Curriculum Vitae

Dr. Vinay Kumar
Address (Permanent): Jabbari Pur, Kaithwal,
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Educational Qualification

Babasaheb Bhimrao Ambedkar University, Lucknow India **Ph.D.**
Duration: October, 2017-March, 2021
Subject: Environmental Science
Field of study: Microbial Bioremediation
Thesis title: Remediation of Cr(VI) and Ni(II) contaminated water by Metal tolerant fungi isolated from Electroplating effluent
Supervisor: Prof. S. K. Dwivedi

Babasaheb Bhimrao Ambedkar University, Lucknow India **M.Sc.**
Duration: 2015-2017
Subject: Environmental Science
Dissertation thesis title- In vitro Evaluation of some chemicals and bioagents against Fusarium solani isolated from rhizospheric soil of Bajra crop

Dr. Ambedkar Government PG College, Unchahar India **B.Sc.**
Duration: 2012-2015
Subject: Botany, Chemistry and Zoology

Research Interest

As an environmental analytical chemist with focused training on environmental contamination problems, his research is centred on fate and impact of contaminants such as heavy metal, dyes, pesticide and micro/nano plastics generated from anthropogenic activities like industries and developmental processes and their management in sustainable way. He is particularly interested in finding potential microbes such as bacteria and fungi (for bioremediation) and developing sustainable material (biochar and nanomaterial) for remediation of contaminated soil and water systems. Mechanism oriented observation on removal of contaminants by microbes and sustainable synthesized material is the prime focus of his research. Microbial contamination and interaction investigation through metagenomic strategies is another aspect is in his interest. His research provides wide information on pollutant removal and stress management mechanisms of microbes that very helpful to

understand and develop microbial treatment system for remediation of contaminated systems/sites. An interest in "safer by use" approach for both microbes and sustainable material is revealed by working on the frontier of Environmental microbiology, Bioremediation and Sustainable Material Science to promote sustainability and environmental health and safety.

Teaching & Research Experience

- Six moth of M.Sc. dissertation experience (Title: In vitro Evaluation of some chemicals and bioagents against Fusarium solani isolated from rhizospheric soil of Bajra crop).
- Three and half year of Ph.D. research work (Title: Remediation of Cr(VI) and Ni(II) contaminated water by Metal tolerant fungi isolated from Electroplating wastewater).
- Assistant Professor of Environmental Science from September 2021 to January 2022 at Department of Environmental Science, Rama University, Kanpur, Uttar Pradesh.

Academic activities (Workshops/Conferences)

- Presented Poster entitled **"Nickel tolerant *Trichoderma* sp. isolated from Electroplating wastewater: Removal ability and mechanism"** in **"International Conference on Environmental Sustainability: Innovations, Traslations Dimensions and Way forward"** held on 11th to 12th February, 2020 at Department of Environmental Science, Babasaheb Bhmrao Ambedkar University, Lucknow.
- Attended one day work shop on "**Publication Ethics and Patenting"** organized by Department of Environmental Science, Babasaheb Bhimrao Ambedkar University, Lucknow at **10th of February, 2020**.
- Participated in three days Hands-on-Workshop on "**Molecular Characterization of Microorganism**" organized by **Division of Biotechnology, CytoGene Research and Development, Lucknow** during the period of **9th to 11th November, 2018**.
- Participated in two days Workshop on "**High Performance Liquid Chromatography (HPLC) & Its Application**" organized by **Division of Biotechnology, CytoGene Research and Development, Lucknow** during the period of **21st** to **22nd April, 2018**.
- Presented poster entitled **"Tolerance of a Filamentous fungus against some chemicals Isolated from Rhizospheric soil of Pearl Millet"** in **"Ist North Indian Science Congress"** healed on **January 10th-11th, 2018** at **Babasaheb Bhimrao Ambedkar University, Lucknow, Uttar Pradesh, India.**
- Participated in the Workshop on "**Socio-environmental Dimensions in the Rejuvenating River Gomati**" on 23rd April, 2018 organized by **Department of Environmental Science, Babasaheb Bhimrao Ambedkar University, Lucknow** in association with **Lokbharti**.
- Participated one week training program on "**Training Programme on Role of Remote Sensing & GIS in Natural Resources Management"** organized by

Remote Sensing Application Centre, Uttar Pradesh, Lucknow during the period of 14th march to 18th march, 2016.

- Attended **104th Indian Science Congress** held on 3 to 7 January, 2016 at University of Masore, Mysuru, Kolkata, India.

Awards, Certification & Key Skills

Certification

- 2018- Qualified ICAR- **National Eligibility Test (NET**) for Lectureship/Assistant Professor in Environmental Science
- 2017- Qualified UGC-**National Eligibility Test (NET)** for Lectureship/Assistant Professor in Environmental Science
- 2014-Qualified Course on Computer Concept (CCC) organized by National Institute of Electronics and Information Technology, Government of India

Awards

- ***International Distinguished Researcher*** in **Environmental Microbiology**, **Research Leadership Awards of the Year 2020** awarded by **RULA Awards** accredited by **World Research Council**, **United Medical Council** and **Internatinal Journal of Research Under Literal Access (IJRULA)**.
- ***Research Excellence Award*** in **Life Science** of the year 2021 by Vice Chancellor, **Babasaheb Bhimrao Ambekar University, Lucknow, India.**

Technical Skills

- Report preparation, Scientific writing for peer reviewed Journals
- Working experience on Microscope, High Performance Liquid Chromatography (HPLC), Atomic Absorption Spectrophotometer (AAS), UV-vis. spectrophotometer, Scanning Electron Microscope (SEM) and Fourier transform infrared (FTIR) spectroscopy
- Skilled in interpretation of the data of Gas Chromatography Mass Spectroscopy (GCMS), Transmission Electron Microscope (TEM), X-ray Photoelectron Spectroscopy (XPS), X-ray Diffraction (XRD)
- DNA isolation, purification, PCR and molecular characterization of microorganism using 16S & ITS region sequencing
- Expertise in isolation, characterization, handling of microbial culture (Bacteria and Fungi) and rhizospheric microbes
- Phytobial and microbial remediation
- Ecotoxicological analysis of polluted water and soil
- Physicochemical Characterization of contaminated soil, water, wastewater
- Working experience with MS Office (6 yrs), SPSS (version 20.0; 3 yrs), MEGAX (2 yrs), Origin (1 yrs)
- Synthesis and Characterization biologically synthesized nanoparticle

Personal Skills

- Good Interpersonal skill
- Reliable and Punctual

- Communication skills
- Give Full Commitment to Work
- Willingness to learn a new skill
- Flexibility, problem solving abilities

Research Publication

Journal Articles:

1. **Kumar, V.,** Dwivedi, S. K., & Oh, S. (2022). A review on Microbial-integrated techniques as promising Cleaner option for removal of chromium, cadmium and lead from Industrial wastewater. *Journal of Water Process Engineering,* 102727. (**IF 5.48)** (In press)
2. **Kumar, V.,** Dwivedi, S. K., & Oh, S. (2022). A critical review on lead removal from industrial wastewater: Recent advances and future outlook. *Journal of Water Process Engineering*, *45*, 102518. **(IF 5.48)**
3. **Kumar V.** and Dwivedi S. K. (2021). Toxicity potential of Electroplating wastewater and its Bioremediation Approaches: A review. Environmental Technology Review, 10(1): 238-254. https://doi.org/10.1080/21622515.2021.1983030.
4. **Kumar V.,** Sungh G., & Dwivedi S.K. (2021). Arsenic and Nickel stress response, their bioremediation potential and mechanism of *Trichoderma lixii* isolated from Electroplating wastewater. Geomicrobiology Journal, 1956648. DOI:10.1080/01490451.2021.1956648. **(IF 2.30)**
5. Singh, G., **Kumar, V.**, & Dwivedi, S. K. (2021). Comparative Investigation of Congo Red and Direct Blue-1 Adsorption on Mycosynthesized Iron Nanoparticle. *Journal of Cluster Science*, 1-17. **(IF 3.06)**
6. **Kumar**, **V.,** & Dwivedi, S. K. (2021). A review on accessible techniques for removal of hexavalent Chromium and divalent Nickel from industrial wastewater: Recent research and future outlook. *Journal of Cleaner Production*, 295, 126229. https://doi.org/10.1016/j.jclepro.2021.126229 **(IF 9.29)**
7. Abhay Rawat, **Vinay Kumar**, Pratibha Singh, Amritesh Shukla & D. P. Singh (2021). Kinetic behavior and mechanism of arsenate adsorption by loam and sandy loam soil. *Soil and Sediment Contamination: An International Journal*. Article ID: 1900071, DOI:10.1080/15320383.2021.1900071. **(IF 2.061)**
8. **Kumar**, **V.,** & Dwivedi, S. K. (2021). Mycoremediation of heavy metals: processes, mechanisms, and affecting factors. *Environmental Science and Pollution Research*, 28:10375–10412. **(IF 4.22)**
9. **Kumar, V.,** & Dwivedi, S. K. (2021). Bioremediation mechanism and potential of copper by actively growing fungus *Trichoderma lixii* CR700 isolated from electroplating wastewater. *Journal of Environmental Management*, *277*, 111370. **(IF 6.78)**

10. **Kumar, V.,** & Dwivedi, S. K. (2020). Multimetal tolerant fungus *Aspergillus flavus* CR500 with remarkable stress response, Simultaneous multiple metal/loid removal ability and bioremediation potential of wastewater. *Environmental Technology and Innovation*. 101075. **(IF 5.26)**
11. Rawat, A. P., **Kumar, V.**, & Singh, D. P. (2020). A combined effect of adsorption and reduction potential of biochar derived from Mentha plant waste on removal of methylene blue dye from aqueous solution. *Separation Science and Technology*, *55*(5), 907-921. **(IF 2.47)**
12. **Kumar, V.,** & Dwivedi, S. K. (2019). Hexavalent chromium stress response, reduction capability and bioremediation potential of *Trichoderma* sp. isolated from electroplating wastewater. *Ecotoxicology and Environmental Safety*, *185*, 109734. **(IF 6.29)**
13. **Kumar, V.**, & Dwivedi, S. K. (2019). Hexavalent chromium reduction ability and bioremediation potential of *Aspergillus flavus* CR500 isolated from electroplating wastewater. *Chemosphere*, *237*, 124567. **(IF 7.08)**
14. Kanaujiya, D., **Kumar, V.**, Dwivedi, S. K., & Prasad, G. Photobiosynthesis of Silver Nanoparticle Using Extract of *Aspergillus flavus* CR500: Its Characterization, Antifungal Activity and Mechanism Against *Sclerotium rolfsii* and *Rhizoctonia solani*. *Journal of Cluster Science*, **31**, 1041–1050. **(IF 3.06)**
15. **Kumar, V.**, Singh, S., Singh, G., & Dwivedi, S. K. (2019). Exploring the Cadmium Tolerance and Removal Capability of a Filamentous Fungus *Fusarium solani*. *Geomicrobiology Journal*, 36(9), 782-791. **(IF 2.30)**
16. Prasad, G., **Kumar, V.**, & Dwivedi, S. K. (2018). Antifungal activity of some selected medicinal plants against *Fusarium solani* causing wilt and rot in Pearl millet. *AJBS*, *13*(1), 21-27.

Book Chapter:

1. **Kumar V.**, Singh G., Dwivedi S.K. (2022) Dye Degradation by Fungi. In: Muthu S.S., Khadir A. (eds) Dye Biodegradation, Mechanisms and Techniques. Sustainable Textiles: Production, Processing, Manufacturing & Chemistry. Springer, Singapore. https://doi.org/10.1007/978-981-16-5932-45
2. Garima Singh, **Vinay Kumar,** S. K. Dwivedi, A. K. Chaudhari (2021), Plant-Microbes Interaction: An Unlocking Potential for Sustainable Plant Growth and Phytoremediation In: Tripti Agarwal, (eds) Microbes and Agro-Ecosystem. p. 31-49.

Peer Reviewer

1. Bioremediation Journal (Taylor and Francis)
2. SN Applied Sciences (SpringerNature)
3. Journal of King Saud University – Science (Elsevier)
4. Chemosphere (Elsevier)

Submitted Gene Sequence to GenBank, NCBI

1. *Aspergillus flavus* CR500 (Accession number: MK450338.1)
2. *Trichderma lixii* CR700 (Accession number: MK453372.1)

Referees Detail

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