

SADIA MEHMOOD SATTI

Lecturer (Microbiology)

Kohsar University Murree, Pakistan

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RESEARCH & TEACHING INTERESTS

I am an enthusiastic Molecular Microbial Ecologist. I am interested in exploring microbial diversity in various environmental niches and elucidating the wonders that they are doing in ecosystem. My current research focus and expertise lies in evaluating the ecotoxicological impact of most wide spread anthropogenic pollutant, plastics, and understanding the role of microorganisms towards finding a sustainable solution to plastic pollution.

RESEARCH AND PROFESSIONAL EXPERIENCE

- **2022-Present** Lecturer Microbiology at Kohsar University Murree, Pakistan
- **2021-2022** Postdoc Fellow at Alpha Genomics (Pvt) Limited, Islamabad, Pakistan
- **2020-2022** Assistant Professor (Visiting Faculty) at University Institute of Biochemistry and Biotechnology, UAAR, Pakistan
- **2019- 2020** Assistant Professor (IPFP) at University Institute of Biochemistry and Biotechnology, UAAR, Pakistan
- **2015-2016** Visiting Research Scholar at Michigan State University, USA.
- **2017-2018** Research associate at Environmental Microbiology and Geo-microbiology Research Lab, Quaid-e-Azam University, Islamabad, Pakistan
- **2014-15** Research associate at Environmental Microbiology and Geo-microbiology Research Lab, Quaid-e-Azam University, Islamabad, Pakistan
- **2011-2013** Research associate at Environmental Microbiology and Geo-microbiology Research Lab, Quaid-e-Azam University, Islamabad, Pakistan
- **2014-15 & 2017-2018** Teaching assistant at Environmental Microbiology and Geo-microbiology Research Lab, Quaid-e-Azam University, Islamabad, Pakistan
- **Co-Supervised Mphil Scholars** at Environmental Microbiology and Geo-microbiology Research Lab, Quaid-e-Azam University, Islamabad, Pakistan

- **Member of The Curriculum Development and Revision Committee at University Institute of Biochemistry and Biotechnology, UAAR, Pakistan**
- Experience with **Development and maintenance of microbiology teaching laboratory**
- Experience with **Development of lab manuals for BS Microbiology and Biochemistry**
- **Member of The Admission Committee for BS at University Institute of Biochemistry and Biotechnology, UAAR, Pakistan**
- **Secretary Transport Committee at Kohsar University Murree**
- **Secretary Selection Committee for employees on regular basis at Kohsar University Murree**
- **Assistant registrar Administration at Kohsar University Murree**
- **Member KJ GYM OVERSIGHT Committee at Kohsar University Murree**

EDUCATION

- **Ph.D., Microbiology. 2018**
Environmental Microbiology and Geo-microbiology Research Lab, Quaid-e-Azam University, Islamabad, Pakistan
Thesis Title: Microbial Degradation of Polyester-based Biodegradable Plastics
Faculty Advisor: Dr. Aamer Ali Shah
- **M.Phil., Microbiology. 2013**
Environmental Microbiology and Geo-microbiology Research Lab, Quaid-e-Azam University, Islamabad, Pakistan
Thesis Title: Isolation and characterization of thermotolerant yeast for ethanol production
Faculty Advisor: Dr. Abdul Hameed
- **M.Sc., Microbiology. 2010**
Microbiology Department Quaid-e-Azam University Islamabad, Pakistan
- **B.Sc., 2008**
Punjab University, Lahore, Pakistan

RESEARCH PROJECTS

- Biodegradation of biodegradable plastic mulch film in soil environment and its impact on soil microbial communities and ecosystem functions (project # 21-2602/SRGP/HEC) (worth Rs. 0.5M)

RESEARCH SKILLS

- DEVELOPMENT OF DIRECT MEASUREMENT RESPIROMETRIC SYSTEM (DMR) for real world Biodegradation and ecotoxicological studies
- Metagenomic analysis
- R and QIIME2 for statistical and diversity analysis
- Basic molecular Biology techniques (DNA/RNA extraction)
- Polymerase chain reaction (PCR)
- Whole genome Sequencing data analysis
- Analytical techniques (FTIR, SEM, LCMS, GPC)
- Enzyme and protein chemistry

PUBLICATIONS

- **SATTI, S.M.; CASTRO-AGUIRRE, E.; SHAH, A.A.; MARSH, T.L.; AURAS, R.** (2021). Genome Annotation of Poly(lactic acid) Degrading *Pseudomonas aeruginosa*, *Sphingobacterium* sp. and *Geobacillus* sp. *International journal of molecular sciences*. 22, 7385. **(IF 5.9)**
- **SATTI, S. M., & SHAH, A. A.** (2020). Polyester-based biodegradable plastics: an approach towards sustainable development. *Letters in Applied Microbiology*, 70(6), 413-430. **(IF 2.2)**
- **SATTI, S. M., SHAH, Z., LUQMAN, A., HASAN, F., OSMAN, M., & SHAH, A. A.** (2020). Biodegradation of Poly (3-hydroxybutyrate) and Poly (3-hydroxybutyrate-co-3-hydroxyvalerate) by Newly Isolated *Penicillium oxalicum* SS2 in Soil Microcosms and Partial Characterization of Extracellular Depolymerase. *Current microbiology*. **(IF 1.7)**
- **SATTI, S.M., NOOR, H., UD DIN, S., FARMAN, M., HASAN, F., KHAN, S., BADSHAH, M. AND SHAH, A.A.,** 2020. Insight on esterase from *Pseudomonas*

aeruginosa strain S3 that depolymerize poly (lactic acid)(PLA) at ambient temperature. *Polymer Degradation and Stability*, p.109096. **(IF 4.5)**

- **SATTI, S. M.,** ABBASI, A., KHAN, S., RANA, Q., MARSH, T. L., AURAS, R., HASSAN, F., BADSHH M. & SHAH, A. A., 2019 Statistical Optimization of Lipase Production from *Sphingobacterium* sp. Strain S2 and Evaluation of Enzymatic Depolymerization of Poly(lactic acid) at Mesophilic Temperature. (*Polymer degradation and stability doi 10.1016/j.polymdegradstab.2018.11.030* **(IF 4.5)**)
- **SATTI, S. M.,** SHAH, A. A., MARSH, T. L. & AURAS, R. 2018. Biodegradation of Poly (lactic acid) in Soil Microcosms at Ambient Temperature: Evaluation of Natural Attenuation, Bio-augmentation and Bio-stimulation. *Journal of Polymers and the Environment*, 1-10. **(IF 2.6)**
- **SATTI, S. M.,** SHAH, A. A., AURAS, R. & MARSH, T. L. 2017. Isolation and characterization of bacteria capable of degrading poly(lactic acid) at ambient temperature. *Polymer Degradation and Stability*, 144, 392–400. DOI 10.1016/j.polymdegradstab.2017.08.023) **(IF 4.5)**
- OSMAN, M., **SATTI, S. M.,** LUQMAN, A., HASAN, F., SHAH, Z. & SHAH, A. A. 2017. Degradation of Polyester Polyurethane by *Aspergillus* sp. Strain S45 Isolated from Soil. *Journal of Polymers and the Environment*. (DOI 10.1007/s10924-017-0954-0) **(IF 2.6)**
- **SATTI, S. M.,** SHAH, A. A., AURAS, R., & MARSH, T. L. (2019). Genome annotation of Poly (lactic acid) degrading *Pseudomonas aeruginosa* and *Sphingobacterium* sp. *bioRxiv*, 609883
- Influence of film mulching on soil microbial community structure and functions in strawberry field (Under Review)
- Impacts of Plastic on the Soil Biophysical Environment (Under Review)

POSTER AND CONFERENCE PRESENTATIONS

- Satti SM, (December 14, 2017) “Biodegradation of polyesters based biodegradable plastics by *Aspergillus fumigatus*, S45, isolated from soil” 5th conference on biological and computational sciences, Pakistan.(Oral Presentation)

- Satti SM, Hassan F, Shah AA, Luqman A. (March 26, 2015) “Microbial degradation of polyester based biodegradable plastics” 10th Biennial international conference of Pakistan society for microbiology.(Poster)
- Leena Mavis Cycil, Fariha Hassan, Sadia Satti, Maria Abdul Salam, Aamer Ali Shah, Abdul Hameed.(March 27, 2015) “Physiological, biochemical and molecular characterization of extremely halophilic bacteria isolated from Khewra mine” 10th Biennial international conference of Pakistan society for microbiology. 1st place poster competition.
- Sadia Mehmood Satti, Maria Abdul Salam, Leena Mavis Cycil, Abdul Hameed, Fariha Hassan, Aamer Ali Shah.(March 26, 2015) “Isolation and characterization of thermos tolerant yeast for bioethanol production from sugarcane molasses” 10th Biennial international conference of Pakistan society for microbiology. (Poster)
- Maria Abdul Salam, Farah Masood, Fariha Hassan, Sadia Satti, Leena Mavis Cycil, Abdul Hameed. (March 26, 2015) “Tailoring of monomers composition of polyhydroxy alkanoates produced by *Bacillus Cereus* FA11 for green composite synthesis.” 10th Biennial international conference of Pakistan society for microbiology. (Poster)

FELLOWSHIPS & AWARDS

- Higher Education Commission Indigenous scholarship for PhD studies
- University Merit Scholarship holder for M. Phil studies
- Talent Forming Scholarship by Higher Education Commission

EXTRACURRICULAR ACTIVITIES

- Worked as Finance Secretary in the Microbiological Society at Quaid-e-Azam University.
- Captain of women cricket team of the department of Microbiology Quaid-e-Azam University.