CURRICULUM VITAE

DR. MD SHAHBAZ ANWAR

Date of Birth: 01-01-1981
E-mail ID: shahbazmicrogmail.com

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-H), Aligarh Muslim University(AMU), Aligarh, 2003

POSITIONS HELD/ HOLDING

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

TEACHING INTEREST

Environmental Biotechnology , Bioentrepreneurship and Biosafety, Introductory Microbiology, Environmental Biotechnology, Applied Microbiology, Immunology and Immunotechnology, Bioprocessing Engineering, Microbiology and Industrial application, General Microbiology, Micriological 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-BLASTetc.

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 soft ware. **Analytica Techniques**: Biodegradation Assays, UV-VIS Spectrophotometry, TLC, Paper choromatography, Gel Permission charomatography, 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: Biodergradation 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. **Anwar, M.S.,**
2. 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; doi:10.3390/su12135446.
3. Paliwal, A., Firdous, Nazia., 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 General and Applied Microbiology. *J. Gen. Appl. Microbiol*., **65**, 88–95.
4. **Anwar, M.S.,** Mona upadhyaye, Nazia Firdous, 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.
5. Paliwal, A., **Anwar, M.S.,** Firdous, N. **2016**. Analysis of Various PGP Activities of Psychrotrophic Bacteria WBT1, and Its Efficacy under Bioformulation. Journal of chemical engineering and chemistry research, 3 (11) 1050-1056.
6. Verma A, Singh H, **Anwar, M.S.,** Kumar S, Ansari MW, 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.
7. Verma, A., Singh H., **Anwar, M.S.,** Chattopadhyay, A.,Tiwari, K.K., Kaur, S., Dhilon, G.S. **2016**. Review article, Microbial keratinases: industrial enzymes with waste management potential. Critical reviews in biotechnology, 13: 1-16.
8. **Anwar, M.S.,** Kapri, A., Chaudhry, 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.
9. **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 plent growth promotion.Communicative and Integrative Biology. 7 (1): e27683(1-9).
10. 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. Journal of Applied and Natural Science. 6 (2): 473-479.
11. 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. African Journal of Microbiology Research. 8(27): 2565-2573.
12. **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. International Journal of Basic and Applied Agricultural Research.12(2): 214-260.
13. 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.

14. **Anwar, M.S.,** Negi, H., Zaidi, M.G.H, Gupta, S., Goel, R. **2013**. Biodeterioration studies of thermoplastics in nature using indigenous bacterial consortia. Brazilian Archieves of Biology and Technology, 56 (3):475-484.

15. **Anwar, M.S. 2012.** Isolation and Characterization of Phosphate Solubilizing Microorganism, Research Journal of Agricultural Sciences, 3(2): 336-340.

16. 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) P. 55–61.

Book Chapter and Monograph:

1. **Anwar MS. 2024**. Microbial consumption of Plastics: A Prospective Solution for Plastic Mitigation. Book; Advanced Strategies for biodegradation of Plastic Polymers, Springer, pg-303-335-89.

2. **Anwar MS. 2022**. Industrial applications of Bacterial enzymes. Book; Industrial applications of Microbial Enzymes, Taylor & Francis Group, CRC Press, pg-59-89
.
3. Paliwal A, Verma A, Pandey P, Firdous N, and **Anwar MS. 2020**. Plant growth promoting rhizobacteria (PGPR): An approach for sustainable agriculture; India 2020: environmental chalanges, policies and green technologies. pg-57-66**.**

4. **Anwar, M.S., 2012**. Plant Growth Promoting Microbe: A Functional Evaluation. LAP LAMBERT Academic Publishing ISBN-13: 978-3-659-25396-6, ISBN-10: 3659253960 EAN: 9783659253966, P. 1-66.

5. **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. Enriched Publications Pvt. Ltd. Scope of Phytochemically Unexplored Medicinal Plants.ISBN No. 978-1-63535-0135. Pp.61-71.
6. Bhardwaj, A., Devi, M., Ansar, M., Gupta , R., Nath, M., **Anwar, MS.,** 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.ISBN No. 978-1-63535-0135. Pp.181-185.

Proceeding Paper:

7. Paliwal, A., Singh, S., Firdous, N., **Anwar, M.S**. **2018.** Assessment of plant growth promoting aptitudes of bacterial strain HB_2 before and after bio-formulation. Proc. Of the International Conference Advancement in Technologies & its application in Current Era (ICATACE). Published by Institute of Research Engineers and Doctors, USA. Organized by B.T. Kumaun Institute of Technology, India. ISBN: 978-1-63248-152-8 DOI:15224/978-1-63248-152-8-04.

8. **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 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, Jawaharlal Nehru Marg.

9. **Anwar, M.S**., Bisht, K.S., Joshi, **N.,** Firdous' N., Verma, A., Pande, V. **2018.** Screening and characterization of plant growth promoting Rhizobacteria $_{H1}W_{N2}$ 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, Jawaharlal Nehru Marg.

NUMBER OF SEMINAR AND WORK SHOP PRESENTATIONS/ATTAINDED:

- International: **06**; National: **05**; State level: **15**

NUMBER OF STUDENTS GUIDED AS ADVISOR, RC AND OP ATTENED:

- **Refresher course:** From 17 March, **2023** to 30 march, **2023** organised by UGC-Human Resource development Centre, Madurai Kamaraj University, Madurai 625021, Tamil Nadu.
- **Orientation program:** From 10 December, 2020 to 08 January, 2021 organised by Teaching Learning centre, Ramanujan college, University of Delhi, under the aegis of Ministry of Education Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching.

- **M.Sc. 21**
- **B.Sc. 06**

NUMBER OF BACTERIA SUBMITTED IN INTERNATIONAL GENBANK, NCBI:

- Gram Positive: **06**
- Gram Negative: **05**

MEMBERSHIPS OF LEARNED SOCIETIES

LIFE TIME MEMBER OF ASSOCIATION OF MICROBIOLOGIST OF INDIA (AMI)

AWARDS

- **Awarded West Bengal College Service Commission UGC accredited 22nd State Eligibility Test (SET)** on 10 **July 2020**.
- **First prize Gonernor's Award** on 24th 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 Agriculral Research-Senior Research Fellowship (ICAR-SRF) -2009** with fellowship for doctoral studies by ICAR, PUSA, and New Delhi.
- **GATE (Graduate Aptitute Test in Engineering)-2007.**