

## CURRICULUM VITAE

### AAMER ALI SHAH, Ph.D

Professor (Tenured)

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Citations: <http://scholar.google.ca/citations?hl=en&user=iLIGORIAAAAJ>



### Qualifications

- 2<sup>nd</sup> Post Doctorate (JSPS Fellow), University of Tsukuba, Japan (Nov. 2010 – Oct. 2012)
- 1<sup>st</sup> Post Doctorate (MIF Fellow), University of Tsukuba, Japan (Aug. 2008 – Jan. 2009)
- Ph. D. (Microbiology) Quaid-i-Azam University, Islamabad (2007)
- M. Phil. (Microbiology) Quaid-i-Azam University, Islamabad (2001)
- DVM, University of Agriculture Faisalabad (1998)

### Current Status

- Professor (Tenured), in the Department of Microbiology, Quaid-i-Azam University, Islamabad, Pakistan.

### Research interests

Bio-upcycling for biocoverion of recalcitrant plastics into valuable material; Biodegradation and Bioremediation of environmental pollutants like plastics, heavy metals, lignin from pulp and paper industry effluent; Extremophiles (e.g. metallo-resistant, radioresistant, thermophiles, acidophiles); Production and characterization of microbial enzymes; Geomicrobiology; Biohydrometallurgy (Biosorption and bioleaching) for bioremediation and resource recovery; Utilization of pretreated lignocellulosic biomass for production of ethanol and fatty alcohols.

### Teaching/Professional Experience

1. Professor QAU, (Since Feb. 2020)
2. Associate Professor QAU, (Since Aug 2015)
3. Assistant Professor Microbiology; QAU (Feb. 2009 – Aug. 2015)
4. Lecturer (Biotechnology), QAU (Oct. 2007 – Feb. 2009)
5. Assistant Director, Intellectual Property Organization, Islamabad, Pakistan (June 2006-June 2007)
6. Research Officer, Pakistan Health Research Council, Islamabad, Pakistan (Oct. 2004 – May 2005)

### Honors/Awards

1. Included in the list of top 2% most cited scientists of the world by Stanford University, USA
2. Prof. A. R. Shakoori Gold Medal 2019 awarded by Zoological Society of Pakistan
3. PAS Gold Medal in Biological Sciences 2018 awarded by Pakistan Academy of Sciences
4. International Collaborative Research Grants (HEC-TUBITAK, PSF-NSFC, Pak-UK Education Gateway
5. Award of Travel Grants for attending International Conferences in 2013-2018 funded by HEC, Pakistan.
6. PCST Research Productivity Awards for the years 2010-2014 awarded by Pakistan Council for Science and Technology
7. JSPS Postdoctoral Fellowship 2010-2012 awarded by Japan Society for Promotion of Science, Japan
8. MIF Postdoctoral Fellowship 2008-2009 awarded by Matsumai International Foundation, Japan.

### PhDs and M.Phil Supervised

	Supervised	In Progress
Ph.D	17	05
M.Phil	78	07

### Impact Factor and Citations

Publications	Impact Factor	Citations	H-index	i10-index
162	>400	>10300	38	90

### Research Interests

- Bio-upcycling for conversion of recalcitrant plastics into value added materials: establishment of a circular (bio)-economy for plastics;
- Investigation for the plastics degrading potential microorganisms in the environment, understanding the mechanism of degradation as well as role of esterolytic enzymes such as esterases, lipases or cutinases in their degradation;
- Investigation for metallo-resistant microorganisms from metal contaminated environment and understanding their role in recovery and removal of metals through leaching and sorption strategies.
- Development of bioluminescence-based bioreporter systems for real time monitoring of heavy metals in environmental water samples.
- Study of microbes that live in extreme environments such as thermophiles, radio-resistant, acidophiles, alkaliphiles as well as metallo-resistant microorganisms, understanding their mechanism of survival to extreme conditions and their metabolites of biotechnological significance.
- Studies on production, purification and characterization of industrially important enzymes with desirable properties such as thermostability, alkaline stability, halophilicity and organic solvents tolerance are important to meet the industrial demands.
- Bioremediation and detoxification of pulp and paper mills effluents by microorganisms and development of pilot scale bioreactor for effluent treatment.
- Production of bio-ethanol from lignocellulosic biomass
- Co-utilization of methanol and biomass hydrolysates for production of fatty acids derivatives
- Antimicrobial susceptibility testing, molecular epidemiology and serodiagnostics of human pathogens

### List of Selected Publications

1. Salah Ud Din, Kalsoom Kalsoom, Sadia Mehmood Satti, Salah Uddin, Smita V Mankar, Esma Ceylan, Fariha Hasan, Samiullah Khan, Malik Badshah, Ali Osman BELDÜZ, Sabriye Çanakçı, Baozhong Zhang, Javier A. Linares-Pastén, **Aamer Ali Shah**. Purification and characterization of a cutinase-like enzyme with activity on Polyethylene terephthalate (PET), from a newly isolated bacterium *Stenotrophomonas maltophilia* PRS8 at mesophilic temperature. Applied Sciences 2023; 13: 3686.
2. Martin Koller, Kenichiro Matsumoto, Zhanyong Wang, Fan Li, **Aamer Ali Shah**. Biodegradation of plastics. Frontiers in Bioengineering and Biotechnology 2023; 11:1150078. doi: 10.3389/fbioe.2023.1150078
3. R. Hayat, G. Din, A. Farooqi, A. Haleem, S. ud Din, F. Hasan, M. Badshah, S. Khan, **A. A. Shah**. Characterization of melanin pigment from *Aspergillus terreus* LCM8 and its role in cadmium remediation. International Journal of Environmental Science and Technology 2023. <https://doi.org/10.1007/s13762-022-04165-0>
4. Wasim Sajjad, Mahnoor Nadeem, Tayyaba Alam<sup>1</sup>, Asim ur Rehman, Sumra Wajid Abbasi, Sajjad Ahmad, Ghufuranud Din, Samiullah Khan, Malik Badshah, Sarah Gul, Muhammad Farman, **Aamer Ali Shah**. Biological Evaluation and Computational Studies of Methoxy-flavones from Newly Isolated Radioresistant *Micromonospora aurantiaca* Strain TMC-15. Applied Biochemistry and Biotechnology 2023 (Accepted)
5. Yunxia Li, XiaoXin Zhai, Wei Yu, Dao Feng, **Aamer Ali Shah**, Jiaoqi, Gao, Yongjin J. Zhou. Production of fatty acids from various carbon sources by *Ogataea polymorpha*. Bioresource and Bioprocessing 2022; 9: 78 (<https://doi.org/10.1186/s40643-022-00566-8>).
6. Abdul Haq, Alam Khan, Haji Khan, Samiullah Khan, **Aamer Ali Shah**, Fariha Hasan, Safia Ahmed, Francis L de los Reyes, Malik Badshah. Enhancement of biogas yield during anaerobic digestion of *Jatropha curcas* seed by pretreatment and co-digestion with mango peels. Biomass Conversion and Biorefinery 2022; 12: 1595-1603
7. Marium Saba, Anum Khan, Huma Ali, Amna Bibi, Zeeshan Gul, Alam Khan, Muhammad Maqsood Ur Rehman, Malik Badshah, Fariha Hasan, **Aamer Ali Shah**, Samiullah Khan. Microbial Pretreatment of Chicken Feather and Its Co-digestion With Rice Husk and Green Grocery Waste for Enhanced Biogas Production. Frontiers in Microbiology 2022; 13: 792426.
8. Sanam Islam Khan, Asaf Zarin, Safia Ahmed, Fariha Hasan, Ali Osman Belduz, Sabriye Çanakçı, Samiullah Khan, Malik Badshah, Muhammad Farman, Aamer Ali Shah. Degradation of lignin by *Bacillus altitudinis* strain SL7 isolated from pulp and paper mill effluent. Water Science and Technology 2021 (<https://doi.org/10.2166/wst.2021.610>)
9. Numan Saleh Zada, Ali Osman Belduz, Halil Ibrahim Güler, Miray Sahinkaya, Sanam Islam Khan, Marium Saba, Kadriye Inan Bektas, Yakup Kara, Sevgi Kolaylı, Malik Badshah, **Aamer Ali Shah**, Samiullah Khan. Cloning, Biochemical characterization and molecular docking of Novel thermostable  $\beta$ -1 glucosidase BglA9 from *Anoxybacillus Ayderensis* A9 and its application in de-glycosylation of Polydatin. International Journal of Biological Macromolecules 2021; 193: 1898-1909.

10. Alam Khan, Sedrah Akbar, Valentine Okonkwo, Cindy Smith, Samiullah Khan, **Aamer Ali Shah**, Fazal Adnan, Umer Zeeshan Ijaz, Safia Ahmed and Malik Badshah Enrichment of the hydrogenotrophic methanogens for, in-situ biogas up-gradation by recirculation of gases and supply of hydrogen in methanogenic reactor. *Bioresource Technology* 2021; 345: 126219.
11. Pervaiz Ali, Daniel Fucich, **Aamer Ali Shah**, Fariha Hasan, Feng Chen. Cryopreservation of cyanobacteria and eukaryotic microalgae using exopolysaccharide extracted from a glacier bacterium. *Microorganisms* 2021; 9: 395.
12. Asifa Farooqi, Ghufanud Din, Rameesha Hayat, Malik Badshah, Samiullah Khan, **Aamer Ali Shah**. Characterization of *Bacillus nealsonii* strain KBH10 Capable of Reducing Aqueous Mercury in Lab-Scale Reactor. *Water Science and Technology* 2021 (<https://doi.org/10.2166/wst.2021.122>)
13. Ghufanud Din, Abrar Hassan, John Dunlap, Steven Ripp, **Aamer Ali Shah**. Cadmium tolerance and bioremediation potential of filamentous fungus *Penicillium chrysogenum* FMS2 isolated from soil. *International Journal of Environmental Science and Technology* 2021 (<https://doi.org/10.1007/s13762-021-03211-7>)
14. Ghufanud Din, Asifa Farooqi, Wasim Sajjad, Muhammad Irfan, **Aamer Ali Shah**. Characterization of Cadmium and Antibiotic Resistant *Acinetobacter calcoaceticus* STP14 Isolated from Sewage Treatment Plant. *Journal of Basic Microbiology* 2021; 61: 230-240. (<https://doi.org/10.1002/jobm.202000538>)
15. Sanam Islam Khan, Numan Saleh Zada, Miray Sahinkaya, Dilsat Nigar Colak, Safia Ahmed, Fariha Hasan, Ali Osman Belduz, Sabriye Çanakçı, Samiullah Khan, Malik Badshah, **Aamer Ali Shah**. Cloning, Expression and Biochemical Characterization of Lignin-degrading DyP-Type Peroxidase from *Bacillus* sp. Strain BL5. *Enzyme and Microbial Technology* 2021; 151: 109917.
16. Hazrat Noor, Sadia Mehmood Satti, Salah ud Din, Muhammad Farman, Fariha Hasan, Samiullah Khan, Malik Badshah, **Aamer Ali Shah**. Insight on Esterase from *Pseudomonas aeruginosa* Strain S3 that Depolymerize Poly(lactic acid) (PLA) at ambient temperature. *Polymer Degradation and Stability* 2020; 174: 109096.
17. Sadia M Satt, Amna M Abbasi, Salahuddin Khan, Qurrat ul Ain Rana, Terence L Marsh, Rafael Auras, Fariha Hasan, Malik Badshah, Muhammd Farman, **Aamer Ali Shah**. 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* 2019; 160: 1-13.
18. Wasim Sajjad, Sajjad Ahmad, Iffat Aziz, Syed Sikander Azam, Fariha Hasan, Aamer Ali Shah. Antiproliferative, antioxidant and binding mechanism analysis of prodigiosin from newly isolated radio-resistant *Streptomyces* sp. strain WMA-LM31. *Molecular Biology Reports* 2018; 45(6):1787-1798.
19. Sehroon Khan, Sadia Nadir, Zia Ullah Shah, **Aamer Ali Shah**, Samantha C. Karunarathna, Jianchu Xu, Afsar Khan, Shahzad Munir, Fariha Hasan. Biodegradation of polyester polyurethane by *Aspergillus tubingensis*. *Environ Pollut* 2017; 225: 269-280.

#### International Conferences

1. Wasim Sajjad, Fariha Aman Nazir, Iffat Aziz, Saira Bano, Fariha Hasan, **Aamer Ali Shah**. Anti-proliferative and Antioxidant Activities of Prodigiosin Extracted from Radio-resistant *Streptomyces* sp. strain WMA-LM31. ASM Microbes 2018 organized by American Society of Microbiology held on June 07-11, 2018 at Georgia World Congress Center, Atlanta, USA.
2. Wasim Sajjad, Manzoor Ahmed, Salman Khan, Sunniya Ilyas, Fariha Hasan, **Aamer Ali Shah**. Relationship between carotenoid pigments and resistance to ultra-violet radiation in newly isolated *Deinococcus* sp. strain WMA-LM9. *Extremophiles* 2016: 11<sup>th</sup> International Congress on Extremophiles held on September 12-16, 2016, Kyoto, Japan.
3. **Aamer Ali Shah**, Ahmed Nawaz, Fariha Hasan. Purification and characterization of a depolymerase enzyme from *Brevundimonas* sp. that degrade aliphatic polyesters. VI International Conference on Environment, Industrial and Applied Microbiology (BioMicroWorld 2015) October 28-30, 2015, Barcelona, Spain.
4. Ayesha Aslam, Kanwal Rafique, Fariha Hasan, Aamer Ikram, Irfan Ali Mirza, Mahmoud A. Ghannoum, **Aamer Ali Shah**. Antifungal susceptibility and biofilm characterization of *Candida* species isolated from a Tertiary Care Hospital, Rawalpindi, Pakistan. IUMS 2014 Congresses, July 27-August 01, 2014, Montreal, Canada.

#### Joint Research Collaborations

No.	International Groups	Institution
1.	Prof. Javier A. Linares-Pastén	Department of Chemistry, Lund University, Sweden
2.	Prof. Yongjin Zhou	Chinese Academy of Sciences, Dalian, China
3.	Prof. Toshiaki Nakajima-Kambe	University of Tsukuba, Japan
4.	Prof. Ali Osman Belduz	Karadeniz Technical University, Trabzon, Turkey
5.	Prof. Steven Ripp	University of Tennessee, Knoxville, USA
6.	Prof. Arthur J. Ragauskas	University of Tennessee, Knoxville, USA
7.	Prof. Rafael Auras	Michigan State University, Michigan, USA

**Research Grants**

<b>Project Title</b>	<b>PI/ Co-PI</b>	<b>Amount (Mn)</b>	<b>Funding</b>	<b>Duration</b>
Biocatalysis as a green route toward upcycling of polyethylene terephthalate (PET) into value added products	PI	11.517250	HEC	2022-2025
Bacteriophage derived proteins a novel approach as enzobiotics to combat multi drug resistant bacteria	Co-PI	12,856,022	HEC	2022-2025
Co-Utilization of Methanol And Sugarcane Hydrolysates For Production of Fatty Acids Derivatives	PI	7.6	PSF-NSFC	2021-2023
Bioremediation and Toxicity Reduction of Pulp and Paper Mill Effluents by Newly Isolated Indigenous Microbial Strains as well as Development of Pilot Scale Bioreactor for Effective Removal of Pollutants	PI	2.680	HEC-TUBITAK	2018-2021
Production of xylanases from thermophilic microorganisms and their industrial applications	PI	2.596	HEC	2016-2018 (Completed)
Biodegradation of synthetic polyesters	PI	2.78	HEC	3-Years (Completed)