough technology for water purification and Photocatalytic membrane for water treatment application organized by Pakistan membrane society (**6 February 2021)**
- Attended a webinar on Tailoring the gas separation properties of polymer membranes by sub-nanometer engineering their micro porosity organized by Pakistan membrane society **(8 February 2022)**

## Achievements

- Awarded "Best Technology Award" in 7$^{th}$ Invention to Innovation Summit 2017- Buy and Sell Technology, University of Punjab, Lahore for the use of membrane technology.
- Awarded "Best Technology Award" in 6$^{th}$ Invention to Innovation Summit 2017- Buy and Sell Technology, University of Punjab, Lahore for the use of membrane technology.
- **Second position** in M.Phil. Polymer Technology, University of the Punjab, Lahore, Pakistan
- **First position** in Ph.D. Polymer Technology (theory course), University of the Punjab, Lahore, Pakistan

## International Books

- Modification of Polysulphone membrane via Layer by Layer Assembly
  **(ISBN-13:** 978-3-330-03025-1**, ISBN-10:** 3330030259**, EAN:** 9783330030251)

## International Chapters published

**Book:** Nanoscale Materials in Water Purification (1st Edition)

**(eBook ISBN:** 9780128139271, **Paperback ISBN:** 9780128139264) published by Elsevier.

**Chapter 11.** Electrospinning: A fiber fabrication technique for water purification by **Maria Wasim**, Aneela Sabir, Muhammad Shafiq and Tahir Jamil

**Chapter 14.** Carbon Nanotube and Graphene oxide Based Membranes by Aneela Sabir, **Maria Wasim**, Muhammad Shafiq and Tahir Jamil

**Chapter 13:** Electroactive Polymeric Membranes **by Maria Wasim**, Aneela Sabir, Muhammad Shafiq and Rafi Ullah Khan **Book:** Electroactive Polymeric Materials **Publisher:** Taylor and Francis (CRC Press) **eBook** ISBN9781003173502

## International Publications (Total impact factor: 59.228)

- **Maria Wasim** , Aneela Sabir, Muhammad Shafiq, Atif Islam, Tahir Jamil, *Preparation and characterization of composite membrane via layer by layer assembly for desalination.* **Applied Surface Science**, 2017. **396** p. 259–268. **(Impact factor 6.707)**

- **Maria Wasim**, Aneela Sabir, Muhammad Shafiq, Atif Islam, Mudassar Azam, Tahir Jamil. *Mixed matrix membranes: twostep process modified with electrospun (Carboxy methylcellulose sodium salt /Sepiolite) fibers for Nanofiltration***, Journal of Industrial and Engineering Chemistry,** 2017**, 50** p. 172-182 **(Impact factor 6.064)**

- **Maria Wasim,** Sadia Sagar, Aneela Sabir, Muhammad Shafiq, Tahir Jamil. *Decoration of open pore network in Polyvinylidene fluoride/ MWCNTs with chitosan for the removal of Reactive Orange 16 dye.* **Carbohydrate Polymers,** 2017. **174** p. 474-483 **(Impact factor 9.381)**

- Saba Asim, **Maria Wasim**, Aneela Sabir, Huma Andlib Sania Khuram, Muhammad Shafiq ,Adnan Ahmad, Tahir Jamil . *The effect of Nanocrystalline cellulose/Gum Arabic conjugates in crosslinked membrane for antibacterial, chlorine resistance and boron removal performance* **Journal of Hazardous Materials,** 2018. **343** p. 68-77 **(Impact factor 10.588)**

- **Maria Wasim** , Muhammad Shafiq, Rafi Ullah Khan, Aneela Sabir, *Crosslinked integrally skinned asymmetric composite membranes for dye rejection,* **Applied Surface Science**, 2019. **478** p.514-521. **(Impact factor 6.707)**

- **Maria Wasim**, Aneela Sabir Muhammad Shafiq, Rafi Ullah Khan, *Fractionation of direct dyes using modified vapor grown carbon nanofibers and Zirconia in cellulose acetate blend membranes*, **Science of Total environment,** 2019. **677** p.194-204 **(Impact factor 7.963)**

- **Maria Wasim**, Aneela Sabir, Rafi Ullah Khan, *Membranes with tunable graphene morphology prepared via Stöber method for high rejection of azo dyes,* **Journal of Environmental Chemical Engineering,** 2021, 9(5), 106069 **(Impact factor 5.909)**

- Muhammad Shafiq, Syed Nadir Hussain, Aneela Sabir, **Maria Wasim**, Shahzad Maqsood Khan, , Rafi Ullah Khan *Radiation grafting of vapour grown carbon nanofibers on Cellulose Acetate / Halloysite nanotubes matrix membrane for MgSO4 rejection,* **Journal of Environmental Chemical Engineering,** 2021, 9(6), 106804 **(Impact factor 5.909)**