

**Dr. Bulbul Gupta**

Research Associate-I

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**Field of Specialization:** Environmental Microbiology (Specific areas: Isolation and identification of novel microorganisms, enzymes, biosurfactants and metabolites; Biodegradation of Toxic Contaminants; Wastewater Treatment; Bioreactors; Process Optimization; Solvent Extractions).

**15/09/2020-15/12/2020:** Worked as Research Fellow in project “Mobilizing Community for Clean Air.....Capacity Building”, under National Clean Air Programme of GoI, at Department of Environment Studies, Panjab University, Chandigarh.

**01/08/2019 – 31/07/2020:** Worked as Senior Research Fellow at Jawaharlal Nehru University, New Delhi (India). Worked on: Treatment of industrial effluents using microorganisms, biosorbents and enzymes; Biochar production with modifications; Biofuel production; Life Cycle Assessment, and Reactor designing.

**Teaching experience: 02/2018 - 04/2019 (Three semesters in continuation)**

Worked as an Assistant professor (Visiting Faculty) at Department of Biotechnology, DCRUST, NAAC accredited, Haryana State Government University, Murthal, (Sonapat), India.

**Academic Record**

Degree	Institute / University / Board	Year of Passing	Percentage (Division)
Ph.D. (Biotechnology Engineering)	University Institute of Engineering and Technology, Panjab University, Chandigarh, India.	2018	---
M.Tech. (Environmental Sciences and Technology)	Thapar Institute of Engineering and Technology, Patiala, (Punjab), India.	2012	9.86/10 (CGPA) (FIRST)
B.E. with Honors (Biotechnology)	University Institute of Engineering and Technology, Panjab University, Chandigarh, India.	2010	71.5 (FIRST)
10 <sup>th</sup> +2 (Non-Medical)	C.B.S.E	2006	81.4 (FIRST)
10 <sup>th</sup>	C.B.S.E	2004	87.8 (FIRST)

**Certificate courses**

Course	Organization	Percentage
Remote Sensing and Digital Image Processing of Satellite Data	MHRD, Govt. of India	81
Non-Conventional Energy Resources	MHRD, Govt. of India	80
Geoenvironmental Engineering	MHRD, Govt. of India	60

### Patent: (01) (Published)

Patent Application No.	201911033872
Date of filing	22.08.2019
Publication date	26.02.2021
Title	PROCESS FOR PREPARATION OF ACCLIMATIZED STRAIN OF ACINETOBACTER BAUMANNII, FOR DEGRADATION OF POLYAROMATIC HYDROCARBONS
Inventors	GUPTA, Bulbul , PURI, Sanjeev , KAUR, Jaspreet

### Publications:

#### A) International & National Research Papers: (09)

- [1] **Gupta, B**, Puri, S, Thakur, I.S, Kaur, J. (2020) "Enhanced pyrene degradation by a biosurfactant producing *Acinetobacter baumannii* BJ5: Growth kinetics, toxicity and substrate inhibition studies". *Environmental Technology and Innovation*. <https://doi.org/10.1016/j.eti.2020.100804>
- [2] **Gupta, B**, Mishra, A, Singh, R, Thakur, I.S. (2020) "Fabrication of calcite based biocomposites for catalytic removal of heavy metals from electroplating industrial effluent". *Environmental Technology and Innovation*. <https://doi.org/10.1016/j.eti.2020.101278>
- [3] Mishra, A, **Gupta, B**, Kumar, N, Singh, R, Verma, A, Thakur, I.S. (2020) "Synthesis of catalytic calcite-based bio-composite material on biochar for enhanced biosorption and detoxification of chromium VI by *Zhihengliuella* sp. ISTPL4: Process optimization for sequential and simultaneous recovery from wastewater". *Bioresource Technology*. 307-123262. <https://doi.org/10.1016/j.biortech.2020.123262>
- [4] Tyagi, B, **Gupta, B**, Thakur, I.S. (2020) "Biosorption of Cr(VI) from aqueous solution by extracellular polymeric substances (EPS) produced by *Parapedobacter* sp. ISTM3 strain isolated from Mawsmi cave, Meghalaya, India". *Environmental Research*. 110064. <https://doi.org/10.1016/j.envres.2020.110064>
- [5] **Gupta, B**, Puri, S, Thakur, I.S, Kaur, J. (2020) "Comparative evaluation of growth kinetics for pyrene degradation by *Acinetobacter pittii* NFL and *Enterobacter cloacae* BT in the presence of biosurfactant". *Bioresource Technology Reports*. 9- 100369. <https://doi.org/10.1016/j.biteb.2019.100369>
- [6] Kaur, B, **Gupta, B**, Kaur, J. (2020) "Augmentation of degradation prospects of dioxygenases from the crude extract of an efficient bacterial strain, using pyrene as sole carbon source". *Materials Today: Proceedings*. 28:1690-1694. <https://doi.org/10.1016/j.matpr.2020.05.129>
- [7] **Gupta, B**, Puri, S, Kaur, J. (2020) "Sources, Levels and Carcinogenic Potential of Polyaromatic Hydrocarbons in the Environment: A Short Review". *Research & Reviews: A Journal of Life Sciences*. 10(1): 5-11.
- [8] **Gupta, B**, Bharti, V, Kaur, J. (2019) "Novel bacterial strains *Pseudomonas* sp. and *Bacillus* sp. isolated from petroleum oil contaminated soils for degradation of flourene and phenanthrene". *Pollution*. 5(3): 657-669. DOI: [10.22059/POLL.2019.274084.571](https://doi.org/10.22059/POLL.2019.274084.571)
- [9] **Gupta, B** and Kaur, J. (2016) "Computational analysis of conserved coil functional residues in the mitochondrial genomic sequences of dermatophytes". *Bioinformatics*. 12(3): 197-201. DOI: [10.6026/97320630012197](https://doi.org/10.6026/97320630012197)

## **B) Book Chapters: (03)**

- [1] **Bulbul Gupta**, Gurpreet Saggu, Smita Sundaram, Ruby Mishra, Indu Shekhar Thakur. (2020) "Climate change impacts on soil microorganisms that regulate nutrient transformations". Climate change and the Microbiome: Sustenance of the Ecosphere, Submitted to Springer.
- [2] **Bulbul Gupta**, Jaspreet Kaur, Kunal and Anita Rajor. (2018) "Isolation, characterisation of novel Pseudomonas and Enterobacter sp. from contaminated soil of Chandigarh for naphthalene degradation". Utilization and Management of Bioresources, Springer Nature Singapore Pte Ltd. 2018, S. K. Ghosh (ed.), ISBN: 978-981-10-5349-8\_17.
- [3] **Bulbul Gupta**, Sanjeev Puri, Jaspreet Kaur. (2019) "Screening and characterization of pyrene-degrading bacterium from oil-contaminated sites around Chandigarh". Waste Management and Resource Efficiency, Springer Nature Singapore Pte Ltd. 2019, S. K. Ghosh (ed.), ISBN: 978-981-10-7289-5.

## **Awards, Honors and Fellowships: (12)**

- Qualified national examination (CBSE-UGC NET – 2018) in Environmental Sciences.

## **Fellowships: (04)**

- [1] In 2019, awarded 'Senior Research Fellowship' from Department of Biotechnology, Govt. of India, in the project entitled "Production of biofuel by carbon dioxide concentrating bacterium: A pilot scale demonstration" at Jawaharlal Nehru University, New Delhi, India.
- [2] In 2017, awarded "Jawaharlal Nehru Scholarship for Doctoral Studies" by Jawaharlal Nehru Memorial Fund, New Delhi, India, from January' 2017 to June' 2019.
- [3] Secured 1st position in Panjab University PhD Entrance Examination and awarded 'Senior Research fellowship' from Technical Education Quality Improvement Programme – II of 'The Ministry of Human Resource Development, Govt. of India', from April' 2013 to June' 2016.
- [4] Awarded scholarship and Teaching Assistantship at Thapar Institute of Engineering and Technology, Patiala, Punjab, India, during 2011-2012 session for standing first among 23 students in the first year of the programme.

## **Awards: (07)**

- [1] Awarded first prize in an oral presentation at Global Congress on Biotechnology, Nanotechnology, Energy and Environment (GCBNE-2018), held at DCRUST, Murthal, (Sonapat), Haryana, India (25-26<sup>th</sup> April 2018).
- [2] Excellent Research Paper Award on 'Screening and characterization of pyrene degrading bacterium from oil contaminated sites around Chandigarh' at 6<sup>th</sup> International Conference on Solid Waste Management, Jadavpur University, Kolkata, West Bengal, India (24-26<sup>th</sup> November'16).
- [3] Delivered lecture at Golden Jubilee Celebrations CME on 'Advances in Clinical Biochemistry' in Department of Biochemistry, PGIMER, Chandigarh, India (15<sup>th</sup> March 2013).
- [4] First position in PhD Entrance Test in Biotechnology Engineering-2010 conducted by Panjab University, Chandigarh, India.
- [5] Topped in school in 10<sup>th</sup> standard examination conducted by CBSE, New Delhi, India.
- [6] Stood first in State Science Exhibition, organised by State Institute of Education, Education Department, Chandigarh, 2003.

[7] Stood first in State Science Exhibition, organised by State Institute of Education, Education Department, Chandigarh, 2002.

### **Technical Skills/Software's**

**Hands on experience on the following:** [1] ICP-MS, [2] Bioreactor, [3] GC-MS, [4] HPTLC, [5] HPLC, [6] LC-MS, [7] FE-SEM, [8] SDS-PAGE, [9] 2D- Gel electrophoresis, [10] FTIR, [11] Light Microscopy, [12] DNA/RNA isolation, [13] Fluorescent Microscopy, [14] PCR, [15] ELISA, [16] NMR and [17] EDX.

**Bioinformatics software's/tools:** [1] Alignment tools (BLAST, FASTA & Clustal W), [2] Modeller 9v7, [3] Mega 6, [4] DNA star, [5] Ligplot, [6] Whole Genome Sequencing and [7] Web based tools for primer designing.

**Statistical software's:** [1] Design Expert, [2] Minitab and [3] GraphPad Prism.