

Dr. Anik Sarkar



Personal Data Born 26th April 1993– Male –Unmarried – Indian

Academic qualification :

M.Sc. in Botany (2016): University of Calcutta, First Class.
(Specialization in Plant Physiology, Biochemistry and Molecular Biology)

B.Sc. in Botany (2014): Maulana Azad College, First Class.

Ph.D.: Botany (University of Calcutta)

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Research interests :

- Plant innate immunity
- Nitric oxide signaling in plants
- Elicitor induced boosting of innate immunity in plants

Research Experience: More than 6 years.

Expertise: Biochemical analysis

Research Publications:

Research papers and review papers: 12
Book Chapters: 7

Awards:

1. Joint **CSIR UGC NET JRF** in Life sciences (December 2016) (**AIR 69**).
2. **GATE Life Sciences** 2017 (**AIR 447**).

3. **Outstanding paper award** in 4th Regional Science and Technology Congress (Southern region) 2019 jointly organized by Department of Science & Technology and Biotechnology (Govt. of West Bengal) and MAKUT.
4. **First Prize** in Two Day National e-Conference on “Plant Science Research: Relevance, Funding, Challenges and Opportunities” organized by Mahatma Hansraj Faculty Development Centre (A Centre of MoE, Govt. of India).
5. **Best Oral Presentation** in Two Days National Seminar (Online Mode) organized by University of North Bengal (2021).

Presentations in National, International and State Conferences:

- ✓ **International: 6**
- ✓ **National: 2**
- ✓ **State: 1**
- ✓ Abstract was selected and presented in **India International Science Festival (2020)**.

Workshop Attended:

- Hands on training on Molecular biology.
- National e-workshop on Modern Angiospermic Taxonomy: Concept, Tools and Techniques.
- Online Short Term Course on ‘Plant Systematics: Classical to Modern.’
- E-workshop on Plant Anatomy.

Other Activities

- Taking classes of B.Sc. Botany Honours students of Fakir Chand College (Affiliated to University of Calcutta).
- Guest faculty in Post Graduate Department of Botany, Scottish Church College, Kolkata.
- Guest faculty in Post Graduate Department of Botany, Bethune College, Kolkata.
- Guiding underprivileged students of Life sciences for different PhD entrance examinations (**Without remuneration**).

Publications

Research Publications:

1. **Sarkar A**, Chakraborty N, Acharya K. Unraveling the role of nitric oxide in regulation of defense responses in chilli against *Alternaria* leaf spot disease. *Physiol Mol Plant Pathol*.2021;114:101621.doi:10.1016/J.PMPP.2021.101621 (**IF:2.7**)

2. Chakraborty, N., Mukherjee, K., **Sarkar, A.**, & Acharya, K. (2019). Interaction between Bean and *Colletotrichum gloeosporioides*: Understanding through a biochemical approach. *Plants*, 8(9), 345. (IF: 4.5)
3. Chakraborty, N., **Sarkar, A.**, & Acharya, K. (2021). Biotic elicitor induced nitric oxide production in mitigation of *Fusarium* wilt of tomato. *Journal of Plant Biochemistry and Biotechnology*, 1-13. (IF: 1.9)
4. Chakraborty, N., **Sarkar, A.**, Dasgupta, A., Paul, A., Mukherjee, K., & Acharya, K. (2021). In planta validation of nitric oxide mediated defense responses in common bean against *Colletotrichum gloeosporioides* infection. *Indian Phytopathology*, 1-10.
5. Paul, A., **Sarkar, A.**, Acharya, K., & Chakraborty, N. (2022). Fungal Elicitor-Mediated Induction of Innate Immunity in *Catharanthus roseus* Against Leaf Blight Disease Caused by *Alternaria alternata*. *Journal of Plant Growth Regulation*, 1-11. (Equal contribution IF: 4.8)
6. **Sarkar, A.**, Chakraborty, N., & Acharya, K. (2022). Chitosan nanoparticles mitigate *Alternaria* leaf spot disease of chilli in nitric oxide dependent way. *Plant Physiology and Biochemistry*, 180, 64-73. (IF: 6.5)
7. Ganguly, R., Sarkar, A., Acharya, K., Keswani, C., Minkina, T., Mandzhieva, S., ... & Chakraborty, N. (2022). The Role of NO in the Amelioration of Heavy Metal Stress in Plants by Individual Application or in Combination with Phytohormones, Especially Auxin. *Sustainability*, 14(14), 8400. (IF: 3.9)

Review articles:

1. Chakraborty, N., Banerjee, A., **Sarkar, A.**, Ghosh, S., & Acharya, K. (2021). Mushroom polysaccharides: A potent immune-modulator. *Biointerface Research in Applied Chemistry*, 11, 8915-8930.
2. Banerjee, A., **Sarkar, A.**, Acharya, K., & Chakraborty, N. (2021). Nanotechnology: an Emerging Hope in Crop Improvement. *Letters in applied nanobiosciences*, 10, 2784-2803

Book chapters

1. Anamika Paul, Nehan Shamim, **Anik Sarkar**, Krishnendu Acharya and Nilanjan Chakraborty. Boosting of Bioactive Secondary Metabolites in Anti-Diabetic Plants Through Elicitation: A Simple Technology for Better Future. In: *Biotechnology of Anti-Diabetic Medicinal Plants*, Eds. Saikat Gantait, Sandeep Kumar Verma and Amit Baran Sharangi, Springer Nature, 2021
2. Nilanjan Chakraborty, Suparna Mukherjee, **Anik Sarkar**, Puja Shaw, Krishnendu Acharya, Role of glutathione transporter in plants under stress, In: *Transporters and Plant Osmotic Stress*, Eds. Aryadeep Roychoudhury, Durgesh Kumar Tripathi, Rupesh Deshmukh, Academic Press, pp. 345- 364, 2021

3. Nilanjan Chakraborty, **Anik Sarkar**, Krishnendu Acharya, Multifaceted Roles of Salicylic Acid and Jasmonic Acid in Plants Against Abiotic Stresses, In: Aryadeep Roychoudhury and Durgesh Kumar Tripathi (Eds) Protective Chemical Agents in the Amelioration of Plant Abiotic Stress: Biochemical and Molecular Perspectives, John Wiley & Sons Ltd. Pp. 374-388, 2020, DOI: 10.1002/9781119552154.ch18
4. Nilanjan Chakraborty, **Anik Sarkar**, Krishnendu Acharya, Transgenic Rice Live Against Bacterial Blight. In: Roychoudhury A. (eds) Rice Research for Quality Improvement: Genomics and Genetic Engineering. Springer, Singapore. Pp. 61-68, 2020, https://doi.org/10.1007/978-981-15-5337-0_3
5. **Anik Sarkar**, Krishnendu Acharya. Chitosan: A promising candidate for sustainable agriculture, In: Precision agriculture and sustainable crop production. Eds by H.K.Chourasia, Krishnendu Acharya, Vivek Kumar Singh, Today and Tomorrows Printers and Publishers, New Delhi, pp. 391-407, 2020
6. Nilanjan Chakraborty, **Anik Sarkar** and Krishnendu Acharya, Elicitor-mediated Amelioration of Abiotic Stress in Plants, In: Molecular Plant Abiotic Stress: Biology and Biotechnology, First Edition. Edited by Aryadeep Roychoudhury and Durgesh Kumar Tripathi. Published by JohnWiley & Sons Ltd. 2019, pp. 105-122
7. **Anik Sarkar** and Krishnendu Acharya, A Silent Battle, In: Integrated Management of Crop Diseases, Ed by: Chourasia H.K. & Choudhary S.K., Published by: Today and Tomorrow's Printer and Publishers, New Delhi. Pp. 113-123, 2018