

Name:

SAMRAT ADHIKARI

Head
Department of Biotechnology
St. Edmund's College, Shillong

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Joined on: 1st June, 2006

Qualification: PhD

Education:

- 2011 - PhD, NEHU, Shillong
- 2003 - BITP, DBT, Govt. of India
- 2002 – MSc Biotechnology, Bangalore University, Bangalore
- 2000 – BSc Biotechnology, NEHU, Shillong

Awards/ Fellowships/Scholarship:

- 2005 NET
- 2004 GATE
- Gold Medalist, MSc Biotechnology
- 1997-2000, NEC Scholarship
- 2000-2001, NEC Scholarship
- 2002, JRF, NATP Project, ICAR-NEH

Teaching Experience:

- 14 years

Research Experience

- 20 years

Special recognition / Award / Scholarship

- DBT, Govt. of India Fellow for Industrial training

Research Interests:

- Environmental Biotechnology
- Cyanobacteria Biotechnology
- Petroleum Biotechnology
- Bioinformatics

Professional Training:

- Cloning & expression
- Handling high end instruments
- Biocomputational tools

Member of Academic Bodies

- ❖ Member, BOS Biotechnology, NEHU, Shillong
- ❖ Moderator, UG Biotechnology Examination, NEHU, Shillong
- ❖ Examiner, UG Biotechnology Examination, NEHU, Shillong
- ❖ Scrutinizer, UG Biotechnology Examination, NEHU, Shillong
- ❖ Member, School Board of Life Sciences, NEHU, Shillong
- ❖ Reviewer for Journals:
 - Bioresource Technology
 - Journal of Environmental Pollution
 - Enzymology Journal
 - Archives of Microbiology
 - Journal of natural science and environment science
 - Continental journal of water, air and soil pollution
 - Internal Journal of Bioinformatics
 - Pharmacogsy Magazine

Research Guidance:

- PhD (Collaboration) – 03
- MTech- 06
- JRF- 02
- SRF – 01
- RA – 02
- PG – 07
- UG – 31

Research Projects:

- 5; 4 (completed) 1 (ongoing)

➤ Publications

- AK Singh, MB Syiem, RS Singh, S Adhikari, AN Rai; (2008); "A common transport system for methionine, L-methionine-DL-sulfoximine (MSX), and phosphinothricin (PPT) in the diazotrophic cyanobacterium *Nostoc muscorum*, *Curr. Microbiol.* 56 (5), 436-441.
- PP Devi, S Adhikari; (2012); "Homology modeling, docking studies and functional analysis of various azoreductase accessory interacting proteins of *Nostoc sp. PCC7120*; *Bioinformation* 8 (7), 296-300.
- PP Devi, S Adhikari; (2012); "Homology modeling and functional sites prediction of azoreductase enzyme from the cyanobacterium *Nostoc sp. PCC7120*: *Interdisciplinary sciences: computational life sciences* 4 (4), 310-318.
- MB Syiem, AK Singh, AN Rai, N Khumanthem, RS Singh, S Adhikari, A Bhattacharjee; (2007); Nitrogen metabolism, artificial association study in two cyanobacterial isolates and assessment of their potential as biofertilizer; *Indian Journal of Biotechnology* 6, 397-403
- Samrat Adhikari, Prashant Sarkhel, Arvind Kumar Singh and M.B Syiem (2008); "CTD – a pioneer tool for Environmental Biotechnology"; Published at the proceedings of National Seminar on "Toxicity of Chemicals and their hazards with special reference to heavy metals" Oct 23rd – 24th, 2008.
- Amrita Bhattacharjee, Natasha Nongrum, Mayashree B Syiem, Samrat Adhikari and A.N Rai (2008) "Role of cyanobacteria in cadmium bioremediation in rice fields"; published at the proceedings of National Seminar on "Toxicity of Chemicals and their hazards with special reference to heavy metals" Oct 23rd – 24th, 2008.
- Thakuria and S. Adhikari. 2015. Homology modeling of functional proteins of *Smilax aspera* plant and its docking study with p53 protein. *Int. J Ext. Res.* 5:72-78.
- B. Thakuria, P. Diengdoh and S. Adhikari. 2015. An in silico study on the hydrogen peroxide binding of homology modeled cyanobacterial catalase-peroxidase enzyme from *Cyanobacterium aponinum* and *Synechococcus sp. NKBG042902*. *Int. J. Ext. Res.* 10:7-16.
- B. Thakuria, N. Jungai and S. Adhikari. 2015. Catalytic site prediction of Azoreductase enzyme of *E. coli* with potentially important industrial dyes using molecular docking tools. *Int. J. Bio, Biochem and Bioinfo.* 5(2): 91-99.
- B. Thakuria, Chandra Singha, Prem Maisnam and Samrat Adhikari 2015. Functionally and catalytic active sites prediction and docking analysis of

azoreductase enzyme in *Pseudomonas putida* with a variety of commercially available azo dyes. *African J Biotechnol.* Vol. 14(26): 2162-2169.

- NangkyntiewJungai and Samrat Adhikari 2015. Genetic Diversity of free living heterocystous Cyanobacterial Species from coal mining areas of Jaintia Hills of Meghalaya. *Int. J. Res Std Bio.*
- Thakuria B, Laskar S, Adhikari S. A bioinformatics-based investigation to screen and analyze the bioactivity of *Piper longum* Linn. compounds as a ground-breaking hostile to antidiabetic activity. *Phcog Mag* 2020;16:S199-205.
- B Thakuria, D Purkayastha, S Adhikari (2019); A study of the effect of Paclitaxel, Docetaxel and Tamoxifen citrate compounds found in *Taxus wallichiana* on the Beta-tubulin and Estrogen Receptor (ESR) proteins in humans using a bioinformatics approach, *As Pac J. Mol. Biol. Biotechnol.* 2019 Vol. 27 (4) : 103-114
- Negi Y, Sharma S, Thyrniang B, Laloo FJ, Adhikari S (2019)Effect of mercury on the growth and biochemical behavior of *Nostoc muscorum* and *Anabaena variabilis*. *International Journal of Pharma and Bio Sciences.* 10(3): (B) 11-21
- Negi Y, Nongmaithem J, Laloo FJ, Adhikari S (2019) A study on the physiological, biochemical and lipid content behaviour of microalga *Chlorella* sp. in response to iron (iii). *Asian Journal of Microbiology, Biotechnology and Environmental Sciences.* 20(3): 982-987
- Negi Y, Sharma S, Sutradhar N, Adhikari S (2019) Differentiation of Filamentous Cyanobacterial Isolates Using DNA Fingerprinting Approach. *Indian Journal of Biotechnology.* Vol 18 -337-345
- Bikash Thakuria, Samrat Adhikari (2020); Bioinformatics based investigation on the assessment on the assortment of industrially accessible azodyes with azoreductase enzyme of *Pseudomonas putida*; *Current Strategies in Biotechnology and Bioresource Technology, Book Publisher International; a part of Science Domain International*2019/BP/1679D

➤ **Abstracts & Presentation in National/ International Seminar/ Symposium**

- 2013 *Paper presented on Role of Factor VIII & IX on the coagulation blood pathway using bioinformatics tools. Paper Presented at the National Symposium on Role of Bioinformatics in Biodiversity Management on 2nd February, 2013, organized by National Botanical Research Institute, Lucknow, India.*
- 2012 *Poster Presented on the HMG – CoA pathway and its role on Melavanute Pathway using Bioinformatics tools; Presented at the National Symposium on*

“Bioinformatics: Challenges in the post Genomic era, 2nd February, 2012 at University of Jammu, Jammu.

Paper Presented on Homology Modelling and Ramachandran Plot on azoreductase enzyme. Presented at the National Conference on Contemporary Bioinformatics Researches in India on 10th November, Organized by Assam University, Silchar, Assam

2011 *Poster Presented on “Homology modeling of azoreductase enzyme for azodyes bioremediation”, Presented at the “Silver Jubilee Symposium on Bioinformatics – BTISNET in India”, Pondicherry University, Pondicherry, India on 2nd Feb, 2011.*

2008 *Paper Presented on “ Study on the toxicity of Thallium to a variety of diazotrophic Cyanobacteria and its implication in Environmental Biotechnology” Presented at National Seminar on Nuclear Sciences and its application in various fields, on 15th – 16th May, 2008, organized by St. Mary’s College, Shillong*

Paper presented on “Nitrogen regulation of thallium to diazotrophic cyanobacterium Nostoc muscorum” in the National seminar on “Advances in Medical and Microbial Biochemistry” held on 22nd -23rd, 2008 March, NEHU (under UGC-SAP Programme), Shillong, India

Paper Presented on “Toxicity of gadolinium and ruthenium on the growth of diazotrophic cyanobacteria Anabaena cycadeae” in the National seminar on “Toxicity of chemicals and their hazards with special reference to heavy metals” held on -23rd – 24th October, 2008 St. Edmund’s college, Shillong, India

2007 *Presented paper on “Virulence and plasmid characteristic of Bordetella bronchiseptica isolated from pigs suffering from atrophic rhinitis in Meghalaya” in the National seminar on “Adaptation Biochemistry” held on 22nd -23rd, 2007 March, NEHU (under UGC-SAP Programme), Shillong, India.*

2006 *Presented a paper on the “Thallium toxicity to diazotrophic cyanobacterium Nostoc ANTH and Anabaena cycadeae” in National Seminar on the “Trends in Biochemical Research”, 31st march, 2006, NEHU, Shillong, India*

Presented a paper on “ DGGE Fingerprinting of cyanobacterial strains” in the International conference on “Current trends in algal bio resources utilization” organized by Assam University, Silchar, 4th -6th December, 2006,

India.

- 2002 *Poster presented on “Diagnosis of atypical Blackleg by Polymerase Chain Reaction”. at National seminar on veterinary Biotechnology, Pondicherry on 12th – 14th December 2002.*
Paper presented on “RAPD analysis of selected E. coli 0157 and 0149 strains isolated from pig and poultry in Meghalaya”, at “National seminar on veterinary Biotechnology,” Pondicherry, 12th– 14th December, 2002.
Poster presented on “Detection of Shiga like toxin genes (stx 1, stx 2) and Enterohemolysin gene (hly A) in E. coli strains isolated from Pig and poultry by Polymerase Chain Reaction”, at National seminar on veterinary Biotechnology, Pondicherry on 12th – 14th December 2002.
- 001 *Presented a paper on “ Characterization of important toxins in Bordetella bronchiseptica causing atrophic rhinitis in Meghalaya” in the National Seminar on “Approaches for increasing agricultural productivity in hill and mountain ecosystem” organized by ICAR, Shillong, 18th -20th October, 2001, India.*
Paper presented on “Characterization of Aeromonashydrophila isolated from the Indian major carp Catlacatla suffering from ulcerative syndrome in Meghalaya”. At National seminar on “Approaches for increasing agricultural productivity in hill and mountain ecosystem” on 18th -20th Oct’, 2001. Abstract on pp-169.
- 1999 *Presented a poster on “Effect of fixed carbon sources (Glucose, Fructose, Sucrose) on the growth and heterocyst frequency of free living Cyanobacteria, Nostoc sp” in the National Seminar on “Strategies for agricultural research in North East” organized by ICAR, Shillong, 10th -12th November, 1999, India.*

Additional Responsibilities (In St. Edmund’s College)

- Member IQAC Committee, St. Edmund’s College, Shillong
- Nodal Officer, ATAL Innovation Centre, St. Edmund’s College, Ministry of Education, Govt. of India
- Member, Institute Innovation Cell (IIC), St. Edmund’s College, Shillong