

SAJID HUSSAIN

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Research Interests

- Development of Membranes
- Water Treatment
- Organic / Inorganic Synthesis
- Ionic Liquids
- Biomass Utilization for Energy & Environment

EDUCATION & PROFESSIONAL CERTIFICATION

Master of Engineering

Major in: Chemical Engineering
University of the Punjab Lahore, Pakistan

October 2014 – February 2017
3.40/4.00 CGPA (6th Position)

Bachelor of Engineering

Major in: Chemical Engineering
University of the Punjab Lahore, Pakistan

December 2008 – May 2013
3.36/4.00 CGPA

Registered Engineer

Pakistan Engineering Council

October 2013 (CHEM / 11193)

Member Engineer

International Association of Engineers Hong Kong

September 2014 (145176)

CAREER HISTORY

1. Graduate Research Assistant
Post Graduate Research Lab
ICET, University of the Punjab

August 2015 – September 2017

2. Teacher Assistant
ICET University the Punjab

October 2014 – March 2015

3. Trainee Production Engineer
Berger Paints Pvt. Ltd. (Powder Coatings)

July 2013 – June 2014

4. Ittehad Chemicals Pvt. Ltd. (Internship)

August 2011 – September 2011

RESEARCH PROJECTS

1. Development of Supported Ionic Liquid Membranes for the Removal of Heavy Metal Ions from Aqueous Solutions

In this project Hydrophobic Ionic Liquids were impregnated over solid supports to act as a liquid membrane for heavy metal separation from aqueous solutions. The membranes were characterized using **SEM**. Aqueous solutions of known Heavy metal concentrations were prepared and the removal efficiency of SILMs were observed using **AA**.

2. Turbid water treatment using pine cone extract

In this work Pine cone extract was prepared and its turbidity removal efficiency was analysed using synthetic and canal turbid waters. An optimum set of conditions were determined involving, coagulant dose, initial turbidity, ph, density of coagulant, and settling time.

3. Synthesis, Characterization, and applications of Imidazolium, Pyridinium and Ammonium based Ionic Liquids

This project involved the synthesis of Imidazolium, Pyridinium and Ammonium based Ionic Liquids by means of **solvent aided, microwave irradiated**, and **Hybrid** techniques. Moreover, a new method has also been tested successfully for ILs synthesis. These Ionic Liquids were characterized using **IR, NMR** and their properties such as MP, BP, Decomposition Temperature, Density, Viscosity, Moisture Content etc. were analysed.

4. Solid liquid extraction of Rice Bran oil using different solvents

This research work was targeted for the high percentage Rice Bran Oil recovery using solid liquid separation process and by employing different pure, binary, and ternary solvents. Various controlling parameters such as moisture content in bran, particle size, solvent and solvent to bran ratio, temperature, agitation, and number of stages were investigated.

PUBLICATIONS

Published / OLF / Accepted

S. Hussain A. Shafeeq, U. Anjum, J. Serb. Chem. Soc. (2018),
<https://doi.org/10.2298/JSC170704023H> (OLF)

In Review / Submitted

1. "Pine cone extract as natural coagulant for treatment of turbid water" **Sajid Hussain***, Amir Shafeeq, A.S. Ghauri, Ashfaq Ahmed In Review, Current Science (2017)
2. "Solvent effectiveness factor: A new correlation to study the influence of solvent, temperature, and stirring rate on percentage synthesis yield of ionic liquids", **Sajid Hussain***, Amir Shafeeq, Maliha Uroos, Shabnam Javed In Review, The Journal of Serbian Chemical Society (2017)

ANALYTICAL SKILLS

- 1- Atomic Absorption Spectroscopy (**AAS**)
- 2- Scanning Electron Microscopy (**SEM**)
- 3- Ultraviolet–visible Spectroscopy (**UV-Vis**)
- 4- Gas Chromatography Mass Spectrometry (GC-MS)
- 5- Infrared Spectroscopy (**IR**)
- 6- Nuclear Magnetic Resonance Spectroscopy (**NMR**)

AWARDS & DISTINCTIONS

- 1- 6TH Position in M.Sc. Chemical Engineering Batch of 110 students
- 2- Awarded Research Grant by Higher Education Commission of Pakistan
- 3- Won best Poster Presentation Award in Energy & Environment Conference, UET Lahore
- 4- Awarded Merit Laptop Prize by Govt. of Pakistan
- 5- Won Scholarships from HEC & Govt. of Pakistan in Bachelor's and Master's program

PROFESSIONAL TOOLS / SOFTWARE

- Windows Operating Systems (7 / 8 / 10)
- ACD Labs
- MS Visio
- Microsoft Office (Word / Excel / Powerpoint)
- Origin Lab
- ChemCad

LANGUAGES SKILLS

- English – Fluent (**IELTS Overall 7.0 Bands (L-7.5, R-6.5, W-7.0, S-7.5)**)
- Urdu – Native
- Punjabi – Native