

CURRICULUM VITAE

DR. MD SHAHBAZ ANWAR

Date of Birth: 01.01.1981

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DESIGNATION

Assistant Professor in Microbiology, Dum Dum Motijheel College, Kolkata-700074.

ACADEMIC BACKGROUND

- Ph.D. (Microbiology), GBPUAT, Pantnagar, Uttarakhand, 2011
- M.Sc. (Agricultural microbiology), Aligarh Muslim University (AMU), Aligarh, 2006
- B.Sc. (ZBC with Chemistry-Honours), Aligarh Muslim University (AMU), Aligarh, 2003

POSITIONS HELD/ HOLDING

- 2019–Present: Assistant Professor in Microbiology, Dum Dum Motijheel College, Kolkata
- 2011–2019: Contract Faculty, Department of Biotechnology, Kumaun University, Uttarakhand

TEACHING INTEREST

Environmental Biotechnology, Bio-entrepreneurship and Biosafety, Introductory Microbiology, Environmental Biotechnology, Applied Microbiology, Immunology and Immuno-technology, Bioprocessing Engineering, Microbiology and Industrial application, General Microbiology, Microbiological Techniques, Food fermentation Technology, Food microbiology.

Software Skills: Word Processing viz., Excel, PowerPoint and Microsoft word, Scanning, Web Surfing (e-mail), MEGA4, CLUSTAL-X software, NCBI-BLAST etc.

Working Knowledge of Instruments: **Molecular Technique:** Comet Assay, Genomic & Plasmid DNA Isolation, PCR, Gel Electrophoresis, Southern, ELISA. **Bio-informatics Tools:** BLAST-NCBI, Genbank Sequence Submission to getting accession number, and Phylogenetic Tree construction by using MEGA4 software. **Analytical Techniques:** Biodegradation Assays, UV-VIS Spectrophotometry, TLC, Paper chromatography, Gel Permeation chromatography, Lyophilization, Sonication, Microscopy (Bright-field, SEM & AFM Analysis), FT-IR, DSC and TGA analysis, Centrifugation. **Microbiological Techniques:** Culture Isolation, Maintenance & Regeneration, Biochemical Characterization of Microbial Cultures, and Detection of β -lactamase production, Carbohydrate and protein estimation test. Bacterial growth curve and characteristic of Bacteria, Tolerance trait of bacteria against pH and salt, Optimization of different parameters, Determination of MIC of given antimicrobial drug, Detection of fecal coli from bacteria in drinking water by MPN method. **Biochemical Techniques:** IAA production test and its quantification, HCN production test, Siderophore production and its type detection, Biocontrol activity, phosphate solubilization and its quantification, ACC deaminase production, Enzyme production (Amylase, Keratinase, Proteases). **Tissue culture techniques:** Sterilization, media preparation, Inoculation, In vitro plant tissue culturing and their hardening.

RESEARCH PROFILE

Ph.D. Thesis: *Biodegradation studies of PVC and LDPE using indigenously developed microbial consortia*

Supervisor: Prof. Reeta Goel, Department of Microbiology, GBPUAT, Pantnagar.

M.Sc. Dissertation Thesis: "Isolation and Characterization of plant growth promoting Bacteria from Rhizospheric soil"

Supervisor: Prof. Javed Musarrat, Department of Agricultural Microbiology, Faculty of Agricultural Science, AMU, Aligarh.

PUBLICATIONS:

Journal Paper:

1. Bhatt, P., Verma, A., Verma, S., **Anwar, M.S.**, Prasher, P., Mudila, H., Chen, S. (2020). Understanding Phytomicrobiome: A Potential Reservoir for Better Crop Management. *Sustainability*, 12: 5446.
2. **Anwar, M.S.**, Paliwal, A., Firdous, N., Verma, A., Kumar, A., Pande, V. (2019). Co-culture development and bioformulation efficacy of psychrotrophic PGPRs to promote growth and development of Pea (*Pisum sativum*) plant. *J. Gen. Appl. Microbiol.*, 65: 88–95.
3. **Anwar, M.S.**, Upadhyay, M. Firdous, N., Verma, A., Pande, V. (2017). Multi-trait activity of *Enterobacter* sp. Strain MH4 towards Fluorene Degradation as well as in Plant Growth Promotion. *SOJ Microbiology & Infectious Diseases*, 5(5): 1-10.
4. Paliwal, A., **Anwar, M.S.**, Firdous, N. (2016). Analysis of Various PGP Activities of Psychrotrophic Bacteria WBT1, and Its Efficacy under Bioformulation. *J. Chem. Eng. Chem. Res.*, 3(11): 1050-1056.
5. Verma, A., Singh, H., **Anwar, M.S.**, Kumar, S., Ansari, M.W., Agrawal, S. (2016) Production of Thermostable Organic Solvent Tolerant Keratinolytic Protease from *Thermoactinomyces* sp. RM4: IAA Production and Plant Growth Promotion. *Frontier in Microbiology*, 7: 1-13.
6. Verma, A., Singh, H., **Anwar, M.S.**, Chattopadhyay, A., Tiwari, K.K., Kaur, S., Dhilon, G.S. (2016). Microbial keratinases: industrial enzymes with waste management potential. *Critical Reviews in Biotechnology*, 13: 1-16.
7. **Anwar, M.S.**, Kapri, A., Chaudhary, V., Mishra, A., Ansari, M.W., Souche, Y., Nautiyal, C., Zaidi, M.G.H., Goel, R. (2015). Response of indigenously developed bacterial consortia in progressive degradation of polyvinyl chloride. *Protoplasma*, 253(5): 1023-1032.
8. **Anwar, M.S.**, Siddiqui, M.T., Verma, A., Ansari, M.W., Nailwal, T.K. Pande, V. (2014). Multitrait plant growth promoting (PGP) rhizobacteria isolated from *Brassica juncea* rhizosphere: Keratin degradation and plant growth promotion. *Commun. Integr. Biol.* 7(1): e27683(1-9).
9. Nailwal, S., **Anwar, M.S.**, Budhani, K.K., Verma, A., Nailwal, T.K. (2014). *Burkholderia* sp. from rhizosphere of *Rhododendron arboretum*: Isolation, identification and plant growth promotory (PGP) activities. *J. Appl. Nat. Sci.*, 6(2): 473-479.
10. Verma A, Singh H, **Anwar M.S.**, Ansari M.W., Agrawal S. (2014). Production of alkaline protease from a haloalkaliphilic soil thermoactinomycete and its application in feather fibril disintegration. *Afr. J. Microbiol. Res.*, 8(27): 2565-2573.
11. **Anwar, M.S.**, Rana, V.R.S., Pande, V. (2014). Isolation screening and characterization of *B. cereus* and *E. asburiae* isolated from rhizospheric soils of Uttarakhand for different plant growth promoting (PGP) activities: an invitro study. *Int. J. Appl. Bas. Appl. Agric. Res.*, 12(2): 214-260.
12. Verma, A., Ansari, M.W., **Anwar, M.S.**, Agarwal, R., Agarwal, S. (2013). Alkaline Protease from *Thermoactinomyces* sp. RS1 mitigates industrial pollution. *Protoplasma*, 251(3): 711-718.
13. **Anwar, M.S.**, Negi, H., Zaidi, M.G.H., Gupta, S., Goel, R. (2013). Biodeterioration studies of thermoplastics in nature using indigenous bacterial consortia. *Braz. arch. biol. technol.*, 56(3): 475-484.
14. **Anwar, M.S.** (2012). Isolation and Characterization of Phosphate Solubilizing Microorganism, *Res. J. Agri. Sci.*, 3(2): 336-340.
15. Sah, A., Negi, H., Kapri, A., **Anwar, M.S.**, Goel, R. (2011). Comparative shelf life and efficacy of LDPE and PVC degrading bacterial consortia under bioformulation, *Ekologija*, 57(2): 55–61.

Book Chapter and Monograph:

1. **Anwar, M.S.** (2012). Plant Growth Promoting Microbe: A Functional Evaluation. LAP Lambert Academic Publishing, pp. 1-66.
2. **Anwar, M.S.**, Pandey, A., Singh, M.K., Firdous, N., Verma, A., Ansari, M.W., Nailwal, T.K. (2017). Ethno-botanical potential of *Prunella vulgaris* and Human health. Scope of Phytochemically Unexplored Medicinal Plants, Enriched Publications Pvt. Ltd., pp. 61-71.
3. Bhardwaj, A., Devi, M., Ansar, M., Gupta, R., Nath, M., **Anwar, M.S.**, Bains, G., Ansari, M.W. (2017). Production of secondary metabolite s from Medicinal plant by Biotech Based technology. Enriched Publications. Scope of Phytochemically Unexplored Medicinal Plants. Enriched Publications Pvt. Ltd., pp.181-185.

Proceeding Paper:

4. Paliwal, A., Singh, S., Firdous, N., **Anwar, M.S.** (2018). Assessment of plant growth promoting aptitudes of bacterial strain HB₂ before and after bio-formulation. Proc. of the International Conference Advancement in Technologies & its application in Current Era (ICATACE), Institute of Research Engineers and Doctors, USA. Organized by B.T. Kumaun Institute of Technology, India.
5. **Anwar, M.S.**, Singh, S., Mona, U., Firdous, N., Verma, A., Pande, V. (2018). Characterization of indigenous potential bacteria to reduce fluorene concentration and chemical fertilizer utilization from the soil environment. Proc. of the National Conference on Challenges and Strategies to Improve Crop Productivity in Changing Environment. Organized by Department of Botany Zakir Husain Delhi College, University of Delhi.
6. **Anwar, M.S.**, Bisht, K.S., Joshi, N., Firdous, N., Verma, A., Pande, V. (2018). Screening and characterization of plant growth promoting Rhizobacteria *H₁W_{N2}* from wheat (*T. aestivum*) rhizosphere. Proc. of the National Conference on Challenges and Strategies to Improve Crop Productivity in Changing Environment. Organized by Department of Botany Zakir Husain Delhi College, University of Delhi.

NUMBER OF SEMINAR AND WORK SHOP PRESENTATIONS/ATTAINED:

- International: **05**; National: **04**; State level: **15**

MEMBERSHIPS OF LEARNED SOCIETIES

- Life member of Association of Microbiologists of India (AMI)

AWARDS

- Awarded West Bengal College Service Commission UGC-accredited 22nd State Eligibility Test (SET) on 10 July 2020.
- First prize Governor's Award on 24 September, 2015 for Best Research topic "Response of indigenously developed bacterial consortia in progressive degradation of polyvinyl chloride" at Raj Bhawan, Uttarakhand, Dehradun.
- Awarded Indian Council of Agricultural Research National Eligibility Examination (ICAR-NET)-2014.
- Awarded Indian Council of Agricultural Research-Senior Research Fellowship (ICAR-SRF)-2009 with fellowship for doctoral studies by ICAR, PUSA, New Delhi.
- GATE (Graduate Aptitude Test in Engineering)-2007.