

Curriculum Vitae – Dr. Abhay Bajaj

Title

Senior Scientist
CSIR-National Environmental Engineering
Research Institute (CSIR-NEERI), Nagpur
Maharashtra, India

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Web Links:

[GoogleScholar](#)
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Work Experience

2019- present Senior Scientist

CSIR-National Environmental Engineering Research Institute (CSIR-NEERI),
Nagpur, Maharashtra, India

2018- 2019 Scientist B

National Centre for Microbial Resource, National Centre for Cell Science, Pune,
Maharashtra, India

2015-2018 UGC's Dr. D.S. Kothari Post-Doctoral Fellow

Molecular Biology Laboratory, Department of Zoology,
University of Delhi, Delhi, India

2015 Fellow

Human Health, Value Addition and Research Division,
National Innovation Foundation, Ahmedabad, Gujarat, India

2011-2014 CSIR-Senior Research Fellow

Environmental Biotechnology Division,
CSIR-Indian Institute of Toxicology Research, Lucknow, Uttar Pradesh, India

Education (*baccalaureate training to postdoctoral training*)

Institution and Location	Degree	Year (S)	Field Of Study
Bundelkhand University, Jhansi, Uttar Pradesh, India	B.Sc.	2005	Industrial Microbiology
School of Life Sciences, Devi Ahilya University, Indore, Madhya Pradesh, India	M.Sc.	2007	Life Science
Academy of Scientific & Innovative Research-Indian Institute of Toxicology Research, Lucknow, India	Ph.D.	2014	Environmental Biotechnology and Genomics*
Molecular Biology Laboratory, Department of Zoology, University of Delhi, Delhi, India	UGC's Dr. D.S. Kothari Post Doc Fellow	2015-2018	Environmental Biotechnology and Genomics

***Thesis:** “Custom oligonucleotide array based profiling of catabolic genes and microbial communities involved in biodegradation of organic pollutants”

Research Support

University Grant Commission- Dr. D. S. Kothari Postdoctoral Research Fellowship, 2015

Title: “Understanding the ecology and evolution of bacterial functional genes in stressed environment by employing omics approach”

Mentor: Prof. Rup Lal, FNA, FNASc, FNAAS, University of Delhi

Publications (Peer Reviewed)

1. L Wu, Y Liu, X Liu, **A Bajaj**, M Sharma, R Lal, HH Richnow Isotope fractionation approach to characterize the reactive transport processes governing the fate of hexachlorocyclohexanes at a contaminated site in India. *Environment international* **2019** 132, 105036
2. Raj Kumar Regar, Vivek Kumar Gaur, **Abhay Bajaj**, Subodh Tambat and Natesan Manickam. Comparative microbiome analysis of two different long-term pesticide contaminated soils revealed the anthropogenic influence on functional potential of microbial communities. *Science of Total Environment* **2019** 681, 413-423
3. U Sood, P Hira, R Kumar, **A Bajaj**, DLN Rao, R Lal, M Shakarad. Comparative genomic analyses reveal core-genome-wide genes under positive selection and major regulatory hubs in outlier strains of *Pseudomonas aeruginosa*. *Frontiers in Microbiology* **2019**, 10:53
4. Vivek K Gaur, **Abhay Bajaj**, Raj K Regar, Mohan Kamthan, Rakesh R Jha, Janmejai K Srivastava, Natesan Manickam. Rhamnolipid from a *Lysinibacillus sphaericus* strain IITR51 and its potential application for dissolution of hydrophobic pesticides. *Bioresource Technology* **2019** 272: 19-25
5. Utkarsh Sood, **Abhay Bajaj**, Roshan Kumar, Sachin Khurana, Vipin Chandra Kalia Infection and Microbiome: Impact of Tuberculosis on Human Gut Microbiome of Indian Cohort. *Indian J Microbiol* **2018** 58(1):123–125
6. Nitish Mahato et al. Taxo-Genomics: A New Era of Polyphasic Approach and Beyond. *Antonie van Leeuwenhoek* **2017** 110:1357–1371
7. Helianthous Verma, **Abhay Bajaj**, Roshan Kumar, Jasvinder Kaur, Shailly Anand, Namita Nayyar, Akshita Puri, Yogendra Singh and Rup Lal. Genome Organization of *Sphingobium indicum* B90A: An Archetypal Hexachlorocyclohexane (HCH) Degrading Genotype. *Genome Biology Evolution* **2017**, 9(9): 2191–2197
8. Roshan Kumar, Helianthous Verma, Shazia Haider, **Abhay Bajaj**, Utkarsh Sood, Kalaiarasan Ponnam, Shekhar Nagar, Mallikarjun N. Shakarad, Ramkrishnan Negi, Yogendra Singh, J.P. Khurana, Jack A. Gilbert, Rup Lal. Comparative genomic analysis reveals habitat-specific genes and regulatory hubs within the genus *Novosphingobium*. *mSystems*, **2017**, 2 (3) e00020-17
9. Smita Kumari, Raj Kumar Regar, **Abhay Bajaj**, Ratansekhar Ch, Gubbala Naga Venkata Satyanarayana, Mohan Krishna Reddy Mudiam and Natesan Manickam. Isolation and characterization of *Stenotrophomonas* sp. strain IITR87 that degrades high molecular weight polycyclic aromatic hydrocarbons and identification of genes involved in pyrene metabolism. *Indian Journal of Microbiology*, **2017**;57(1):60-67
10. **Abhay Bajaj**, Anand Kumar*, Shivani Yadav, Gurwinder Kaur, Nitin Kumar Singh, Rajendran Mathan Kumar², Natesan Manickam and Shanmugam Mayilraj Isolation and characterization of a novel Gram-negative bacterium *Chromobacterium soli* sp. nov., strain IITR-71^T degrading 1-Chlorobutane, 1-Chloropropane and 1,2-Dichloroethane. *International Journal of Systematic and Evolutionary Microbiology*, **2016**; 66: 5228-5235*equal contribution
11. Anand Kumar^{2*}, **Abhay Bajaj**^{1*}, Monu Bala², Rajendran Mathan Kumar², Gurwinder Kaur², Navjot Kaur², Nitin Kumar Singh², Natesan Manickam^{1†}, and Shanmugam Mayilraj^{2†}.

Taxonomic description and Genome sequence of *Rheinheimeramesophilum* sp. nov., strain IITR-13^T isolated from an industrial waste site. **International Journal of Systematic and Evolutionary Microbiology** 2015, 65, 3666-3673 *equal contribution

12. **Abhay Bajaj**, Shanmugam Mayilraj, Mohankrishna R. Mudiam, Devendra K Patel and Natesan Manickam. Isolation and functional analysis of a glycolipid producing *Rhodococcus* sp. strain IITR03 with potential for degradation of 1,1,1-trichloro-2,2-bis (4-chlorophenyl) ethane (DDT). **Bioresource Technology**, 2014, Volume 167: 398-406
13. Natesan Manickam, Nitin Kumar Singh, **Abhay Bajaj**, Navjot Kaur, Gurwinder Kaur and Shanmugam Mayilraj *Bacillus mesophilum* sp. nov., isolated from a pesticide contaminated soil. **Archives of Microbiology**, 2014, Volume 196, 7: 517-523
14. Natesan Manickam, **Abhay Bajaj**, Harvinder S. Saini, Rishi Shanker. Surfactant mediated enhanced biodegradation of hexachlorocyclohexane (HCH) isomers by *Sphingomonas* sp. NM05. **Biodegradation**, 2012, Volume 23, 5: 673-682
15. **Abhay Bajaj**, Ashutosh Pathak, Mohan Krishna Mudiam, Shanmugam Mayilraj, Natesan Manickam. Isolation and characterization of a *Pseudomonas* sp. strain IITR01 capable of degrading α -endosulfan and endosulfan sulfate. **Journal of Applied Microbiology**, 2010, Volume 109: 2135-2143

Book chapter

1. Surya Prakash and **Abhay Bajaj** (2017) Process for Biotransformation of Androsta-4-ene-3, 17-Dione (4-AD) to Androsta-1,4-Diene-3,17-Dione (ADD) in José-Luis Barredo, Ignacio Herráiz (eds.), Microbial Steroids: Methods and Protocols, Methods in Molecular Biology pp 227-238 vol. 1645, DOI 10.1007/978-1-4939-7183-1_16

Reviewer

- PLoSone
- mSystems, ASM press
- Bioresource Technology, Elsevier
- Annals of Microbiology, Springer
- Indian Journal of Microbiology, Springer

Professional Membership

- Life Member of Biotech Research Society of India (BRSI), India.
- Life member of Indian Network for Soil Contamination Research (INSCR)
- Annual Member of BISMIS (2016-2018)

Public Database Submissions (Genbank/ GEO/ Bioproject/ WGS/ SRA/Nucleotide)

Microarray Gene Expression Omnibus (GEO): 17

Next Generation Sequencing data (NCBI)

Bioproject: 04, BiosampleAccession: 03, SRA submission: 03, WGS: 05

Phylogenetic and Functional Gene Sequences (NCBI Genbank) (Bacteria): 51

Pesticide Degrading: 03, Phthalates Degrading: 07, Biosurfactant Producing: 04, Pigment Producing: 07, Metagenomic Diversity: 24, Functional Genes: 06

Workshop/Conference

Organized:	08
Oral Presentations/ Lecture:	08
Conference Abstracts and Presentations:	17