

Research Map-Tanveer Ahmed Gadhi, PhD (Year 2020-2021-Targeting SDGs 6.1 & 6.3)

Research Interests and Objectives

1. Development of different nanoparticles for water and wastewater treatment and energy recovery.
2. Microbial and contaminants source Tracking.
3. Development of adsorption and filtration systems for the removal of dissolved and suspended materials.
4. Development of catalytic system for the degradation of organic compounds.
5. Anaerobic Digestion of Industrial Sludge for Biogas production
6. Agricultural Biomass

Research Projects:

- 1- Development of Wastewater Treatment and Reuse in Al-Rahim Textile Industry (Completed)
- 2- Eco-Innovation in Textile Processing (Completed)
- 3- Anaerobic Digestion of Textile Wastewater Sludge for production of biogas and biocompost (Ongoing)
- 4- Fate and Management of Emerging Contaminants (Ongoing)

Research Collaborators

Prof. Rasool Bux Mahar (USPCASW)
Prof. Zubair Ahmed (USPCASW)
Prof. Jennifer Weidaas (UU)
Dr. Jeffrey Bates (UU)
Prof. Alberto Tagliaferro (POLITO)
Prof. Barbara Bonelli (POLITO)
Prof. Simelys Hernandez (POLITO)
Prof. Najma Memon (UOS)

Thesis Topics:

- 1- Photocatalytic Assisted Removal of COD (ongoing-MS students Manan-19 Batch)
- 2- Photocatalytic Inhibition of selective Microbes in Water/Wastewater. (ongoing- MS students Sanjay-18F Batch)
- 3- Detection of Organic Pollutants and Heavy Metals in Wastewater used for Irrigation of Crops/Vegetables/Plants. (Ongoing)
- 4- Treatment and Purification of Brackish water (Ongoing- MS student Sajad-18F Batch)
- 5- Anaerobic digestion of textile wastewater sludge for production of biogas and biocompost (2 MS students-ongoing)
- 6- Synthesis of Nano-Adsorbents for removal of Emerging contaminants. (Tentative/Planned)
- 7- Design and Development of Photocatalyst Integrated Membranes for Adsorption assisted Photocatalysis of Organic pollutants under Solar light (Tentative- 2 Ms students/1 PhD)
- 8- Reuse of Sewage Water: assessment of risks and advantages (Tentative/Planned)
- 9- Caustic recovery in Indigo Dyeing (Tentative/Planned)
- 10- Photocatalytic membrane assisted removal of emerging pollutants (Tentative/ Planned)
- 11- Photocatalytic Water Splitting for production of Hydrogen gas (Tentative)
- 12- Microbial and contaminants source tracking in surface water using advanced techniques (Tentative)