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Research and Academic Interest:

Plant Genomics is the thrust area of my research. My research interest primarily emphasizes on molecular characterization and tissue culture of crop and other economically important plant species with biotechnological applications. More specifically, I have worked on Plant tissue culture, DNA fingerprinting for assessment of genetic stability as well as diversity in large number of species. My current research interest focuses on free radical biology, oxidative stress, heavy metal toxicity. I have devised UG, PG and Pre-Ph.D. level courses at Raiganj University. Presently, I am engaged with the teach of the following courses: Principles of Genetic Engineering, Molecular markers and Breeding, Plant biotechnology in agricultural sector, Recombinant DNA technology, Molecular Genomics and Genetics.

Honors and Awards:

- 2008 Qualified for the Graduate Aptitude Test in Engineering (GATE, 2008)
Organized by Indian Institute of Technology (Government of India).
- 2007-2009 (UGC-JRF) Awarded the prestigious National fellowship from
University of Grants Commission, Govt. of India for pursuing the research career.

- 2009-2012 (UGC-SRF) Awarded the prestigious National fellowship from University of Grants Commission, Govt. of India for pursuing the research career.
- 2014-2016 Awarded the prestigious Post doctoral National Fellowship from University of Grants Commission, Govt. of India.

Membership of Academic Bodies & Committees of the University

SL. No.	Year	Position	University/Institute
1.	2016 onwards	Chairman Board of Studies in Sericulture (UG)	Raiganj University, Raiganj
2.	2016 onwards	Chairman Board of Studies in Sericulture (PG)	Raiganj University, Raiganj
3.	2017 onwards	Center-in-charge, Board of examiners in Sericulture (PG)	Raiganj University, Raiganj

Tie ups and Collaborations

- Dr. Prasanta Kumar Kar (Scientist-D), Regional Tasar Research Station, Central Silk Board (Minister of Textile, Govt. of India), Baripada, Mayurbhanj, Odisha.

Research Group (Ph.D.)

- Mr. Khasru Alam
- Mr. Koushik Sarkar
- Mr. Debjoy Bhattacharjya

Selected Publication:

Chapter in Books:

1. S. Bhattacharya, S. Mondal, **S.Saha**, T.K.Bandopadhyay, P.D.Ghosh (2007). Optimization of DNA extraction and RAPD protocol for assessment of micropropagated plantlets in certain aromatic and medicinal plants. In: *Perspectives in Cytology and Genetics* (Eds. Giri

- AK, Ghosh PD, Mukherjee A): *Genomic and proteomic approaches to decipher the molecular basis of Pathogenesis*. Pp. 235-244.
2. **S. Saha**, T.Dey, P.D.Ghosh (2009). Use of RAPD marker in the study of two important aromatic plants (*Cymbopogon* and *Ocimum*). In: *Perspectives in Cytology and Genetics* (Eds. Giri AK, Mukherjee A, Banerjee M): *All India congress of Cytology and Genetics*. Pp. 235-244.
 3. **S. Saha**, P.D.Ghosh, C. Sengupta (2012) Assessment of genetic diversity in three species of *Ocimum* using RAPD. In: *Multidisciplinary approach in Angiosperm systematic* (Eds. Maiti GG, Mukherjee SK): *Systematics, Biotechnology and Bioprospecting*. Pp. 841-846.
 4. S. Adhikari, **S. Saha**, P.D. Ghosh & T.K. Bandyopadhyay (2016) Marker assisted sex determination in dioecious crops: an advancement in molecular biology (Ed. Gupta N): *Research Trends in Molecular Biology*, Research Signpost. Pp.1-37.

Proceedings of the National Conference (full length paper):

5. Jalaja S. Kumar, M. Munirathnam Reddy, T. Mogili, **S. Saha** & A. K Bajpai (2011) Sodium: Potassium ratio as an index for determining alkalinity tolerance in Mulberry. *Golden Jubilee Conference - Sericulture Innovations: Before and Beyond*. CSR&TI, Mysore. Pp. 24-27.

National and International Journal:

6. **S. Saha**, P.D.Ghosh, C. Sengupta (2010). In vitro multiple shoot regeneration of *Mentha piperita*. *Journal of Tropical Medicinal Plants*. 11(1): 89-91.
7. **S. Saha**, P.D.Ghosh, C. Sengupta (2010). An efficient method for micropropagation of *Ocimum basilicum* L. *Indian Journal of Plant Physiology* 15(2): 168-172.
8. **S. Saha**, S.T.Dey, S.Adhikari, P.D.Ghosh (2010). *In vitro* multiple shoot regeneration and analysis of genetic fidelity of *Mentha piperita* L. *Bionature*. 30(2): 71-81.
9. T. Dey, **S. Saha**, T. N. Dhar & P.D. Ghosh (2010) Optimization and comparison of efficiency between two DNA isolation protocol in

- Cymbopogon species. General and Applied Plant Physiology* 36(3-4):232-238.
10. **S. Saha**, T. Dey & P.D. Ghosh (2010) Micropropagation of *Ocimum kilimandscharicum* Guerke (Labiatae). *Acta Biologica Cracoviensia Series Botanica*. 52 (2):50-58.
 11. **S. Saha**, A. Kader, C. Sengupta & P.D. Ghosh (2012) *In vitro* propagation of *Ocimum gratissimum* L. (Lamiaceae) and its evaluation of genetic fidelity using RAPD markers. *American Journal of Plant Science*. 3(1):64-74.
 12. **S. Saha**, M. K. Mukhopadhyay, P.D.Ghosh & D. Nath (2012) Effect of Methanolic leaf extract of *Ocimum basilicum* L. on benzene induced Hematotoxicity in Mice. *Evidence based alternative medicine*. vol. 2012 (doi:10.1155/2012/176385)
 13. **S. Saha**, T.N. Dhar, C. Sengupta & P.D. Ghosh (2013) Biological activities of essential oils and methanol extract of five *Ocimum* species against pathogenic bacteria. *Czech journal of food sciences*. 31 (2):194-202.
 14. P.D. Ghosh, S. K. Chattopadhyay, S. Adhikari, **S. Saha**, S. Mondal, A. Kader, S. T. Dey, T. K. Bandyopadhyay, C. Sengupta (2013) A high throughput DNA extraction method from chemotypically heterogeneous plant species. *Protocol Exchange*, **Nature Publishing House** (doi:10.1038/protex.2013.018)
 15. **S. Saha**, C. Sengupta & P.D. Ghosh (2014) Molecular and phytochemical analyses to assess genetic stability in alginate-encapsulated microshoots of *Ocimum gratissimum* L. following *in vitro* storage. *Nucleus* 57(1): 33-43.
 16. **S. Saha**, S. Roy, C. Sengupta & P.D.Ghosh (2014) Micropropagation and analysis of genetic stability in regenerated plantlets of *Ocimum canum* Sims. *Indian Journal of Plant Physiology* 19(2):174-183.
 17. S. Adhikari, **S. Saha**, T.K. Bandyopadhyay & P.D. Ghosh (2014) Microsatellite based assay of sexual heterogeneity in pointed gourd

(*Trichosanthes dioica* Roxb.). *The World Scientific Journal*
doi.org/10.1155/2014/216896

18. **S. Saha**, C. Sengupta & P. D. Ghosh (2014) Evaluation of the genetic fidelity of *in vitro* propagated *Ocimum basilicum* L. using RAPD and ISSR markers. *Journal of Crop science and Biotechnology* 17(4): 281-287.
19. S. Adhikari, **S. Saha**, T.K. Bandyopadhyay & P.D. Ghosh (2015) Efficiency of ISSR marker for characterization of *Cymbopogon* spp. and their suitability in molecular barcoding. *Plant Systematics and Evolution* 301:439-450.
20. **S. Saha**, C. Sengupta & P.D. Ghosh (2015) Encapsulation, short-term storage, conservation and molecular analysis to assess genetic stability in alginate-encapsulated microshoots of *Ocimum kilimandscharicum* Guerke. *Plant Cell tissue and organ culture* 120: 519-530.
21. T. Dey, **S. Saha** & P. D. Ghosh (2015) Somaclonal variation among somatic embryo derived plants, evaluation of agronomically important somaclones in *Cymbopogon winterianus* and detection of genetic changes by RAPD. *South African Journal of Botany* 96: 112-121.
22. T. Dey, **S. Saha**, S. Adhikari & P.D. Ghosh (2015) A Comprehensive review on medicinally important plant *Croton tiglium* L. *Int. J. Curr. Res. Biosci. Plant Biol.* 2(7): 124-128.
23. **S. Saha**, S. Adhikari, T. Dey & P.D. Ghosh (2016) RAPD and ISSR based evaluation of genetic stability of micropropagated plantlets of *Morus alba* L. *Meta Gene.* 7 (1):7-15.
24. **S. Saha**, T. Dey, S. Adhikari, S. Mukhopadhyay, C. Sengupta & P.D. Ghosh (2016) Effects of plant growth regulators on efficient plant regeneration efficiency and genetic stability analysis from two *Ocimum tenuiflorum* L. morphotypes. *Rendiconti Lincei - Scienze Fisiche e Naturali.* 27(4): 609-628.
25. S. Adhikari, **S. Saha**, A. Biswas, T. K. Bandyopadhyay & P.D. Ghosh (2017) Randomly primed improved PCR approach for genetic

characterization and identification of *Cymbopogon* germplasms.

***Rendiconti Lincei - Scienze Fisiche e Naturali*. 28(2):379-392.**

- 26.** S. Adhikari, A. Biswas, S. Saha, T. K. Bandyopadhyay, Parthadeb Ghosh(2017) **A** comprehensive review on the development and application of molecular markers in plant genome analysis. *Nucleus* **(Accepted)**.
- 27.** **S. Saha**, S. Sekh, T. Dey, S. Adhikari, C. Sengupta, & P.D. Ghosh (2017) Critical factors affecting *in vitro* propagation of *Bacopa monnieri* (L.) and analysis of genetic homogeneity by RAPD and ISSR. *Proceedings of the National Academy of Sciences, India Section B: Biological Sciences* **(Accepted)**
- 28.** S. Adhikari, **S. Saha**, T.K. Bandyopadhyay & P.D. Ghosh (2017) Randomly primer improved PCR approach for genetic characterization and identification of *Cymbopogon* germplasm. *Plant Molecular Biology Reports* **(Accepted)**

National and International Seminars/Symposiums/Workshop attended/ Paper Presented

- 1.** National Workshop on “Bioinformatics” organized by Central Sericultural Research and Training Institute, Mysore, September 14th-15th, 2005. **(Participated)**.
- 2.** National workshop on “Production, processing and marketing of spices and aromatic plants” Organized by Department of Horticulture, Uttar Banga Krishi Viswavidyalaya, Cooch Behar, West Bengal-January 16th-17th, 2008. **Presented Paper (Talk)**.
- 3.** National symposium on “Diversity and Functionality of plant and Microbes” Organized by Department of Botany, University of North Bengal, Siliguri, West Bengal-January 24th-25th, 2008. **Presented paper (Talk)**.
- 4.** National Workshop on “Bioinformatics” Organized by University of North Bengal,

Bioinformatics facility, Department of Botany, Siliguri, West Bengal-
March 7th-9th,

2008 **(Participated)**.

5. State level Seminar on “Global warming and its effect on Biodiversity”
Organized by
Department of Zoology, University of Kalyani in collaboration with
Biodiversity Board, Govt. of West Bengal-March 20th, 2008.
(Participated).
6. International Symposium on “Multidisciplinary approaches in
Angiosperm Systematics” Organized by Indian Association for
Angiosperm Taxonomy in collaboration with Department of Botany,
University of Kalyani, West Bengal-October 11th-13th, 2008. **Presented
paper (Talk)**.
7. National workshop cum Seminar on “Intellectual Property Rights with
Special Emphasis on Microorganism and Plant variety protection”
Organized by Patent Information Centre, West Bengal State Council of
Science & Technology, DST, Govt. of West Bengal and Department of
Microbiology, University of Kalyani, West Bengal-August 24th-26th,
2009. **(Participated)**.
8. International Symposium on “All India Congress of Cytology and
Genetics” Organized by Indian Institute of Chemical Biology, Kolkata &
Department of Genetics, University of Calcutta-December 1st-4th,
2009. **Presented paper (Poster)**.
9. National Symposium on “Plant Cell Tissue & Organ Culture: The Present
Scenario” Organized by Centre of Advanced study, University of
Calcutta in collaboration with Ramakrishna Mission Institute of Culture,
Kolkata-March 3rd-5th, 2010. **Presented paper (Poster)**.
10. National Symposium on “Recent Advances in Plant Tissue
Culture and Biotechnological Researches in India” Organized by M. N.
Institute of Applied Science, Bikaner (Rajasthan) and Plant Tissue
Culture Association, India-February

4th-6th, 2011. **Presented paper (Poster).**

- 11.** National Symposium on “Impact of Plant Tissue Culture on Advance in Plant Biology” Organized by St. Xavier’s College , Ahmadabad and Loyola Center for Research and Development-January 19th-21th, 2012. **Presented paper (Talk).**
- 12.** National Conference on “Biology and Bioinformatics of Economically important plants and Microbes” Organized by Department of Botany and Bioinformatics facility, University of North Bengal, Siliguri-February 17th-19th, 2012. **Presented paper (Talk).**
- 13.** Workshop cum Seminar on “Intellectual Property Rights with Special Emphasis on Microorganism and Plant variety protection” Organized by Patent Information Centre, West Bengal State Council of Science & Technology, DST, Govt. of West Bengal and Department of Microbiology, University of Kalyani-September 7th, 2012. **(Participated).**
- 14.** “100th Years Indian Science Congress” Organized by Indian Science Congress Association in collaboration with University of Calcutta-January 3rd-7th, 2013. **(Participated).**
- 15.** National Workshop on “Food security, GM crops, GMO and Biosafety” Organized by ENVIS centre on Environmental Biotechnology, Department of Environmental Science, University of Kalyani-March 19th, 2013. **(Participated).**
- 16.** National workshop on “Food security & Genetically Modified crops” Organized by West Bengal State Council of Science & Technology and Department of Biophysics, Molecular Biology and Bioinformatics, University of Calcutta-July 25th, 2013. **(Participated).**
- 17.** National Symposium on “Frontiers in Modern Biology” Organized by Department of

Biological Science, Indian Institute of Science Education and Research, Kolkata- November 9th-10th, 2013. **Presented paper (Poster).**

- 18.** International Seminar on “The Progress & Prospect of 21st Century Research in Advance Life Sciences” Organized by Department of Botany, Vivekananda Mahavidyalaya-February 15th-17th, 2014. **Presented paper (Talk).**
- 19.** National Seminar on “Plant Sciences in The Genomic Era” Organized by Department of Botany, University of Kalyani-March 5th, 2014. **(Participated).**
- 20.** National Symposium on “ Advances in Plant Molecular Biology & Biotechnology” Organized by Indian Institute of Science Education and Research (IISER), Pune- March 10th-12th, 2014. **Presented paper (Poster).**
- 21.** National symposium on “Bioresources and sustainable developmental & 2nd National Bioresources and sustainable Development summit” jointly organized by Department of Botany, North-East Hill University, Shillong and Institute of Bioresources and sustainable Development, Imphal, October 28th-29th, 2015. **Presented paper (Talk).**
- 22.** National seminar on “Science for Nation Building” organized by Kalyani Mahavidyalaya, Kalyani, Nadia, West Bengal, December 14th, 2015. **(Participated).**
- 23.** National workshop on “In silico analysis mutation” organized by Bioinformatic infrastructure Facility, Department of Biochemistry and Biophysics, University of Kalyani, December 16th, 2015. **(Participated).**

- 24.** International conference on “Raiganj University: Challenges & Opportunities” organized by Raiganj University, March 14th-15th, 2016. **(Participated).**
- 25.** National Seminar on “Chemical Science Horizon” organized by Department of Chemistry, Raiganj University, March 16th, 2017. **Presented paper (Poster).**
- 26.** National Seminar on “Frontiers in Cell Biology and Microbiology” organized by Department of Microbiology, Raiganj University, March 31st, 2017. **Presented paper (Talk).**