CURRICULUM VITAE

Rupak Kumar Sarma, Ph.D.
Assistant Professor
Department of Botany
Nalbari College
Nalbari, Assam - 781335
E. mail: rsarmaonline@gmail.com
Phone: (+91) 94011-82318

Education

- **Ph.D., Biotechnology**, 2014, CSIR-NEIST (under Gauhati University), Jorhat, India.
- **M.Sc., Botany (Microbiology)**, 2008, Gauhati University, Guwahati, India.
- **B.Sc. Botany,** 2006.

Merits/awards/fellowships

- Invited as a session speaker at the 5th Asian PGPR international conference for sustainable agriculture, Bogor, Indonesia held on July 16-19, 2017.
- Science and Engineering Research Board (DST, Govt. India) travel grant support to attend and deliver invited talk at 4th Asian PGPR conference, held on 3-6 May, 2015 at Hanoi, Vietnam.
- Science and Engineering Research Board (DST, Govt. India) Young Scientist research grant for independent research in environmental microbiology and Eco-restoration.
- Dr. Harekrishna Goswami memorial award for securing the highest marks among the candidates appearing from Nalbari college in the B.Sc. final examination of Gauhati University in the year 2006.

Teaching Experience

18/02/2021-06/12/2021 Assistant Professor, Department of Botany, Sadiya College, Sadiya, Assam.

07/12/2021-13/10/2023 Assistant Professor, Department of Botany, SBMS College, Sualkuchi, Assam.

14/10/2023-till date Assistant Professor, Department of Botany, Nalbari College, Nalbari, Assam.

Postdoctoral research

22/12/2015-18/03/2019 DST (Govt. India) Young Scientist Biological Science and Technology Division, CSIR-NEIST, Jorhat, India.

23/07/2014 - 30/11/2015 Research Associate, Life Science Division, Institute of Advanced Study in Science and Technology, Guwahati, India (An autonomous institute under Department of Science and Technology, Govt. India.

Doctoral and project research experience

13/06/2012-19/07/2014 Junior Research Fellow, Department of Agricultural Biotechnology, Assam Agricultural University, Jorhat, India.

29/05/2009-31/03/2012 Project Assistant, Biotechnology group, BSTD, CSIR-NEIST, Jorhat, India

19/11/ 2008-19/05/2009 Project Assistant, Life Science Division, Institute of Advanced Study in Science and Technology, Guwahati, India.

Project handled as principal investigator

1. **Project title:** Linking plant-microbe interactions in sediment denitrification functions in eutrophic urban wetland ecosystem.

   Funding agency: SERB (DST), Govt. India.

   Total project cost: 38.6 Lakhs (INR)

2. **Project title:** Development of autologous endophytic bacterial consortium to enhance seed germination and plant growth promotion of 'Kopou Phul' (*Rynchostylis retusa*), the state flower of Assam.

   Funding agency: DBT Advanced level State Biotech Hub (ALSBT Hub), College of Veterinary Science, Khanapara, Guwahati, Assam.

   Total project cost: 7.15 Lakhs (INR)

Technology

Developed CSIR (Govt. India) Technology, "OP-12 Bio-fertilizer mediated Plant Health Improvement in Normal and Water Deficit Condition".

Publications

Total numbers of publications in National and international journals	**: 17**
Communicated & under review	**: 3**
Cumulative impact factor	**: 47.947**
Total citation	**: 1753**
h-index	**: 12**

Complete List of Publication

1. **Sarma RK**, Gohain A, Ahmed TH, Yadav A, Saikia R (2023) An environment-benign approach of bamboo pulp bleaching using extracellular xylanase of strain *Bacillus stratosphericus* EB-11 isolated from elephant dung. ***Folia Microbiologica*** doi.org/10.1007/s12223-022-01003-1.
2. Gohain A, **Sarma RK***, Debnath R, Saikia J, Singh BP, Sarmah R, Saikia R (2019) Phylogenetic affiliation and antimicrobial effects of endophytic actinobacteria associated with medicinal plants: prevalence of polyketide synthase type II in antimicrobial strains. ***Folia Microbiologica*** 64(4):481-496.
3. Saikia J*, **Sarma RK***, Dhandia R, Yadav A, Bharali R, Gupta VK, Saikia R (2018) Alleviation of drought stress in pulse crops with ACC deaminase producing rhizobacteria isolated from acidic soil of Northeast India. ***Scientific Reports,*** *8:3560* | DOI:10.1038/s41598-018-21921-w. (*contributed equally to the manuscript).
4. Gohain A, Das R, **Sarma RK**, Pegu D, Saikia J, Yadav Y, Singh BP, Sarmah R, Saikia R (2018) Bio-Computational Analysis of Polyketide Synthase Type II Gene from *Endophytic Streptomyces mutabilis* Strain EAAG65 Associated with Roots of *Emblica officinalis*. *BAOJ Bioinfo* 2017 1: 2 1: 007.
5. Passari AK, Mishra VK, Singh G, Singh P, Kumar B, Gupta VK, **Sarma RK**, Saikia R, Donovan AO, Singh BP (2017) Insights into the functionality of endophytic actinobacteria with a focus on their biosynthetic potential and secondary metabolites production. ***Scientific Reports****,* 7: *11809* | DOI:10.1038/s41598-017-12235-4.
6. Sarma RK, Gogoi A, Dehury B, Debnath R, Bora TC, Saikia R (2014) Community profiling of culturable fluorescent pseudomonads in the rhizosphere of green gram (Vigna radiata L.) PLoS ONE 9(10): e108378. doi:10.1371/journal.pone.0108378**.**
7. **Sarma RK**, Saikia R (2014). Alleviation of drought stress effects in mung bean plant by stress tolerant strain *Pseudomonas aeruginosa* GGRJ21. ***Plant and Soil,*** **377***:111–126*.
8. Hussain N, Gogoi A, **Sarma RK**, Sharma P, Barras A, Boukherroub R, Saikia R, Sengupta P, Das MR (2014) Reduced Graphene Oxide Nanosheets Decorated with Au Nanoparticles as an Effective Bactericide: Investigation of Biocompatibility and Leakage of Sugars and Proteins. ***ChemPlusChem***, **79**:1774-1784.

9. Fellahi O, **Sarma RK**, Das MR., Saikia R, Marcon L, Coffinier Y, Hadjersi T, Maamache M, Boukherroub R (2013) Antimicrobial effect of silicon nanowires decorated with silver and copper nanoparticles. ***Nanotechnology***, **24-**495101. doi:10.1088/0957-4484/24/49/495101.
10. Debnath R, Saikia R, **Sarma RK**, Yadav A, Bora TC, Handique PJ (2013) Psychrotolerant antifungal *Streptomyces* isolated from Tawang, India and the shift in chitinase gene family. ***Extremophiles*, 17**:1045-1059.
11. Das MR., **Sarma RK**, Borah SC, Kumari R, Saikia R, Deshmukh AB., Shelke MV, Sengupta P, Szunerits S, Boukherroub R (2013) The synthesis of citrate-modified silver nanoparticles in an aqueous suspension of graphene oxide nanosheets and their antibacterial activity. ***Colloids and surfaces B: Biointerfaces***, **105**:128-136.
12. Kakati D, **Sarma RK**, Saikia R, Sarma JC, Baruah NC (2013) Rapid microwave assisted synthesis andantimicrobial bioevaluation of novel steroidal chalcones. ***Steroids,*** **78**: 321– 326.
13. **Sarma RK**, Debnath R, Saikia R, Handique PJ, Bora TC (2012) Phylogenetic analysis of alkaline proteinase producing fluorescent pseudomonads associated with green gram (*Vigna radiata* L.) rhizosphere. ***Folia Microbiologica,*** **57**:129–137.
14. Saikia R, **Sarma RK**, Yadav A, Bora TC (2011) Genetic and functional diversity among the antagonistic potential fluorescent pseudomonads isolated from tea rhizosphere. ***Current Microbiology***, **62**: 434-444.
15. Das MR, **Sarma RK**, Saikia R, Kale VS, Shelke MV, Sengupta P (2011) Synthesis of silver nanoparticles in an aqueous suspension of graphene oxide sheets and its antimicrobial activity. ***Colloids and surfaces B: Biointerfaces***, **83**: 16-22.
16. Saikia R, Gogoi DK, Mazumder S, Yadav A, **Sarma RK**, Bora TC, Gogoi BK (2011) Brevibacillus laterosporus strain BPM3, a potential biocontrol agent isolated from a natural hot water spring of Assam, India. ***Microbiological Research***, **16**: 216-225.
17. Saikia R, **Sarma RK**, Debnath R, Bora TC (2011) Trends in Bacterial Diversity Study and its Prospects. ***Science and Culture***, **77**:451-455.

Peer-reviewed conference proceedings

- Debnath R, sarma RK, Saikia R, Bora TC (2011) Microbial Diversity and Bioprospecting. In: Medicinal plant and microbe and their pharmaceuticals, Department of Molecular Biology and Biotechnology, Tezpur University, Tezpur, Assam, India. Pp27-32.

Book chapter

1) **Sarma RK**, Chaudhury K (2022) Microbial Prospects in Sediment Denitrification of Eutrophic Wetland Ecosystem. In: Core Microbiome: Improving crop quality and productivity, Parray et al. (eds), John Wiley and Sons. Pp 183-189.
2) **Sarma RK**, Saikia R, Talukdar NC (2017) Mitochondrial DNA Based Molecular Markers in Arbuscular Mycorrhizal Fungi (AMF) Research. In: Molecular Markers and Mycology, Singh BP, Gupta VK (eds), Springer, pp 243-250.
3) **Sarma RK,** Debnath R, Yadav A, Handique PJ, Baruah AR, Saikia R (2014) Rhizosphere engineering of crop plants by bacterial ACC-deaminase under water stress. In: *Trends in Soil Microbial Ecology. Singh*, D.P., Singh, H.B. (eds). Studium Press LLC, USA. pp 352-365.
4) Debnath R, **Sarma RK**, Saikia R, Yadav A, Bora TC (2013) Metagenomics: A Hunting Expedition in Microbial Diversity. In: *Molecular Biology of Bacteria*. Gaur, R.K., Gautam, H.K. (eds). Nova Science Publishers, Inc, USA. pp 19-30.

Presentations in national/international conferences

1. **Sarma R.K**., Saikia R. (2018) Effect of Macrophyte Populations on Coupled Nitrification and Denitrification Function in Eutrophic Urban Wetland Ecosystem. International Conference on Biotechnology and Environmental Science, New Delhi.
2. **Sarma R.K.,** Saikia R. (2018) Selected Macrophyte populations promotes coupled nitrification and denitrification function in eutrophic urban wetland ecosystem. International conferences on life sciences (ICLS 18), Jaipur. National Institute of Engineering Research.
3. **Sarma R.K**., Saikia R. (2018) Improvement of water logging stress tolerance in rice by arbuscular mycorrhizal fungi (AMF). 4th National conference on Plant Growth-Promoting Rhizobacteria (PGPR) for Sustainability of Agriculture and Environment, Mizoram University, Aizawl, Mizoram, India.

4. **Sarma R.K.**, Talukdar N.C., Saikia R. (2015) Role of PGPR in sustainable agriculture: global climate change and water sustainability. 4th Asian PGPR conference for sustainable agriculture, Hanoi, Vietnam.
5. **Sarma RK**, Handique PJ, saikia R (2013) Molecular characterization of drought tolerant fluorescent pseudomonads associated with gteen gram rhizosphere. National Seminar on *Plant Resources of NE Region and their Bioprospecting*. Department of Botany, Gauhati University, Guwahati-781014**.**
6. **Sarma RK**, Debnath R, Saikia R, Handique PJ, Bora TC (2012) DNA Fingerprinting of fluorescent pseudomonads Associated with Rhizospheric Soil of Green Gram and TheirRole in Plant Growth Promotion under Water Stress. National Seminar on *Biochemical and Biotechnological Research Approaches for Bio-resource Management of North East India Towards Sustainable Rural Development. D*epartment of Biochemistry and Agril. Chemistry B.N. College of Agriculture, Biswanath Chariali, Sonitpur, Assam.
7. **Sarma RK**, Debnath R, Bora TC, Saikia R (2010) Genetic and functional diversity of fluorescent pseudomonads isolated from green gram rhizosphere. First Indian Biodiversity congress. Centre for Innovation in Science & Social Action (CISSA), Kerala state biodiversity board, National biodiversity authority, University of Kerala and Navdanya.