



Name: ARYADEEP ROY CHOUDHURY

Designation: PROFESSOR

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EDUCATIONAL QUALIFICATIONS:

Degree	Institute/University
B.Sc.(Honours) in Botany	Presidency College, Kolkata (under Calcutta University)
M.Sc. in Biophysics and Molecular Biology	University of Calcutta
Ph.D. in Science (specialization in Plant Molecular Biology and Biotechnology)	Jadavpur University

POST DOCTORAL RESEARCH:

Collaborative program with Bose Institute and University of Calcutta on “Transgenic rice for improved stress tolerance”

CAREER PROFILE:

- Assistant Professor at the Post Graduate Department of Biotechnology, St. Xavier’s College (Autonomous), Kolkata, from March 2010 to November 2022
- Professor at the Discipline of Life Sciences, School of Sciences, Indira Gandhi National Open University, New Delhi, from November 2022 till date

RESPONSIBILITIES AT IGNOU:

- Design, Development and Coordination work of programs at Certificate, Diploma, Graduate, Post Graduate and Ph. D. level

- Maintenance of programs and courses
- Participation in the Interactive Radio Counselling through Gyan Vani and teleconference sessions through Gyan Darshan
- Discipline Group Co-ordinator (DGC) for the Discipline of Life Sciences from February 2023 to April 2024
- Committee member of the Four Year Under Graduate Program (FYUP)

RESEARCH AREA/SPECIALIZATION:

1. Broad area: Plant Physiology, Biochemistry, Molecular Biology and Biotechnology with special emphasis on multiple environmental stress response in plants

2. Outline of research:

Understanding the molecular regulation of multiple abiotic stress (fluoride, arsenic, heavy metal toxicity, salinity and drought) in indica rice varieties

Abiotic stress mainly salinity, drought, cold, heavy metals/metalloids or fluorides place a heavy penalty on the growth and yield of crop plants. It is increasingly apparent that plants, being sessile, have evolved many adaptations to counteract such stresses. The focus of my research is on the physiological and molecular responses that operate during such environmental stresses in plants. The alteration in stress-inducible gene and protein expression is one of the fundamental metabolic processes that may influence stress tolerance. Identification of genes/proteins responsible for stress tolerance, understanding the mechanism of their induction, comparative genomic and proteomic approaches between susceptible and tolerant cultivars, analysis of regulatory elements in the upstream region of these genes and their interaction with the stress-inducible transcription factors, identification of the regulatory transcription factors and their pattern of expression, overexpression of these genes or transcription factors through transgenic approaches to generate stress-tolerant plants, analysis of stress-inducible promoters through reporter gene assays and correlation of such molecular analyses with biochemical stress markers, all fall within the area of my research. In addition, my interest is also directed towards comparative physiological and molecular behavior of several indigenous aromatic rice cultivars to abiotic stresses, so as to increase their productivity and spread their global demand. The enhancement of stress-inducible gene expression by the incorporation of Scaffold/Matrix Attachment Region DNA, from various plant sources, in such constructs will also constitute another goal of my research.

GOOGLE SCHOLAR LINK: <https://scholar.google.com/citations?user=2z52kIAAAAAAJ&hl=en>
Citations: 10981; h-index: 46; i-10 index: 126

RESEARCH PROJECTS UNDERTAKEN AS SOLE PRINCIPAL INVESTIGATOR:

Project-1

Principal Investigator of the project entitled “Deciphering the biochemical and molecular mechanism of melatonin action during arsenic-mediated stress in indica rice varieties” [sponsored by Department of Science & Technology and Biotechnology, Govt. of West Bengal]

Project-2

Principal Investigator of the project entitled “Deciphering the biochemical and molecular response of indica rice varieties to fluoride-mediated environmental stress and cloning of putative fluoride exporter (FEX) from rice for characterization” [sponsored by Science and Engineering Research Board, Govt. of India]

Project-3

Principal Investigator of the project entitled “Molecular analysis of the expression of abscisic acid inducible genes in the developing grains: Comparison between salt-sensitive and salt-tolerant rice varieties” [sponsored by Science and Engineering Research Board, Govt. of India]

Project-4

Principal Investigator of the project entitled “Dissecting the basis of biochemical and molecular-genetic regulation of aroma production in common aromatic indica rice varieties” [sponsored by Council of Scientific and Industrial Research, Govt. of India]

RESEARCH GUIDANCE:

A. Ph.D. (AS SOLE PRINCIPAL INVESTIGATOR)

Sl. Number	Name of registered Ph.D. student	Ph.D. awarded	Year of Ph.D. award
1	Dr. S. Paul	Awarded	2019
2	Dr. P. Ghosh	Awarded	2022
3	Dr. A. Banerjee	Awarded	2023
4	Dr. S. Samanta	Awarded	2023
5	Dr. A. Singh	Awarded	2024

B. M.Sc. DISSERTATION

Guided 13 M.Sc. students of Biotechnology from St. Xavier’s College (Autonomous), Kolkata and of Botany from Scottish Church College, Kolkata

RESEARCH PUBLICATIONS IN PEER-REVIEWED INTERNATIONAL/NATIONAL JOURNALS:

Last 10 years only

1. Kaushik Das, **Aryadeep Roychoudhury*** (2014) Reactive oxygen species (ROS) and response of antioxidants as ROS-scavengers during environmental stress in plants. **Frontiers in Environmental Science** December; 2: 53
2. Naser A. Anjum, Adriano Sofo, Antonio Scopa, **Aryadeep Roychoudhury**, Sarvajeet Singh Gill, Muhammad Iqbal, Alexander S. Lukatkin, Eduarda Pereira, Armando C. Duarte, Iqbal Ahmad (2015) Lipids and proteins—major targets of oxidative modifications in abiotic stressed plants.

Environmental Science and Pollution Research March; 22 (6): 4099-4121

3. Aditya Banerjee, **Aryadeep Roychoudhury*** (2015) WRKY Proteins: signaling and regulation of expression during abiotic stress responses. **The Scientific World Journal** March; 2015: 807560; 17 pages
4. Naser A. Anjum, Mirza Hasanuzzaman, Mohammad A. Hossain, Thangavel Palaniswamy, **Aryadeep Roychoudhury**, Sarvajeet Singh Gill, Miguel A.M. Rodrigo, Vojtěch Adam, Masayuki Fujita, Rene Kizek, Armando Da Costa Duarte, Eduarda Pereira, Iqbal Ahmad (2015) Jacks of metal(loid) chelation trade in plants – an overview. **Frontiers in Plant Science** April; 6:192
5. **Aryadeep Roychoudhury***, Aditya Banerjee (2015) Transcriptome analysis of abiotic stress response in plants. **Transcriptomics** October; 3 (2): e115
6. **Aryadeep Roychoudhury***, Aditya Banerjee, Vikramjit Lahiri (2015) Metabolic and molecular-genetic regulation of proline signaling and its cross-talk with major effectors mediates abiotic stress tolerance in plants. **Turkish Journal of Botany** December; 39 (6): 887-910
7. **Aryadeep Roychoudhury***, Srijita Ghosh, Saikat Paul, Sukanya Mazumdar, Ganginee Das, Subhankari Das (2016) Pre-treatment of seeds with salicylic acid attenuates cadmium chloride-induced oxidative damages in the seedlings of mungbean (*Vigna radiata* L. Wilczek). **Acta Physiologiae Plantarum** January; 38 (1): 11
8. **Aryadeep Roychoudhury***, Aditya Banerjee (2016) Endogenous glycine betaine accumulation mediates abiotic stress tolerance in plants. **Tropical Plant Research** April; 3(1): 105–111
9. Aditya Banerjee, **Aryadeep Roychoudhury*** (2016) Group II late embryogenesis abundant (LEA) proteins: structural and functional aspects in plant abiotic stress. **Plant Growth Regulation** May; 79: 1-17
10. Aditya Banerjee, **Aryadeep Roychoudhury***, S. Krishnamoorthi (2016) Emerging techniques to decipher microRNAs (miRNAs) and their regulatory role in conferring abiotic stress tolerance of plants. **Plant Biotechnology Reports** July; 10(4): 185-205
11. Saikat Paul, **Aryadeep Roychoudhury*** (2016) Seed priming with spermine ameliorates salinity stress in the germinated seedlings of two rice cultivars differing in their level of salt tolerance. **Tropical Plant Research** December; 3(3): 616–633
12. Aditya Banerjee, **Aryadeep Roychoudhury*** (2017) Abscisic-acid-dependent basic leucine zipper (bZIP) transcription factors in plant abiotic stress. **Protoplasma** January-February; 254(1): 3-16
13. Aditya Banerjee, Shabir H. Wani, **Aryadeep Roychoudhury*** (2017) Epigenetic Control of Plant Cold Responses. **Frontiers in Plant Science** September; 8:1643
14. **Aryadeep Roychoudhury*** (2017) Editorial article for Special Issue 'Abiotic stress tolerance in plants: growth regulators and transcriptional control of multiple signaling pathways'. **Plant Gene** September; 11: 59-60

15. Saikat Paul, **Aryadeep Roychoudhury***, Aditya Banerjee, Neha Chaudhuri, Puja Ghosh (2017) Seed pre-treatment with spermidine alleviates oxidative damages to different extent in the salt (NaCl)-stressed seedlings of three indica rice cultivars with contrasting level of salt tolerance. **Plant Gene** September; 11: 112-123
16. Saikat Paul, **Aryadeep Roychoudhury*** (2017) Seed priming with spermine and spermidine regulates the expression of diverse groups of abiotic stress-responsive genes during salinity stress in the seedlings of indica rice varieties. **Plant Gene** September; 11: 124-132
17. Saikat Paul, **Aryadeep Roychoudhury*** (2017) Effect of seed priming with spermine/spermidine on transcriptional regulation of stress-responsive genes in salt-stressed seedlings of an aromatic rice cultivar. **Plant Gene** September; 11: 133-142
18. Aditya Banerjee, **Aryadeep Roychoudhury*** (2017) Epigenetic regulation during salinity and drought stress in plants: Histone modifications and DNA methylation. **Plant Gene** September; 11: 199-204
19. Puja Ghosh, **Aryadeep Roychoudhury*** (2018) Differential levels of metabolites and enzymes related to aroma formation in aromatic indica rice varieties: comparison with non-aromatic varieties. **3 Biotech** January; 8: 25
20. Aditya Banerjee, **Aryadeep Roychoudhury*** (2018) The gymnastics of epigenomics in rice. **Plant Cell Reports** January; 37:25-49
21. Aditya Banerjee, **Aryadeep Roychoudhury*** (2018) Strigolactones: multi-level regulation of biosynthesis and diverse responses in plant abiotic stresses. **Acta Physiologiae Plantarum** May; 40: 86
22. Saikat Paul, **Aryadeep Roychoudhury*** (2018) Transcriptome profiling of abiotic stress-responsive genes during cadmium chloride-mediated stress in two indica rice varieties. **Journal of Plant Growth Regulation** June; 37: 657-667
23. Aditya Banerjee, Durgesh Kumar Tripathi, **Aryadeep Roychoudhury*** (2018) Hydrogen sulphide trapeze: Environmental stress amelioration and phytohormone crosstalk. **Plant Physiology and Biochemistry** August; 132: 46-53
24. Aditya Banerjee, **Aryadeep Roychoudhury*** (2018) Interactions of Brassinosteroids with Major Phytohormones: Antagonistic Effects. **Journal of Plant Growth Regulation** December; 37: 1025-1032
25. A. Banerjee, **A. Roychoudhury*** (2019) Fluorine: a biohazardous agent for plants and phytoremediation strategies for its removal from the environment. **Biologia Plantarum** January; 63: 104-112
26. Aditya Banerjee, Durgesh Kumar Tripathi, **Aryadeep Roychoudhury*** (2019) The Karrikin 'Calisthenics': Can Compounds Derived from Smoke Help in Stress Tolerance? **Physiologia Plantarum** February; 165: 290-302
27. Saikat Paul, **Aryadeep Roychoudhury*** (2019) Comparative Analyses of Regeneration

Potentiality of Eight Indigenous Aromatic Indica rice (*Oryza sativa* L.) Varieties. **International Journal of Scientific Research in Biological Sciences** February; 6: 55-64

28. Aditya Banerjee, **Aryadeep Roychoudhury*** (2019) Structural introspection of a putative fluoride transporter in plants. **3 Biotech** March; 9: 103

29. Saikat Paul, **Aryadeep Roychoudhury*** (2019) Transcript analysis of abscisic acid-inducible genes in response to different abiotic disturbances in two indica rice varieties. **Theoretical and Experimental Plant Physiology** March; 31: 249-272

30. Saikat Paul, **Aryadeep Roychoudhury*** (2019) Comparative Analysis of the Expression of Candidate Genes Governing Salt Tolerance and Yield Attributes in Two Contrasting Rice Genotypes, Encountering Salt Stress During Grain Development. **Journal of Plant Growth Regulation** June; 38: 539–556

31. Aditya Banerjee, **Aryadeep Roychoudhury***, Puja Ghosh (2019) Differential fluoride uptake induces variable physiological damage in a non-aromatic and an aromatic indica rice cultivar. **Plant Physiology and Biochemistry** June; 142: 143–150

32. Mirza Hasanuzzaman, Aditya Banerjee, M. H. M. Borhannuddin Bhuyan, **Aryadeep Roychoudhury***, Jubayer Al Mahmud, Masayuki Fujita (2019) Targeting Glycinebetaine for Abiotic Stress Tolerance in Crop Plants: Physiological Mechanism, Molecular Interaction and Signaling. **Phyton, International Journal of Experimental Botany** August; 88 (3): 185-221

33. Aditya Banerjee, **Aryadeep Roychoudhury*** (2019) Differential regulation of defence pathways in aromatic and non-aromatic indica rice cultivars towards fluoride toxicity. **Plant Cell Reports** October; 38:1217–1233

34. Aditya Banerjee, **Aryadeep Roychoudhury*** (2019) Melatonin application reduces fluoride uptake and toxicity in rice seedlings by altering abscisic acid, gibberellin, auxin and antioxidant homeostasis. **Plant Physiology and Biochemistry** December; 145: 164-173

35. Aditya Banerjee, Ankur Singh, **Aryadeep Roychoudhury*** (2019) Spermidine application reduces fluoride uptake and ameliorates physiological injuries in a susceptible rice cultivar by activating diverse regulators of the defense machinery. **Environmental Science and Pollution Research** December; 26: 36598–36614

36. Aditya Banerjee, Santanu Samanta, **Aryadeep Roychoudhury*** (2020) Spermine ameliorates prolonged fluoride toxicity in soil-grown rice seedlings by activating the antioxidant machinery and glyoxalase system. **Ecotoxicology and Environmental Safety** February; 189:109737

37. Saikat Paul, **Aryadeep Roychoudhury*** (2020) Regulation of physiological aspects in plants by hydrogen sulfide and nitric oxide under challenging environment. **Physiologia Plantarum** February; 168: 374-393

38. Aditya Banerjee, Puja Ghosh, **Aryadeep Roychoudhury*** (2020) Differential regulation of genes co-involved in aroma production and stress amelioration during salt acclimation in indica rice

cultivars. **Biologia** April; 75: 495–506

39. Aditya Banerjee, Santanu Samanta, Ankur Singh, **Aryadeep Roychoudhury*** (2020) Deciphering the molecular mechanism behind stimulated co-uptake of arsenic and fluoride from soil, associated toxicity, defence and glyoxalase machineries in arsenic-tolerant rice. **Journal of Hazardous Materials** May; 390: 121978
40. Ankur Singh, Aditya Banerjee, **Aryadeep Roychoudhury*** (2020) Seed priming with calcium compounds abrogate fluoride-induced oxidative stress by up regulating defence pathways in an indica rice variety. **Protoplasma** May; 257: 767–782
41. Puja Ghosh, **Aryadeep Roychoudhury*** (2020) Differential regulation of genes associated with aroma production in indica rice cultivars during grain developmental stages. **Vegetos** June; 33: 313-322
42. Aditya Banerjee, **Aryadeep Roychoudhury*** (2020) Gibberellic acid-priming promotes fluoride tolerance in a susceptible indica rice cultivar by regulating the antioxidant and phytohormone homeostasis. **Journal of Plant Growth Regulation** 39:1476–1487
43. Moumita Ganguly, **Aryadeep Roychoudhury**, Dibyendu N. Sengupta, Swapan K. Datta, KarabiDatta (2020) Independent overexpression of *OsRab16A* and *AtDREB1A* exhibit enhanced drought tolerance in transgenic aromatic rice variety Pusa Sugandhi 2. **Journal of Plant Biochemistry and Biotechnology** September; 29: 503–517
44. Ankur Singh, **Aryadeep Roychoudhury*** (2020) Silicon-regulated antioxidant and osmolyte defense and methylglyoxal detoxification functions co-ordinately in attenuating fluoride toxicity and conferring protection to rice seedlings. **Plant Physiology and Biochemistry** September; 154: 758-769
45. Ankur Singh, Aditya Banerjee, **Aryadeep Roychoudhury*** (2020) Alleviation of Fluoride-Mediated Toxicity via Seed Priming with Calcium Oxide in *Oryza sativa* L. cv. Khitish. **Science and Culture** September-October; 86: 317-321
46. Santanu Samanta, Ankur Singh, Aditya Banerjee, **Aryadeep Roychoudhury*** (2020) Exogenous supplementation of melatonin alters representative organic acids and enzymes of respiratory cycle as well as sugar metabolism during arsenic stress in two contrasting indica rice cultivars. **Journal of Biotechnology** December; 324: 220-232
47. Aditya Banerjee, Ankur Singh, M. Sudarshan, **Aryadeep Roychoudhury*** (2021) Silicon nanoparticle-pulsing mitigates fluoride stress in rice by fine-tuning the ionic and metabolomic balance and refining agronomic traits. **Chemosphere** January; 262: 127826
48. Aditya Banerjee, Ankur Singh, **Aryadeep Roychoudhury*** (2020) *De novo* RNA-Seq analysis in sensitive rice cultivar and comparative transcript profiling in contrasting genotypes reveal genetic biomarkers for fluoride-stress response. **Environmental Pollution** December; 267: 115378
49. Aditya Banerjee, **Aryadeep Roychoudhury*** (2021) Differential lead-fluoride and nickel-fluoride uptake in co-polluted soil variably affects the overall physiome in an aromatic rice cultivar.

Environmental Pollution January; 268 (B): 115504

50. Santanu Samanta, Aditya Banerjee, **Aryadeep Roychoudhury*** (2021) Melatonin application differentially modulates the enzymes associated with antioxidative machinery and ascorbate glutathione cycle during arsenate exposure in indica rice varieties. **Plant Biology** 23 (S1): 193-201
51. Ankur Singh, **Aryadeep Roychoudhury***, Santanu Samanta, Aditya Banerjee (2021) Fluoride Stress-Mediated Regulation of Tricarboxylic Acid Cycle and Sugar Metabolism in Rice Seedlings in Absence and Presence of Exogenous Calcium. **Journal of Plant Growth Regulation** 40:1579–1593
52. Aditya Banerjee, Ankur Singh, **Aryadeep Roychoudhury*** (2021) Fluoride toxicity variably affects overall physiology and grain development in three contrasting rice genotypes, representing a potential biohazard. **Environmental Science and Pollution Research** 28: 40220–40232
53. Aditya Banerjee, Ankur Singh, **Aryadeep Roychoudhury*** (2021) Maghemite nano-fertilization promotes fluoride tolerance in rice by restoring grain yield and modulating the ionome and physiome. **Ecotoxicology and Environmental Safety** 215:112055
54. Anindita Paul, **Aryadeep Roychoudhury*** (2021) Go green to protect plants: repurposing the antimicrobial activity of biosynthesized silver nanoparticles to combat phytopathogens. **Nanotechnology for Environmental Engineering** 6:10
55. Supratim Basu, **Aryadeep Roychoudhury*** (2021) Transcript profiling of stress-responsive genes and metabolic changes during salinity in indica and japonica rice exhibit distinct varietal difference. **Physiologia Plantarum** 173: 1434-1447
56. Ankur Singh, Aditya Banerjee, **Aryadeep Roychoudhury*** (2021) Differential Responses of *Vigna radiata* and *Vigna mungo* to Fluoride-Induced Oxidative Stress and Amelioration via Exogenous Application of Sodium Nitroprusside. **Journal of Plant Growth Regulation** 40: 2342-2357
57. **Aryadeep Roychoudhury***, Ankur Singh, Tariq Aftab, Poulomi Ghosal, Nilanjana Banik (2021) Seedling Priming with Sodium Nitroprusside Rescues *Vigna radiata* from Salinity Stress-Induced Oxidative Damages. **Journal of Plant Growth Regulation** 40: 2454-2464
58. Puja Ghosh, **Aryadeep Roychoudhury*** (2020) Nutrition and antioxidant profiling in the unpolished and polished grains of eleven indigenous aromatic rice cultivars. **3Biotech** 10(12):548
59. Roel Rabara, Joseph Msanne, Supratim Basu, Marilyn Ferrer, **Aryadeep Roychoudhury*** (2021) Coping with inclement weather conditions due to high temperature and water deficit in rice: An insight from genetic and biochemical perspectives. **Physiologia Plantarum** 172: 487- 504
60. Ankur Singh, **Aryadeep Roychoudhury*** (2023) Salicylic acid-mediated alleviation of fluoride toxicity in rice by restricting fluoride bioaccumulation and strengthening the osmolyte, antioxidant and glyoxalase systems. **Environmental Science and Pollution Research** 30: 25024–25036
61. Ankur Singh, **Aryadeep Roychoudhury*** (2023) Abscisic acid in plants under abiotic stress:

- crosstalk with major phytohormones. **Plant Cell Reports** June; 42: 961-974
- 62.** Aditya Banerjee, **Aryadeep Roychoudhury*** (2021) Fluoride-induced toxicity is ameliorated in a susceptible indica rice cultivar by exogenous application of the nitric oxide donor, sodium nitroprusside. **Vegetos** 34: 568-580
- 63.** Aditya Banerjee, **Aryadeep Roychoudhury*** (2021) Functional and molecular characterization of fluoride exporter (FEX) from rice and its constitutive overexpression in *Nicotiana benthamiana* to promote fluoride tolerance. **Plant Cell Reports** 40: 1751-1772
- 64.** Santanu Samanta, Aditya Banerjee, **Aryadeep Roychoudhury*** (2021) Exogenous melatonin regulates endogenous phytohormone homeostasis and thiol-mediated detoxification in two indica rice cultivars under arsenic stress. **Plant Cell Reports** 40: 1585-1602
- 65.** Ankur Singh, **Aryadeep Roychoudhury*** (2021) Gene regulation at transcriptional and post transcriptional levels to combat salt stress in plants. **Physiologia Plantarum** 173: 1556-1572
- 66.** Santanu Samanta, Aditya Banerjee, **Aryadeep Roychoudhury*** (2022) Arsenic Toxicity is Counteracted by Exogenous Application of Melatonin to Different Extents in Arsenic-susceptible and Arsenic-tolerant Rice Cultivars. **Journal of Plant Growth Regulation** 41: 2210–2231
- 67.** Santanu Samanta, **Aryadeep Roychoudhury*** (2021) Recent trend in nanoparticle research in regulating arsenic bioaccumulation and mitigating arsenic toxicity in plant species. **Journal of Plant Biochemistry and Biotechnology** 30: 793–812
- 68.** Tariq Aftab, **Aryadeep Roychoudhury** (2021) Cross talk among plant growth regulators and signaling molecules during biotic and abiotic stresses: molecular responses and signaling pathways. **Plant Cell Reports** 40: 2017–2019
- 69.** **Aryadeep Roychoudhury***, Tariq Aftab (2021) Phytohormones, plant growth regulators and signaling molecules: cross-talk and stress responses. **Plant Cell Reports** 40: 1301-1303
- 70.** Aditya Banerjee, **Aryadeep Roychoudhury*** (2022) Explicating the cross-talks between nanoparticles, signaling pathways and nutrient homeostasis during environmental stresses and xenobiotic toxicity for sustainable cultivation of cereals. **Chemosphere** 286: 131827
- 71.** Ankur Singh, Aditya Banerjee, **Aryadeep Roychoudhury*** (2022) Fluoride tolerance in rice is negatively regulated by the 'stress phytohormone' abscisic acid (ABA), but promoted by ABA-antagonist growth regulators, melatonin, and gibberellic acid. **Protoplasma** 259:1331-1350
- 72.** Aditya Banerjee, **Aryadeep Roychoudhury*** (2022) Dissecting the phytohormonal, genomic and proteomic regulation of micronutrient deficiency during abiotic stresses in plants. **Biologia** 77: 3037–3058
- 73.** Aditya Banerjee, **Aryadeep Roychoudhury*** (2022) Rhizofiltration of combined arsenic-fluoride or lead-fluoride polluted water using common aquatic plants and use of the 'clean' water for alleviating combined xenobiotic toxicity in a sensitive rice variety. **Environmental Pollution** 304:119128

74. Ankur Singh, **Aryadeep Roychoudhury*** (2023) Differential transcriptome and metabolite profile with variable fluoride tolerance and altered genomic template stability in the identification of four fluoride-tolerant or fluoride-sensitive rice cultivars. **Plant Stress** 10:100249
75. Aditya Banerjee, **Aryadeep Roychoudhury*** (2022) Assessing the rhizofiltration potential of three aquatic plants exposed to fluoride and multiple heavy metal polluted water. **Vegetos** 35:1158–1164
76. Santanu Samanta, Aditya Banerjee, **Aryadeep Roychoudhury*** (2022) Regulatory Role of Exogenous Melatonin in Maintaining Mineral Nutrient Homeostasis in rice (*Oryza sativa* L.) During Arsenic Stress. **Science and Culture** 88 (7–8): 275-280
77. Swarnavo Chakraborty, Ankur Singh, **Aryadeep Roychoudhury*** (2022) Extensive cross-talk among stress-regulated protective metabolites, biogenic-amines and phytohormone-signalling, co-ordinated by dopamine-mediated seed-priming, governs tolerance against fluoride stress in rice. **Plant Cell Reports** 41: 2261–2278
78. Swarnavo Chakraborty, Ankur Singh, **Aryadeep Roychoudhury*** (2022) Biogenic nanoparticles and generation of abiotic stress-resilient plants: A new approach for sustainable agriculture. **Plant Stress** 6: 100117
79. Swarnavo Chakraborty, **Aryadeep Roychoudhury*** (2022) Functional regulation of *Responsive to abscisic acid (Rab)* genes from representative plant species and their stress response. **Plant Physiology Reports** 27:653–664
80. Ankur Singh, **Aryadeep Roychoudhury*** (2023) Fluoride Toxicity Imposes Differential Reprogramming of the Representative Intermediates and Enzymes Belonging to Nitrogen Metabolism in Two indica Rice Varieties, Varying in their Pattern of Fluoride Stress Response. **Journal of Plant Growth Regulation** 42: 6091–6103
82. Ankur Singh, **Aryadeep Roychoudhury*** (2023) Deciphering the biochemical regulation of metabolic pathways in abating stress-induced damages during co-exposure of arsenic and fluoride in a non-aromatic and an aromatic rice variety. **Physiology and Molecular Biology of Plants** 29: 1475 - 1484
83. Ankur Singh, Swarnavo Chakraborty, **Aryadeep Roychoudhury*** (2023) Activated charcoal alleviates fluoride stress by restricting fluoride uptake and counteracting oxidative damages in the rice cultivar MTU1010. **Turkish Journal of Botany** 47: 97-110
84. Ankur Singh, **Aryadeep Roychoudhury*** (2023) Differential transcriptome and metabolite profile with variable fluoride tolerance and altered genomic template stability in the identification of four fluoride-tolerant or fluoride-sensitive rice cultivars. **Plant Stress** 10: 100249
85. Ankur Singh, **Aryadeep Roychoudhury*** (2023) Abscisic acid in plants under abiotic stress: crosstalk with major phytohormones. **Plant Cell Reports** 42: 961-974

86. Santanu Samanta, **Aryadeep Roychoudhury*** (2023) Crosstalk of melatonin with major phytohormones and growth regulators in mediating abiotic stress tolerance in plants. **South African Journal of Botany** 163: 201-216
87. Aditya Banerjee, **Aryadeep Roychoudhury*** (2023) Bio-priming with a Novel Plant Growth-Promoting *Acinetobacter indicus* Strain Alleviates Arsenic-Fluoride Co-toxicity in Rice by Modulating the Physiome and Micronutrient Homeostasis. **Applied Biochemistry and Biotechnology** 195: 6441–6464
88. Puja Ghosh, **Aryadeep Roychoudhury*** (2024) Plant Peptides Involved in Abiotic and Biotic Stress Responses and Reactive Oxygen Species (ROS) Signaling. **Journal of Plant Growth Regulation** 43:1410–1427
89. Santanu Samanta, Chandra Sekhar Seth, **Aryadeep Roychoudhury*** (2024) The molecular paradigm of reactive oxygen species (ROS) and reactive nitrogen species (RNS) with different phytohormone signaling pathways during drought stress in plants. **Plant Physiology and Biochemistry** 206: 108259
90. Puja Ghosh, **Aryadeep Roychoudhury*** (2024) Molecular basis of salicylic acid-phytohormone crosstalk in regulating stress tolerance in plants. **Brazilian Journal of Botany** doi.org/10.1007/s40415-024-00983-3

*Corresponding author

GENERAL/POPULAR ARTICLES:

1. Aditya Banerjee, **Aryadeep Roychoudhury*** (2014) Metabolic engineering of lipids in plants. **Journal of Plant Science & Research** November; 1:112
2. S. Krishnamoorthi, Aditya Banerjee, **Aryadeep Roychoudhury*** (2015) Immobilized enzyme technology: potentiality and prospects. **Journal of Enzymology and Metabolism** October; 1: 104
3. **Aryadeep Roychoudhury*** (2020) 'Desert locust': a menace to Indian agriculture and economy. **Young Scientist - Tomorrow's Science Begins Today** June; 4: 14-20
4. **Aryadeep Roychoudhury*** (2020) Silicon-Nanoparticles in Crop Improvement and Agriculture. **International Journal on Recent Advancement in Biotechnology & Nanotechnology** July; 3: 54-65
5. **Aryadeep Roychoudhury*** (2020) Multifaceted Clinical and Therapeutic Potential of Omega-3 Fatty Acids in Humans. **International Journal of Recent Advances in Medical & Pharma Research** July; 3: 11-22
6. **Aryadeep Roychoudhury*** (2020) Neurotransmitter Acetylcholine Comes to the Plant Rescue. **Journal of Molecular and Cellular Biology Forecast** July; 3:1019
7. **Aryadeep Roychoudhury*** (2020) Nanobiologics: New Generation Transfection System for Animals and Plants. **Journal of Molecular and Cellular Biology Forecast** July; 3:1020
8. **Aryadeep Roychoudhury*** (2020) Next Generation Sequencing: Prospects in Plant Breeding and

Crop Improvement. **SF Journal of Agricultural and Crop Management** July; 1: 1004

9. **Aryadeep Roychoudhury* (2020)** Agronomic and Genetic Biofortification of Rice Grains with Microelements to Assure Human Nutritional Security. **SF Journal of Agricultural and Crop Management** July; 1: 1005

10. **Aryadeep Roychoudhury* (2020)** Convalescent Plasma Therapy: Solution to COVID-19? **SF Journal of Medicine and Research** July; 1:1011

11. **Aryadeep Roychoudhury* (2020)** Global Warming and Methane Emissions: Some Recent Case Reports. **SF Journal of Biotechnology and Biomedical Engineering** July; 3: 1011

12. **Aryadeep Roychoudhury***, Rituparna Bhowmik **(2020)** Health Benefits of Plant-Derived Bioactive Secondary Metabolites as Dietary Constituents. **SF Journal of Clinical Pharmacology Research** August; 2: 1002.

13. **Aryadeep Roychoudhury* (2020)** Edible Vaccines and Oral Immunization against Viruses: Prospects, Promises and Pitfalls. **SF Journal of Medicine and Research** September; 1: 1012.

14. **Aryadeep Roychoudhury* (2020)** Bioactive Quorum Quenchers Antagonizing *Pseudomonas Aeruginosa* Biofilm. **International Journal on Current Trends in Drug Development & Industrial Pharmacy** September; 4(1): 29-45.

15. **Aryadeep Roychoudhury* (2020)** Yeast-mediated Green Synthesis of Nanoparticles for Biological Applications. **Indian Journal of Pharmaceutical and Biological Research** September; 8(3): 26-31

16. **Aryadeep Roychoudhury* (2021)** Organ donation: Moral ethics and human values. **Adhyatma: A Journal of Management, Spirituality, and Human Values**. January-June; 5(1): 7-14

17. **Aryadeep Roychoudhury* (2021)** Potential of soil-resident bacterial species in counteracting arsenic toxicity. **International Journal of Research in Engineering and Science (IJRES)** July; 9(7): 24-29

18. **Aryadeep Roychoudhury* (2021)** Trehalose in osmotic stress tolerance of plants. **Bioingene PSJ** July; 1(2): 1-11; Article D05MGY21R63

19. **Aryadeep Roychoudhury* (2021)** Involvement of heat shock proteins in plant tolerance against metal/metalloid toxicity. **International Journal of Multidisciplinary Research and Growth Evaluation** July-August 2(4): 255-261

20. **Aryadeep Roychoudhury* (2021)** Ripening Inhibitor (RIN): A master switch in the molecular regulation of ethylene-dependent climacteric fruit ripening. **International Journal of Recent Innovation in Food Science & Nutrition** 4(1)

21. **Aryadeep Roychoudhury* (2021)** Mushrooms as Medicinal and Therapeutic Agents. **International Journal on Current Trends in Drug Development & Industrial Pharmacy** 5(1): 3-12

22. **Aryadeep Roychoudhury* (2021)** Metabolic Engineering of Water-Soluble Vitamins in Plants for Enhanced Nutrition. **International Journal on Recent Advancement in Biotechnology &**

Nanotechnology 4(1): 1-10

23. Aryadeep Roychoudhury* (2021) Multifaceted Roles of Serotonin in Plants. **Young Scientist-Tomorrow's Science Begins Today** 5(1): 26-35

24. Aryadeep Roychoudhury* (2021) New Education Policy in India: Propositions and promises in higher education. **Bioingene PSJ** 1(3): 1-7; Article D8MHY21R86

25. Aryadeep Roychoudhury* (2021) Ethical Issues of Sperm Donation as Component of Assisted Reproductive Technology. **Global Journal of Transformation in Law, Human Rights and Social Justice** 5: 11-17

26. Aryadeep Roychoudhury* (2021) Potentiality of RNA Interference Technology in Enhancing the Nutritional Status and Food Value of Plant Species. **Journal of Agriculture & Forestry Research** 1: 13-26

27. Aryadeep Roychoudhury*, Shreyosi Pahari, Supratim Banerjee (2024) Biopolymer Production by Natural And Engineered Microbes. **International Journal of Research in Engineering and Science** 12: 438-459

*Corresponding author

BOOKS EDITED:

1. Molecular Plant Abiotic Stress, ISBN: 978-1-119-46369-6, **John Wiley & Sons Ltd, Hoboken, New Jersey, 2019**

2. Protective Chemical Agents in the Amelioration of Plant Abiotic Stress: Biochemical and Molecular Perspectives, ISBN: 978-1-119-55164-5, **John Wiley & Sons Ltd, Hoboken, United States, 2020**

3. Rice Research for Quality Improvement: Genomics and Genetic Engineering, Volume 1: Breeding Techniques and Abiotic Stress Tolerance, ISBN: 978-981-15-4119-3, **Springer Nature Singapore, 2020**

4. Rice Research for Quality Improvement: Genomics and Genetic Engineering, Volume 2: Nutrient Biofortification and Herbicide and Biotic Stress Resistance in Rice, ISBN: 978-981-15-5336-3, **Springer Nature Singapore, 2020**

5. Metal and Nutrient Transporters in Abiotic Stress, ISBN: 978-0-12-817955-0, **Academic Press (Elsevier), 2021**

6. Transporters and Plant Osmotic Stress, ISBN: 9780128179581, **Academic Press (Elsevier), 2021**

7. Plant Perspectives to Global Climate Changes, ISBN: 9780323856652, **Academic Press (Elsevier), 2021**

8. Omics Approach to Manage Abiotic Stress in Cereals, ISBN: 978-981-19-0140-9, **Springer Nature Singapore, 2022**

9. Photosynthesis and Respiratory Cycles during Environmental Stress Response in Plants,

ISBN: 9781003315162, **Apple Academic Press (CRC press, Taylor and Francis group), 2023**

10. Biology and Biotechnology of environmental stress tolerance in plants Volume 1: Secondary Metabolites in Environmental Stress Tolerance, ISBN: 9781774912836, **Apple Academic Press (CRC press, Taylor and Francis group), 2023**

11. Biology and Biotechnology of environmental stress tolerance in plants Volume 2: Trace elements in environmental stress tolerance. ISBN: 9781000797824, **Apple Academic Press (CRC press, Taylor and Francis group), 2023**

12. Biology and Biotechnology of environmental stress tolerance in plants Volume 3: Sustainable Approaches for Enhancing Environmental Stress Tolerance. ISBN: 9781774912874, **Apple Academic Press (CRC press, Taylor and Francis group), 2023**

13. Emerging Technologies to Combat Biotic Stress in Crop Plants and Food Security. ISBN: 9798891130791, **Nova Science Publishers, 2023**

14. Advancement of Melatonin Research in Plants Multi-Faceted Role in Regulating Development and Stress Protection. ISBN: 9781032381558 **CRC Press (Taylor and Francis group), 2023**

15. Plant Proteomics Implications in Growth, Quality Improvement, and Stress Resilience. ISBN: 9781032395852, **CRC Press (Taylor and Francis group), 2023**

SPECIAL ISSUES EDITED:

1. **Guest Editor** of a Special issue “Abiotic stress tolerance in plants: growth regulators and transcriptional control of multiple signaling pathways” in the journal, Plant Gene Volume 11 Part B (Elsevier) in 2017.

2. **Guest Editor** of a Special issue “Innovations and Translational Dimensions in Agricultural and Environmental Biotechnology” in the journal, Plant Gene Volume 17 (Elsevier) in 2019.

3. **Guest Editor** of a Special issue “Phytohormones, plant growth regulators and signaling molecules: cross-talk and stress responses” in the journal, Plant Cell Reports Volumes 1 and 2 (Springer) in 2021

BOOK CHAPTERS:

1. **A. Roychoudhury**, Karabi Datta, S.K. Datta (**2011**) Abiotic stress in plants: From Genomics to Metabolomics. In: Tuteja N, Gill SS, Tuteja R (Eds.). Omics and Plant Abiotic Stress Tolerance, **Bentham Science Publishers**, Pp. 91-120

2. **Aryadeep Roychoudhury***, Supratim Basu (**2012**) Ascorbate-Glutathione and Plant Tolerance to Various Abiotic Stresses. In: Anjum NA, Umar S, Ahmad A (Eds.), Oxidative stress in plants: Causes, Consequences and Tolerance, **IK International Publishers**, New Delhi, Pp. 177-258

3. **Aryadeep Roychoudhury***, Anindita Paul (2012) Abscisic Acid-Inducible Genes during Salinity and Drought Stress. In: Berhardt LV. (Ed.), *Advances in Medicine and Biology*, Volume 51, **Nova Science Publishers**, New York, Pp. 1-78
4. **Aryadeep Roychoudhury***, Sreeparna Pradhan, Bodhisatwa Chaudhuri, Kaushik Das (2012) Phytoremediation of Toxic Metals and the Involvement of *Brassica* Species. In: Anjum NA, Pereira ME, Ahmad I, Duarte AC, Umar S, Khan NA (Eds.), *Phytotechnologies: Remediation of Environmental Contaminants*, **CRC press, Taylor and Francis Group**, Boca Raton, Pp. 219-251
5. **Aryadeep Roychoudhury***, Kaushik Das (2014) Functional Role of Polyamines and Polyamine-metabolizing Enzymes during Salinity, Drought and Cold Stresses. In: Anjum NA, Gill SS, Gill R (Eds.) *Plant Adaptation to Environmental Change: Significance of Amino acids and their derivatives*, **CAB International Publishers**, Nosworthy Way, Wallingford, Oxfordshire, UK, Pp. 141-156
6. **Aryadeep Roychoudhury***, Subhayu Nayek (2014) Structural Aspects and Functional Regulation of Late Embryogenesis Abundant (LEA) Genes and Proteins Conferring Abiotic Stress Tolerance in Plants. In: Ferro A (Ed.), *Abiotic Stress: Role in Sustainable Agriculture, Detrimental Effects and Management Strategies*, **Nova Science Publishers**, New York, Pp. 43-109
7. Aditya Banerjee, **Aryadeep Roychoudhury*** (2016) Plant Responses to Light Stress: Oxidative Damages, Photoprotection, and Role of Phytohormones. In: Ahammed GJ, Yu J-Q (Ed.) *Plant Hormones under Challenging Environmental Factors*, **Springer Publishers**, Pp. 181-213
8. Aditya Banerjee, **Aryadeep Roychoudhury*** (2017) Melatonin as a regulator of abiotic stress tolerance in plants. In: Singh VP, Singh S, Prasad SM (Ed.) *Mechanisms behind phytohormonal signaling and crop abiotic stress tolerance*, **Nova Science Publishers**, New York, Pp. 47-60
9. **Aryadeep Roychoudhury***, Aditya Banerjee (2017) Abscisic Acid Signaling and Involvement of Mitogen Activated Protein Kinases and Calcium-Dependent Protein Kinases During Plant Abiotic Stress. In: Pandey GK (Ed.) *Mechanism of Plant Hormone Signaling Under Stress (Vol. 1)*, **John Wiley & Sons, Inc.**, Hoboken, New Jersey, Pp. 197-241
10. Aditya Banerjee, **Aryadeep Roychoudhury*** (2017) Effect of Salinity Stress on Growth and Physiology of Medicinal Plants. In: Ghorbanpour M, Varma A (Ed.) *Medicinal Plants and Environmental Challenges*, **Springer International Publishing**, Pp. 177-188
11. Aditya Banerjee, **Aryadeep Roychoudhury*** (2017) Abiotic Stress, Generation of Reactive Oxygen Species, and Their Consequences: An Overview. In: Singh VP, Singh S, Tripathi DK, Prasad SM, Chauhan DK (Ed.) *Reactive Oxygen Species in Plants: Boon or Bane? Revisiting the Role of ROS*, First Edition, **John Wiley & Sons Ltd**, Pp. 23-50
12. Aditya Banerjee, **Aryadeep Roychoudhury*** (2018) Regulation of Photosynthesis Under Salinity and Drought Stress. In: Singh VP, Singh S, Singh R, Prasad SM (Ed.) *Environment and Photosynthesis: A Future Prospect*, **Studium Press, India**, Pp. 134-144
13. Aditya Banerjee, **Aryadeep Roychoudhury*** (2018) Small Heat Shock Proteins: Structural Assembly and Functional Responses Against Heat Stress in Plants. In: Ahmad P, Ahanger MA,

Singh VP, Tripathi DK, Alam P, Alyemeni MN (Ed.) Plant Metabolites and Regulation Under Environmental Stress, **Elsevier (Academic Press)**, Pp. 367-376

14. Aditya Banerjee, **Aryadeep Roychoudhury*** (2018) Role of Beneficial Trace Elements in Salt Stress Tolerance of Plants. In: Hasanuzzaman M, Fujita M, Oku H, Nahar K, Hawrylak-Nowak B (Ed.) Plant Nutrients and Abiotic Stress Tolerance, **Springer Nature** Singapore, Pp. 377-390

15. Aditya Banerjee, **Aryadeep Roychoudhury*** (2018) Seed Priming Technology in the Amelioration of Salinity Stress in Plants. In: Rakshit A, Singh HB (Ed.) Advances in Seed Priming, **Springer Nature** Singapore, Pp. 81-93

16. Saikat Paul, **Aryadeep Roychoudhury*** (2018) Transgenic Plants for Improved Salinity and Drought Tolerance. In: Gosal SS, Wani SH (Ed.) Biotechnologies of Crop Improvement, Vol. 2, **Springer International Publishing**, Pp. 141-181

17. Aditya Banerjee, **Aryadeep Roychoudhury*** (2018) Nanoparticle-Induced Ecotoxicological Risks in Aquatic Environments: Concepts and Controversies. In: Tripathi DK, Ahmad P, Sharma S, Chauhan DK, Dubey NK (Ed.) Nanomaterials in Plants, Algae, and Microorganisms Concepts and Controversies, Vol. 2, **Elsevier (Academic Press)**, Pp.129-141

18. Aditya Banerjee, **Aryadeep Roychoudhury*** (2018) Rice responses and tolerance to elevated ozone. In: Hasanuzzaman M, Fujita M, Nahar K, Biswas JK (Ed.) Advances in Rice Research for Abiotic Stress Tolerance, **Elsevier**, Pp. 399-411

19. Aditya Banerjee, **Aryadeep Roychoudhury*** (2018) Genetic Engineering in Plants for Enhancing Arsenic Tolerance. In: Prasad MNV (Ed.) Transgenic Plant Technology for Remediation of Toxic Metals and Metalloids, **Elsevier (Academic Press)**, Pp. 463-475

20. Aditya Banerjee, Puja Ghosh, **Aryadeep Roychoudhury*** (2018) Salt Stress Responses in Pigeon Pea (*Cajanus cajan* L.). In: Wani SH, Jain M (Ed.) Pulse Improvement Physiological, Molecular and Genetic Perspectives, **Springer Nature Switzerland**, Pp. 99-108

21. Jigeesha Mukhopadhyay, **Aryadeep Roychoudhury*** (2018) Cold-Induced Injuries and Signaling Responses in Plants. In: Wani SH, Herath V (Ed.) Cold Tolerance in Plants Physiological, Molecular and Genetic Perspectives, **Springer Nature Switzerland**, Pp. 1-35

22. Saikat Paul, Aditya Banerjee, **Aryadeep Roychoudhury***(2018) Role of Polyamines in Mediating Antioxidant Defense and Epigenetic Regulation in Plants Exposed to Heavy Metal Toxicity. In: Hasanuzzaman M, Nahar K, Fujita M (Ed.) Plants Under Metal and Metalloid Stress Responses, Tolerance and Remediation, **Springer Nature Singapore**, Pp. 229-247

23. Aditya Banerjee, **Aryadeep Roychoudhury*** (2019) The Regulatory Signaling of Gibberellin Metabolism and Its Crosstalk With Phytohormones in Response to Plant Abiotic Stresses. In: Khan M Iqbal R, Reddy PS, Ferrante A, Khan NA (Ed.) Plant Signaling Molecules, **Woodhead Publishing (Elsevier) United Kingdom**, Pp. 333-339

24. Aditya Banerjee, **Aryadeep Roychoudhury*** (2019) Biotechnological Production of Aromatic Oils from Plants. In: Malik S (Ed.) Essential Oil Research Trends in Biosynthesis, Analytics, Industrial

Applications and Biotechnological Production, **Springer Nature Switzerland**, Pp. 353-364

25. Aditya Banerjee, **Aryadeep Roychoudhury*** (2019) Role of Selenium in Plants Against Abiotic Stresses: Phenological and Molecular Aspects. In: Roychoudhury A, Tripathi DK (Ed.) Molecular Plant Abiotic Stress, **John Wiley & Sons Ltd**, Pp. 123-133

26. Prabal Das, Aditya Banerjee, **Aryadeep Roychoudhury*** (2019) Polyamines Ameliorate Oxidative Stress by Regulating Antioxidant Systems and Interacting with Plant Growth Regulators. In: Roychoudhury A, Tripathi DK (Ed.) Molecular Plant Abiotic Stress, **John Wiley & Sons Ltd**, Pp. 135-143

27. Aditya Banerjee, **Aryadeep Roychoudhury*** (2019) Role of Glutathione in Plant Abiotic Stress Tolerance. In: Hasanuzzaman M, Fotopoulos V, Nahar K, Fujita M (Ed.) Reactive Oxygen, Nitrogen and Sulfur Species in Plants, Volume 1, **John Wiley & Sons Ltd**, Pp. 159-172

28. Aditya Banerjee, **Aryadeep Roychoudhury*** (2019) Cold Stress and Photosynthesis. In: Ahmad P, Ahanger MA, Alyemeni MN, Alam P (Ed.) Photosynthesis, Productivity, and Environmental Stress, **John Wiley & Sons Ltd**, Pp. 27-37

29. Aditya Banerjee, **Aryadeep Roychoudhury*** (2019) Abiotic Stress Tolerance in Plants by Priming and Pretreatment with Hydrogen Peroxide. In: Hasanuzzaman M, Fotopoulos V (Ed.) Priming and Pretreatment of Seeds and Seedlings, **Springer Nature Singapore**, Pp. 417-426

30. Aditya Banerjee, **Aryadeep Roychoudhury*** (2020) Seed Priming as a Method to Generate Heat-stress Tolerance in Plants: A Minireview. In: Wani SH, Kumar V (Ed.) Heat Stress Tolerance in Plants Physiological, Molecular and Genetic Perspectives, **John Wiley & Sons Ltd**, Pp. 23-32

31. **Aryadeep Roychoudhury***, S. Krishnamoorthi, Rupam Paul (2020) Arsenic Toxicity and Molecular Mechanism of Arsenic Tolerance in Different Members of Brassicaceae. In: Wani SH, Thakur AK, Khan YJ (Ed.) *Brassica* Improvement, **Springer Nature Switzerland**, Pp. 159-186

32. Aditya Banerjee, **Aryadeep Roychoudhury*** (2020) The role of aquaporins during plant abiotic stress responses. In: Tripathi DK, Singh VP, Chauhan DK, Sharma S, Prasad SM, Dubey NK, Ramawat N (Ed.) Plant Life Under Changing Environment Responses and Management, **Elsevier Academic Press**, Pp. 643-661

33. Murat Dikilitas, Eray Simsek, **Aryadeep Roychoudhury** (2020) Role of Proline and Glycine Betaine in Overcoming Abiotic Stresses. In: Roychoudhury A, Tripathi DK (Ed.) Protective Chemical Agents in the Amelioration of Plant Abiotic Stress: Biochemical and Molecular Perspectives, **John Wiley & Sons Ltd**, Pp. 1-23

34. Santanu Samanta, Ankur Singh, **Aryadeep Roychoudhury*** (2020) Involvement of Sulfur in the Regulation of Abiotic Stress Tolerance in Plants. In: Roychoudhury A, Tripathi DK (Ed.) Protective Chemical Agents in the Amelioration of Plant Abiotic Stress: Biochemical and Molecular Perspectives, **John Wiley & Sons Ltd**, Pp. 437-466

35. Murat Dikilitas, Eray Simsek, **Aryadeep Roychoudhury*** (2020) Modulation of Abiotic Stress Tolerance Through Hydrogen Peroxide. In: Roychoudhury A, Tripathi DK (Ed.) Protective Chemical

Agents in the Amelioration of Plant Abiotic Stress: Biochemical and Molecular Perspectives, **John Wiley & Sons Ltd**, Pp. 147-173

36. Saket Chandra, **Aryadeep Roychoudhury*** (2020) Penconazole, Paclobutrazol, and Triacantanol in Overcoming Environmental Stress in Plants. In: Roychoudhury A, Tripathi DK (Ed.) Protective Chemical Agents in the Amelioration of Plant Abiotic Stress: Biochemical and Molecular Perspectives, **John Wiley & Sons Ltd**, Pp. 510-534

37. Ankur Singh, **Aryadeep Roychoudhury*** (2020) Role of γ -Aminobutyric Acid in the Mitigation of Abiotic Stress in Plants. In: Roychoudhury A, Tripathi DK (Ed.) Protective Chemical Agents in the Amelioration of Plant Abiotic Stress: Biochemical and Molecular Perspectives, **John Wiley & Sons Ltd**, Pp. 413-423

38. Aditya Banerjee, **Aryadeep Roychoudhury*** (2020) Oxylipins and Strobilurins as Protective Chemical Agents to Generate Abiotic Stress Tolerance in Plants. In: Roychoudhury A, Tripathi DK (Ed.) Protective Chemical Agents in the Amelioration of Plant Abiotic Stress: Biochemical and Molecular Perspectives, **John Wiley & Sons Ltd**, Pp. 483-490

39. Saket Chandra, **Aryadeep Roychoudhury (2020)** Role of Selenium and Manganese in Mitigating Oxidative Damages. In: Roychoudhury A, Tripathi DK (Ed.) Protective Chemical Agents in the Amelioration of Plant Abiotic Stress: Biochemical and Molecular Perspectives, **John Wiley & Sons Ltd**, Pp. 597-621

40. Insha Amin, Aditya Banerjee, Abbu Zaid, Mudasir A. Mir, Shabir H. Wani, Nazeer Ahmed, **Aryadeep Roychoudhury***, Khalid Z. Masoodi (2020) Spectrum of Physiological and Molecular Responses in Plant Salinity Stress Tolerance. In: Khan MIR, Singh A, Poór P (Ed.) Improving Abiotic Stress Tolerance in Plants. **CRC Press** (Taylor & Francis Group), Boca Raton, Pp. 1-11

41. Aditya Banerjee, **Aryadeep Roychoudhury*** (2020) High-Throughput Genomics. In: Khan MIR, Singh A, Poór P (Ed.) Improving Abiotic Stress Tolerance in Plants. **CRC Press** (Taylor & Francis Group), Boca Raton, Pp. 309-316

42. Aditya Banerjee, **Aryadeep Roychoudhury*** (2020) Regulation of inducible promoters during salinity stress in plants In: Wani SH (Ed.) Transcription Factors for Abiotic Stress Tolerance in Plants. **Elsevier Academic Press**, Pp. 111-122

43. Aditya Banerjee, **Aryadeep Roychoudhury***(2020) Plant Responses to Environmental Nickel Toxicity. In: Aftab T, Hakeem KR (Ed.) Plant Micronutrients, **Springer Nature Switzerland**, Pp. 101-111

44. Saket Chandra, Aditya Banerjee, **Aryadeep Roychoudhury*** (2020) Quantitative Trait Loci for Rice Grain Quality Improvement. In: Roychoudhury A (Ed.) Rice Research for Quality Improvement: Genomics and Genetic Engineering (Volume 2), **Springer Nature Singapore Pte Ltd**, Pp. 687-697

45. Puja Ghosh, **Aryadeep Roychoudhury*** (2020) Aromatic Rice: Biochemical and Molecular Basis of Aroma Production and Stress Response. In: Roychoudhury A (Ed.) Rice Research for Quality Improvement: Genomics and Genetic Engineering (Volume 2), **Springer Nature Singapore Pte**

Ltd, Pp. 373-408

46. **Aryadeep Roychoudhury***, Rituparna Bhowmik (2020) Genetic Engineering of Rice to Fortify Micronutrients. In: Roychoudhury A (Ed.) Rice Research for Quality Improvement: Genomics and Genetic Engineering (Volume 2), **Springer Nature Singapore Pte Ltd**, Pp. 563-579
47. Santanu Samanta, **Aryadeep Roychoudhury*** (2021) Transporters involved in arsenic uptake, translocation and efflux in plants. In: Roychoudhury A, Tripathi DK, Deshmukh R (Ed.) Metal and Nutrient Transporters in Abiotic Stress, **Academic Press (Elsevier)**, Pp. 77-86
48. **Aryadeep Roychoudhury***, Swarnavo Chakraborty (2021) Cobalt and molybdenum transport in plants. In: Roychoudhury A, Tripathi DK, Deshmukh R (Ed.) Metal and Nutrient Transporters in Abiotic Stress, **Academic Press (Elsevier)**, Pp. 199-211
49. Ankur Singh, **Aryadeep Roychoudhury*** (2021) Silicon transporters in plants. In: Roychoudhury A, Tripathi DK, Deshmukh R (Ed.) Metal and Nutrient Transporters in Abiotic Stress, **Academic Press (Elsevier)**, Pp.133-143
50. Aditya Banerjee, **Aryadeep Roychoudhury*** (2020) Deciphering the Roles of Protein Phosphatases in the Regulation of Salt-Induced Signaling Responses in Plants. In: Pandey G (Ed.), Protein Phosphatases and Stress Management in Plants, **Springer Nature Switzerland**, Pp. 149-162
51. **Aryadeep Roychoudhury***, Swarnavo Chakraborty (2020) Cellular and Molecular Phytotoxicity of Lead and Mercury, Faisal M et al. (Ed.), Cellular and Molecular Phytotoxicity of Heavy Metals, **Springer Nature Switzerland**, Pp. 373-387
52. Ankur Singh, **Aryadeep Roychoudhury*** (2020) Genetic Engineering: A Powerful Tool to Abrogate the Effect of Metal/Metalloid Toxicity in Rice. In: Roychoudhury A (Ed.), Rice Research for Quality Improvement: Genomics and Genetic Engineering Volume 1, **Springer Nature Singapore Pte Ltd**, Pp. 373-384
53. Aditya Banerjee, **Aryadeep Roychoudhury*** (2020) Physiological and Genetic Basis of Submergence Tolerance in Rice, In: Roychoudhury A (Ed.), Rice Research for Quality Improvement: Genomics and Genetic Engineering Volume 1, **Springer Nature Singapore Pte Ltd**, Pp. 399-406
54. Aditya Banerjee, **Aryadeep Roychoudhury*** (2020) Rice Grain Quality and Abiotic Stress: Genomics and Biotechnological Perspectives, In: Roychoudhury A (Ed.), Rice Research for Quality Improvement: Genomics and Genetic Engineering Volume 1, **Springer Nature Singapore Pte Ltd**, Pp. 747-752
55. Ankur Singh, Bodhisatwa Chaudhuri, **Aryadeep Roychoudhury*** (2020) Influence of Night Temperature on Rice Yield and Quality, In: Roychoudhury A (Ed.), Rice Research for Quality Improvement: Genomics and Genetic Engineering Volume 1, **Springer Nature Singapore Pte Ltd**, Pp. 579-590
56. Ankur Singh, **Aryadeep Roychoudhury*** (2021) Cytokinin-Mediated Signalling During Environmental Stress in Plants. In: Aftab T, Hakeem K (Ed.), Plant Growth Regulators, **Springer**

Nature Switzerland. Pp. 133-151

57. Aditya Banerjee, **Aryadeep Roychoudhury*** (2021) Roles of Hydrogen Sulfide in Regulating Temperature Stress Response in Plants. In: Aftab T, Hakeem K (Ed.), Plant Growth Regulators, **Springer Nature Switzerland.** Pp. 207-215

58. **Aryadeep Roychoudhury***, Rituparna Bhowmik (2021) State-of-the-Art Technologies for Improving the Quality of Medicinal and Aromatic Plants. In: Aftab T, Hakeem K (Ed.), Medicinal and Aromatic Plants, **Springer Nature Switzerland,** Pp. 593-627

59. **Aryadeep Roychoudhury***, Rituparna Bhowmik (2021) Understanding the Mechanistic Functioning of Bioactive Compounds in Medicinal Plants. In: Aftab T, Hakeem K (Ed.), Medicinal and Aromatic Plants, **Springer Nature Switzerland,** Pp. 159-184

60. **Aryadeep Roychoudhury***, Swarnavo Chakraborty (2021) Molecular basis of plant-microbe interaction in remediating pesticides. In: Hasanuzzaman M, Prasad MNV (Ed.), Handbook of Bioremediation, **Academic Press (Elsevier),** Pp. 639-647

61. Aditya Banerjee, **Aryadeep Roychoudhury*** (2021) Metallothionein-assisted phytoremediation of inorganic pollutants, In: Hasanuzzaman M, Prasad MNV (Ed.), Handbook of Bioremediation, **Academic Press (Elsevier),** Pp. 81-90

62. Ankur Singh, **Aryadeep Roychoudhury*** (2021) Augmenting the Abiotic Stress Tolerance in Plants Through Microbial Association. In: Nath M, Bhatt D, Bhargava P, Choudhary DK (Ed.) Microbial Metatranscriptomics Belowground, **Springer, Singapore,** Pp. 179-198

63. Ankur Singh, **Aryadeep Roychoudhury*** (2021) Salicylic Acid and Jasmonic Acid in Generating Salt Stress-Tolerant Plants. In: Aftab T, Yusuf M (Ed.) Jasmonates and Salicylates Signaling in Plants. **Springer Nature Switzerland,** Pp. 31-43

64. Aditya Banerjee, **Aryadeep Roychoudhury*** (2021) Phosphate, nitrate and polyamine transporters in abiotic stress response in plants. In: Roychoudhury A, Tripathi DK, Deshmukh R (Ed.) Transporters and Plant Osmotic Stress. **Academic Press (Elsevier),** Pp. 29-35

65. **Aryadeep Roychoudhury***, Supratim Basu (2021) Abscisic acid control of plant macroelement membrane transport systems in response to water deficit and high salinity. In: Roychoudhury A, Tripathi DK, Deshmukh R (Ed.) Transporters and Plant Osmotic Stress. **Academic Press (Elsevier),** Pp.89-99

66. Amber Gupta, Birendra Prasad Shaw, **Aryadeep Roychoudhury*** (2021) NHX1, HKT, and monovalent cation transporters regulate K⁺ and Na⁺ transport during abiotic stress. In: Roychoudhury A, Tripathi DK, Deshmukh R (Ed.) Transporters and Plant Osmotic Stress. **Academic Press (Elsevier),** Pp. 1-27

67. Aditya Banerjee, **Aryadeep Roychoudhury*** (2021) Roles of turgorins and systemins in promoting agriculture. In: Naeem M, Aftab T (Ed.) Emerging Plant Growth Regulators in Agriculture Roles in Stress Tolerance. **Academic Press (Elsevier),** Pp. 415-421

68. Aditya Banerjee, **Aryadeep Roychoudhury*** (2021) Role of Phenomics in Screening Abiotic

Stress Tolerance in Plants. In: Aftab T, Hakeem KR (Ed.) Plant Abiotic Stress Physiology Volume 2 Molecular Advancements. **CRC Press Taylor & Francis Group APPLE ACADEMIC PRESS**, Pp. 47-59

69. Aditya Banerjee, **Aryadeep Roychoudhury*** (2021) Role of magnetopriming in alleviation of abiotic stress in plants. In: Aftab T, Roychoudhury A (Ed.) PLANT PERSPECTIVES TO GLOBAL CLIMATE CHANGES Developing Climate-Resilient Plants. **Academic Press (Elsevier)**, Pp. 519-523

70. Ankur Singh, **Aryadeep Roychoudhury***(2021) Role of β -aminobutyric acid in generating stress-tolerant and climate-resilient plants. In: Aftab T, Roychoudhury A (Ed.) PLANT PERSPECTIVES TO GLOBAL CLIMATE CHANGES Developing Climate-Resilient Plants. **Academic Press (Elsevier)**, Pp. 459-469

71. **Aryadeep Roychoudhury***, Swarnavo Chakraborty (2021) Effect of Hydrogen Sulfide on Osmotic Adjustment of Plants Under Different Abiotic Stresses. In: Khan MN, Siddiqui MH, Alamri S, Corpas FJ (Ed.) Hydrogen Sulfide and Plant Acclimation to Abiotic Stresses. **Springer Nature Switzerland AG**, Pp. 73-85

72. Ankur Singh, **Aryadeep Roychoudhury***(2021) Hydrogen Sulfide and Redox Homeostasis for Alleviation of Heavy Metal Stress. In: Khan MN, Khan MN, Siddiqui MH, Alamri S, Corpas FJ (Ed.) Hydrogen Sulfide and Plant Acclimation to Abiotic Stresses. **Springer Nature Switzerland AG**, Pp. 59-72

73. Santanu Samanta, **Aryadeep Roychoudhury***(2021) Arsenic stress and mineral nutrition in plants. In: Kumar V, Srivastava AK, Suprasanna P (Ed.) Plant Nutrition and Food Security in the Era of Climate Change. **Academic Press (Elsevier)**, Pp. 361-375

74. **Aryadeep Roychoudhury***, Swarnavo Chakraborty (2021) Cobalt and molybdenum: deficiency, toxicity, and nutritional role in plant growth and development. In: Kumar V, Srivastava AK, Suprasanna P (Ed.) Plant Nutrition and Food Security in the Era of Climate Change. **Academic Press (Elsevier)**, Pp. 255-270

75. Aditya Banerjee, **Aryadeep Roychoudhury*** (2021) Role of sugars in mediating abiotic stress tolerance in legumes. In: Singh VP, Singh S, Tripathi DK, Prasad SM, Bhardwaj R (Ed.) Abiotic Stress and Legumes. **Academic Press (Elsevier)**, Pp. 93-103

76. Aditya Banerjee, **Aryadeep Roychoudhury*** (2021) Nitric oxide mediated regulation of stomatal movement during desiccation. In: Singh VP, Singh S, Tripathi D, Romero-Puertas M, Sandalio L (Ed.) Nitric Oxide in Plant Biology. **Academic Press (Elsevier)**, Pp. 493-502

77. Santanu Samanta, **Aryadeep Roychoudhury*** (2021) Heavy Metal Toxicity in Plants: Physiological and Molecular Adaptations. In: Aftab T, Hakeem KR (Ed.) Heavy Metal Toxicity in Plants. **CRC Press Taylor & Francis Group, Boca Raton**, Pp. 1-9

78. Aditya Banerjee, **Aryadeep Roychoudhury*** (2021) Beneficial Aspects of Cobalt Uptake in Plants Exposed to Abiotic Stresses. In: Aftab T, Hakeem KR (Ed.) Frontiers In Plant-Soil Interaction.

Academic Press (Elsevier), Pp. 523-529

79. Aryadeep Roychoudhury*, Nilanjana Das (2022) Sewage Sludge Treatment and Involvement of Microbes. In: Rajput VD, Yadav AN, Jatav HS, Singh SK, Minkina T (Ed.) Sustainable Management and Utilization of Sewage Sludge. **Springer Nature Switzerland** Pp.165-181

80. Aditya Banerjee, **Aryadeep Roychoudhury*** (2022) Silver and zinc nanoparticles in the improvement of agricultural crops. In: Ghorbanpour M, Shahid MA (Ed.) Nano-enabled agrochemicals in agriculture. **Academic Press (Elsevier)**, Pp.199-209

81. Swarnavo Chakraborty, **Aryadeep Roychoudhury*** (2022) Morphological, Architectural and Biochemical Modifications of Cereal Crops During Abiotic Stress. In: Roychoudhury A, Aftab T, Acharya K (Ed.) Omics Approach to Manage Abiotic Stress in Cereals. **Springer Nature Singapore**, Pp. 1-20

82. Aditya Banerjee, **Aryadeep Roychoudhury*** (2022) Molecular Genetic Studies and Breeding and Genomics-Based Approaches to Develop Abiotic Stress Tolerance in Sorghum. In: Roychoudhury A, Aftab T, Acharya K (Ed.) Omics Approach to Manage Abiotic Stress in Cereals. **Springer Nature Singapore**, Pp. 465-477

83. Ankur Singh, **Aryadeep Roychoudhury*** (2022) Omics Tools to Understand Abiotic Stress Response and Adaptation in Rye, Oat and Barley. In: Roychoudhury A, Aftab T, Acharya K (Ed.) Omics Approach to Manage Abiotic Stress in Cereals. **Springer Nature Singapore**, Pp. 513-529

84. Swarnavo Chakraborty, **Aryadeep Roychoudhury*** (2022) Ethical Perspectives and Limitations of Metabolic Engineering Technologies in Plants. In: Aftab T, Hakeem KR (Ed.) Metabolic Engineering in Plants. **Springer Nature Singapore**, Pp. 405–413

85. Aryadeep Roychoudhury*, Kankan Datta, Rajarshee Tagore (2022) Influence of chitosan and chitosan based nanoparticles against abiotic stress in plants. In: Kumar S, Madihally SV (Ed.) Role of Chitosan and Chitosan-Based Nanomaterials in Plant Sciences. **Academic Press (Elsevier)**, Pp. 297-320

86. Ankur Singh, **Aryadeep Roychoudhury***(2022) Protective Chemicals and Metabolites in Stabilizing Photosynthesis and Respiration Machinery during Abiotic Stresses. In: Roychoudhury A (Ed.) Photosynthesis and Respiratory Cycles during Environmental Stress Response in Plants. **Apple Academic Press, Inc. Co-published with CRC Press (Taylor & Francis)**, Pp. 351-372

87. Kankan Datta, **Aryadeep Roychoudhury*** (2022) Cadmium-induced oxidative stress and remediation in plants. In: Naeem M, Aftab T, Ansari AA, Gill S, Macovei A (Ed.) Hazardous and Trace Materials in Soil and Plants. **Academic Press (Elsevier)**, Pp. 247-261

88. Ankur Singh, **Aryadeep Roychoudhury*** (2022) Role of nanoparticles in remediation of environmental contaminants. In: Naeem M, Aftab T, Ansari AA, Gill S, Macovei A (Ed.) Hazardous and Trace Materials in Soil and Plants. **Academic Press (Elsevier)**, Pp.327-340

89. Aditya Banerjee, **Aryadeep Roychoudhury*** (2022) Understanding the effects of lanthanum toxicity in plants. In: Aftab T, Hakeem K (Ed.) Metals Metalloids Soil Plant Water Systems.

Academic Press (Elsevier), Pp. 417-426

90. Ankur Singh, **Aryadeep Roychoudhury*** (2022) Mechanism of Crosstalk Between Cytokinin and Gibberellin. In: Aftab T (Ed.) Auxins, Cytokinins and Gibberellins Signaling in Plants. Signaling and Communication in Plants. **Springer, Cham**, Pp. 77–90

91. Swarnavo Chakraborty, **Aryadeep Roychoudhury*** (2022) Seed Priming as a Sustainable Solution to Mitigate Salinity and Drought Stress in Plants. In: Aftab T (Ed.) Sustainable Management of Environmental Contaminants. Environmental Contamination Remediation and Management. **Springer, Cham**, Pp. 357-370

92. Gouranga Upadhyaya, **Aryadeep Roychoudhury*** (2022) Arsenic-Toxicity and Tolerance: Phytochelatin-Mediated Detoxification and Genetic Engineering-Based Remediation. In: Niazi NK, Bibi I, Aftab T (Ed.) Global Arsenic Hazard Ecotoxicology and Remediation. **Springer Nature Switzerland**, Pp. 481-508

93. **Aryadeep Roychoudhury***, Rituparna Bhowmik (2023) Nanoremediation of Heavy Metals in Agricultural Soil. In: Fernandez-Luqueno F, Patra JK (Ed.) Agricultural and Environmental Nanotechnology. **Springer Nature Singapore Pte Ltd**, Pp. 433-450

94. Swarnavo Chakraborty, **Aryadeep Roychoudhury*** (2023) Classification, Structure, Function, and Evolution of Transposable Elements in *Oryza sativa*. In: Pandita D, Pandita A (Ed.) Plant Transposable Elements: Biology and Biotechnology. **Apple Academic Press Inc. Co-published with CRC Press (Taylor & Francis)**, Pp. 349-362

95. Aditya Banerjee, **Aryadeep Roychoudhury*** (2023) Genome Editing Using CRISPR/Cas9 System for Crop Improvement, Nutrient Enrichment, and Abiotic Stress Tolerance in Rice. In: Pandita D, Pandita A (Ed.) CRISPR/Cas-Mediated Genome Editing in Plants. **Apple Academic Press, Inc. Co-published with CRC Press (Taylor & Francis)**, New York, Pp. 133-137

96. Swarnavo Chakraborty, **Aryadeep Roychoudhury*** (2023) Metabolic Engineering of Essential Micronutrients in Plants to Ensure Food Security. In: Upadhyay S, Singh SP (Ed.) Plants as Bioreactors for Industrial Molecules. **John Wiley & Sons Ltd, USA**, Pp. 255-272

97. Gouranga Upadhyaya, Subhankar Mondal, **Aryadeep Roychoudhury*** (2023) Arsenic and Cadmium Toxicity in Plants: Mitigation and Remediation Strategies. In: Aftab T (Ed.) Emerging Contaminants and Plants. **Springer Nature Switzerland AG**, Pp. 249-285

98. Ankur Singh, **Aryadeep Roychoudhury*** (2023) Antioxidants and Secondary Metabolites of Mushrooms as a Source of Nutraceuticals and Functional Food. In: Pandita D, Pandita A (Ed.) Mushrooms Nutraceuticals and Functional Foods. **CRC Press, Taylor & Francis group**, Pp. 1-14

99. Ankur Singh, **Aryadeep Roychoudhury*** (2023) Role of Phenolic Acids and Flavonoids in the Mitigation of Environmental Stress in Plants. In: Roychoudhury A (Ed.) Biology and Biotechnology of Environmental Stress Tolerance in Plants: Secondary Metabolites in Environmental Stress Tolerance, Volume 1. **Apple Academic Press, Inc. Co-published with CRC Press (Taylor & Francis)**, Pp. 227-248

- 100.** Ankur Singh, **Aryadeep Roychoudhury*** (2023) Exogenous Application of Trace Elements and Their Uptake by Plants to Mediate Abiotic Stress Tolerance. In: Roychoudhury A (Ed.) Biology and Biotechnology of Environmental Stress Tolerance in Plants: Trace Elements in Environmental Stress Tolerance, Volume 2. **Apple Academic Press, Inc. Co-published with CRC Press (Taylor & Francis)**, Pp. 147-171
- 101.** Aditya Banerjee, **Aryadeep Roychoudhury*** (2023) Application of Nanomaterial-Based Technology in Stress Management of Plants. In: Roychoudhury A (Ed.) Biology and Biotechnology of Environmental Stress Tolerance in Plants: Trace Elements in Environmental Stress Tolerance, Volume 2. **Apple Academic Press, Inc. Co-published with CRC Press (Taylor & Francis)**, Pp. 533-543
- 102.** Ankur Singh, **Aryadeep Roychoudhury*** (2023) Advances in Metabolomics Research in Environmental Stress Response in Plants. In: Roychoudhury A (Ed.) Biology and Biotechnology of Environmental Stress Tolerance in Plants: Sustainable Approaches for Enhancing Environmental Stress Tolerance Volume 3. **Apple Academic Press, Inc. Co-published with CRC Press (Taylor & Francis)**, Pp. 431-448
- 103.** Aditya Banerjee, **Aryadeep Roychoudhury*** (2023) Crop Improvement in Deserts. In: Mukherjee S, Mukherjee P, Aftab T (Ed.) Crop sustainability and intellectual property rights. **Apple Academic Press, Inc. Co-published with CRC Press (Taylor & Francis)**, Pp. 133-149
- 104.** Ankur Singh, **Aryadeep Roychoudhury*** (2023) Hydrogen Peroxide as a Signaling Molecule in Plant Abiotic Stress. In: Mukherjee S, Mukherjee P, Aftab T (Ed.) Crop sustainability and intellectual property rights. **Apple Academic Press, Inc. Co-published with CRC Press (Taylor & Francis)**, Pp. 237-264
- 105.** Aditya Banerjee, **Aryadeep Roychoudhury*** (2023) Rice Physiology and Sustainability in the Face of Increasing Carbon Dioxide Concentration. In: Mukherjee S, Mukherjee P, Aftab T (Ed.) Crop sustainability and intellectual property rights. **Apple Academic Press, Inc. Co-published with CRC Press (Taylor & Francis)**, Pp. 111-118
- 106.** Arunima Bhattacharya, **Aryadeep Roychoudhury*** (2023) Microplastics in the Aquatic Environment – Effects on Ocean Carbon Sequestration and Sustenance of Marine Life. In: Vithanage M, Prasad MNV (Ed.) Microplastics in the Ecosphere: Air, Water, Soil, and Food. **John Wiley and Sons, USA**, Pp. 189-200
- 107.** Swarnavo Chakraborty, **Aryadeep Roychoudhury*** (2023) MicroRNA-mediated Regulation of Heavy Metal Stress in Plants. In: Pandita D, Pandita A (Ed.) Plant MicroRNAs and Stress Response. **CRC Press (Taylor and Francis group)**, Pp. 183-197
- 108.** Aditya Banerjee, **Aryadeep Roychoudhury*** (2023) Signaling crosstalk between brassinosteroids and ethylene in plant defense, growth, and development Hormonal Cross-Talk. In: Husen A, Zhang W (Ed.) Plant Defense and Development. **Academic Press (Elsevier)**, Pp. 111-122

- 109. Aryadeep Roychoudhury***, Subhajit Sarkar, Swarnavo Chakraborty (2023) Fungal-mediated synthesis of gold and titanium nanoparticles and their application in agriculture. In: Kuddus M, Ahmad IZ, Hussain CM (Ed.) Myconanotechnology and application of nanoparticles in biology. **Academic Press (Elsevier)**, Pp. 79-92
- 110.** Ankur Singh, **Aryadeep Roychoudhury*** (2023) RNA Interference (RNAi) Technology: An Effective Tool in Plant Breeding. In: Raina A, Wani MR, Laskar RA, Tomlekova N, Khan S (Ed.) Advanced Crop Improvement, Volume 1. **Springer Nature Switzerland AG**, Pp. 309-320
- 111.** Nilanjana Das, **Aryadeep Roychoudhury*** (2023) Genetic Engineering of Plants for Enhancing Secondary Metabolites with Anticancerous Properties. In: Pandita D, Pandita A (Ed.) Plant-Derived Anticancer Drugs in the OMICS Era: Biosynthesis, Functions, and Applications. **CRC Press (Apple Academic Press)**, Pp. 127-150
- 112. Aryadeep Roychoudhury***, Swarnavo Chakraborty (2023) Radioactive Wastes: Management by Potential Treatments. In: Riaz U, Iqbal S, Jamil M (Ed.) Waste problems and management in developing countries. **CRC Press (Apple Academic Press)**, Pp. 233-255
- 113.** Unmesha Paul, Ankur Singh, **Aryadeep Roychoudhury*** (2023) Nanoparticles in Developing Plant Tolerance against Biotic Stress. In: Bhar A, Roychoudhury A (Ed.) Emerging Technologies to Combat Biotic Stress in Crop Plants and Food Security. **Nova Science Publishers**, Pp. 291-309
- 114.** Aditya Banerjee, **Aryadeep Roychoudhury*** (2023) Role of H₂S in nutrient excesses and deficiencies. In: Singh VP, Tripathi DK, Fotopoulos V (Ed.) H₂S in plants Past, Present and Beyond **Academic Press (Elsevier)**, Pp. 263-275
- 115.** Santanu Samanta, **Aryadeep Roychoudhury*** (2023) Genomic and Proteomic Approaches to Enhance Stress Tolerance in Plants for Creating Stress-Resilient Species. In: Aftab T (Ed.) New Frontiers in Plant-Environment Interactions. **Springer Nature Switzerland AG**, Pp. 329-357
- 116.** Swarnavo Chakraborty, **Aryadeep Roychoudhury*** (2023) Carbon Compounds as Gasotransmitters in Plants Under Challenging Environment. In: Aftab T, Corpas FJ (Ed.) Gasotransmitters Signaling in Plants under Challenging Environment. **Springer Nature Switzerland AG**, Pp. 299-314
- 117.** Ankur Singh, **Aryadeep Roychoudhury*** (2023) Melatonin-Phytohormone Interaction in Regulating Plant Growth and Stress Tolerance. In: Roychoudhury A (Ed.) Advancement of Melatonin Research in Plants Multi-Faceted Role in Regulating Development and Stress Protection. **CRC Press (Taylor and Francis group)**, Pp. 144-152
- 118.** Mondal T, Chandini, Sahoo U, Sairam M, Shankar T, Lalichetti S, Gaikwad DJ, Hossain A, **Roychoudhury A**, Moulick D, Maitra S (2023) Melatonin-Induced Plant Tolerance against Temperature Stress. In: Roychoudhury A (Ed.) Advancement of Melatonin Research in Plants Multi-Faceted Role in Regulating Development and Stress Protection. **CRC Press (Taylor and Francis group)**, Pp. 237-253
- 119.** Gouranga Upadhyaya, **Aryadeep Roychoudhury*** (2024) Potential of Silver and Zinc

Nanoparticles in Mediating Abiotic Stress Tolerance in Crop Plants. In: Bachheti R, Bachheti A, Husen A (Ed.) Metal and Metal-Oxide Based Nanomaterials. **Springer Nature Singapore**, Pp. 157-177

120. Aditya Banerjee, **Aryadeep Roychoudhury*** (2024) Application of bacterial volatiles in plant disease management. In: Kumar A, White J, Singh J (Ed.) Biocontrol Agents for Improved Agriculture. **Academic Press (Elsevier)**, Pp. 319-330

121. Swarnavo Chakraborty, **Aryadeep Roychoudhury*** (2024) Phytoremediation Potential of Medicinal Plants to Relieve Pollutant Stress. In: Chen J-T (Ed.) Molecular and Physiological Insights into Plant Stress Tolerance and Applications in Agriculture Part 2. **Bentham Science Publishers**, Pp. 99-115

122. **Aryadeep Roychoudhury***, Ankur Singh (2024) Applications of Nanoparticles as Anti-microbial Agents. In: Roy S, Hossain A (Ed.) The Nanotechnology Driven Agriculture. **CRC Press (Taylor & Francis group)** Pp. 264-276

123. Puja Ghosh, **Aryadeep Roychoudhury*** (2024) Phytohormone signaling in the cross talk of micro- and macro-nutrient deficiency stress responses in plants. In: Husen A (Ed.) Essential Minerals in Plant-Soil Systems. **Academic Press (Elsevier)**, Pp. 145-160

124. Arunima Bhattacharya, **Aryadeep Roychoudhury*** (2024) Plant Non-Coding RNAs and Their Regulation in Salinity and Heavy Metal Stress. In: Penna S, Kumar V, Srivastava AK (Ed.) Non-Coding RNAs Molecular Tools for Crop Improvement. **CRC Press (Taylor & Francis group)**, Pp. 128-147

125. Santanu Samanta, **Aryadeep Roychoudhury*** (2024) Microbial bioremediation of metal and radionuclides: approaches and advancement. In: Kumar A, Singh J, de Azevedo LCB (Ed.) Microbiome-based Decontamination of Environmental Pollutants. **Academic Press (Elsevier)**, Pp. 293-316

126. Aditya Banerjee, **Aryadeep Roychoudhury*** (2024) Phosphoproteomic Study of Plants under Different Abiotic Stress. In: Roychoudhury A (Ed.) Plant Proteomics Implications in Growth, Quality Improvement, and Stress Resilience. **CRC Press (Taylor & Francis group)**, Pp. 116-123

127. **Aryadeep Roychoudhury*** (2024) Proteomics Studies to Understand Heavy Metal Stress Response in Plants. In: Roychoudhury A (Ed.) Plant Proteomics Implications in Growth, Quality Improvement, and Stress Resilience. **CRC Press (Taylor & Francis group)**, Pp. 94-102

***Corresponding author**

CONFERENCES/SEMINARS/PROGRAMS PARTICIPATED:

- 1. National Seminar on Transgenic plants: prometheus unbound, organized by** Department of Biophysics, Molecular Biology and Genetics, Calcutta University, **March 26, 2006**, at Calcutta University
- 2. Symposium on Plant Biotechnology and its relevance to food security**, supported by DBT

Program Support, Department of Biotechnology, Govt. of India, **August 23, 2008**, at Calcutta University

3. International Conference on Plant Systems Biology, organized by the Department of Biophysics, Molecular Biology and Bioinformatics, Department of Botany and Bioinformatics Centre, Calcutta University, **December 8, 2009** at Calcutta University

4. International Symposium on Modern Biology in 21st Century: Teaching and Research, organized by the Department of Biophysics, Molecular Biology and Bioinformatics, University of Calcutta, **December 7th and 8th, 2010**, at Calcutta University

5. DST-PURSE-sponsored Seminar on “Diabetes Research: Present status and future prospects”, organized by Department of Biophysics, Molecular Biology and Bioinformatics, University of Calcutta, **17th September, 2012**, at Calcutta University

6. 23rd S. M. Sircar Conference, organized by Plant Physiology Forum, **4th April, 2014**, at Bose Institute

7. Inter Institutional Faculty Exchange Program (IIFEP) organized by All India Association for Christian Higher Education (AIACHE), New Delhi, **November 30th to December 8th, 2014**, at Kochi and New Delhi

8. One-day symposium on Insight to Plant Biology Through Systems Approach, organized by Division of Plant Biology, Bose Institute, **December 17, 2015**, at Bose Institute, Kolkata

9. National Symposium “Exploring Biological System: Cell to Organism (EBS 2016)”, organized by Department of Biophysics, Molecular Biology and Bioinformatics, University of Calcutta, **1st and 2nd March, 2016**, at Calcutta University

10. National Seminar “Frontiers in Biotechnology, 2016”, organized by the Department of Biotechnology, St. Xavier’s College (Autonomous), Kolkata, **4th October, 2016**, at St. Xavier’s College (Autonomous), Kolkata

11. DBT (Govt. of India) sponsored two-day National Level Workshop on Advances in Condensed Matter Physics with special emphasis on Biological Systems for Faculty Development, organized by Department of Physics, St. Xavier’s College (Autonomous), Kolkata, **9th and 10th December, 2016**, at St. Xavier’s College (Autonomous), Kolkata

12. National Seminar “Frontiers in Biotechnology, 2017”, organized by the Department of Biotechnology, St. Xavier’s College (Autonomous), Kolkata, **27th October, 2017**, at St. Xavier’s College (Autonomous), Kolkata

13. UGC-CAS Phase VII sponsored National Seminar on “New Horizons of Integrative Biology”, organized by Department of Botany, University of Calcutta, **29th and 30th March, 2018**, at Calcutta University

14. National Seminar “Frontiers in Biotechnology, 2018”, organized by the Department of Biotechnology, St. Xavier’s College (Autonomous), Kolkata, **12th October, 2018**, at St. Xavier’s College (Autonomous), Kolkata

15. **National Seminar on Applications of Statistics in Natural Sciences**, organized by Department of Statistics and Physics, St. Xavier's College (Autonomous), Kolkata, in collaboration with ICARD, Kolkata, **16th and 17th December, 2019**, at St. Xavier's College (Autonomous), Kolkata
16. **Two-day Faculty Development Programme on Experimental Physics at Graduate Level: Scope and Challenges**, organized by Department of Physics, St. Xavier's College (Autonomous), Kolkata, **10th and 11th January, 2020**, at St. Xavier's College (Autonomous), Kolkata

PAPERS/LECTURES PRESENTED IN CONFERENCES/SEMINARS

Last 10 years

1. Shreyasee Roy, Ranita Bose, Debabrata Mukherjee, **Aryadeep Roy Choudhury (2016)** A comparative study on the effect of Cd and As in some important selected plant species (**Paper presented at 5th International Conference on Ecotoxicology & Environmental Sciences**, organized by Institute of Ecotoxicology and Environmental Sciences, Kolkata, held at Central Institute of Fisheries Technology, Cochin, Kerala)
2. **Aryadeep Roy Choudhury (2016)** Molecular regulation of *Rab16A* gene during salinity stress and varietal differences in salt stress response in indica rice (**Oral presentation at National Seminar on "Defining Modern Biology: plants and microbes"**, organized by Department of Botany, University of Gour Banga, Malda, West Bengal)
3. Saikat Paul, **Aryadeep Roy Choudhury (2016)** Expression analysis of abscisic acid inducible genes under multiple abiotic stresses in rice (*Oryza sativa* L.) (**Paper presented at National Seminar on "Defining Modern Biology: plants and microbes"**, organized by Department of Botany, University of Gour Banga, Malda, West Bengal)
4. **Aryadeep Roychoudhury (2016)** Induced *Rab16A* gene expression in the molecular regulation of salt tolerance mechanism of indica rice varieties. (**Oral presentation at National Conference of Plant Physiology – 2016 "Challenges in Crop Physiology Research: From Molecular to Whole Plant"**, organized by Department of Crop Physiology, University of Agricultural Sciences, Bengaluru and Indian Society for Plant Physiology, New Delhi)
5. Saikat Paul, **Aryadeep Roychoudhury (2016)** Seed priming with spermidine enhances salt tolerance in the susceptible aromatic rice cultivar Gobindobhog by influencing multiple metabolic pathways and up regulating stress-inducible genes. (**Paper presented at National Conference of Plant Physiology – 2016 "Challenges in Crop Physiology Research: From Molecular to Whole Plant"**, organized by Department of Crop Physiology, University of Agricultural Sciences, Bengaluru and Indian Society for Plant Physiology, New Delhi)
6. Aditya Banerjee, **Aryadeep Roy Choudhury (2016)** Alleviation of cadmium chloride- induced oxidative stress in mungbean (*Vigna radiata* L.) by seed pre-treatment with salicylic acid. (**Paper presented in the International Conference on "The Green Planet: past, present and future"**, organized by CAS-VII, Department of Botany, University of Calcutta)

7. Saikat Paul, **Aryadeep Roy Choudhury (2017)** Seed priming with spermine and spermidine improves salt tolerance of rice (*Oryza sativa* L.) seedlings via modulation of multiple metabolic pathways. (**Paper presented** in the International Symposium on “Insight to Plant Biology in the modern era”, organized by Division of Plant Biology, Bose Institute)
8. Saikat Paul, **Aryadeep Roy Choudhury (2017)** Comparative transcriptional profiling of ABA-inducible stress-responsive and yield related genes in two rice (*Oryza sativa* L.) cultivars during grain filling under salinity stress. (**Paper presented** in the National Conference of Plant Physiology “Emerging Role of Plant Physiology for Food Security and Climate Resilient Agriculture”, organized by Indira Gandhi Krishi Vishwavidyalaya, Raipur, Chattisgarh)

INVITED LECTURE/RESOURCE PERSON

1. **Aryadeep Roy Choudhury (2014)** Genetically modified (GM) crops: food security, challenges and present status - **Invited speaker** at the National Seminar on “Food Security and GM crops”, organized by Rishi Bankim Chandra College, Naihati, **on 12th February, 2014**
2. **Aryadeep Roy Choudhury (2014)** Regulation of gene expression for environmental stress management in crops - **Invited talk as resource person**, at the Department of Biotechnology, Mar Augusthinose College, Ramapuram, Kottayam, Kerala, **on 3rd December, 2014**, as a part of **Inter Institutional Faculty Exchange Program (IIFEP)**, organized by All India Association for Christian Higher Education, New Delhi)
3. **Aryadeep Roy Choudhury (2015)** Genetically modified crops - **Invited lecture as a resource person**, in the one day students’ seminar, organized by the Department of Botany, Scottish Church College, Kolkata **on 5th December, 2015**.
4. **Aryadeep Roy Choudhury (2016)** **Invited lecture as a resource person** in Pre-Ph.D. Course program for research scholars in Botany **on 24th February, 2016**, at the Department of Botany, University of Calcutta
5. **Aryadeep Roy Choudhury (2016)** **Invited lecture** in Ph.D. coursework for research scholars on Research Methodology **on 29th June, 2016**, at the Department of Biochemistry, West Bengal State University.
6. **Aryadeep Roy Choudhury (2018)** Transcriptomics and biochemical analysis in deciphering varietal differences in abiotic stress tolerance in indica rice (**invited speaker** in “Biosangam An International Conference on Innovations and Translational Dimensions: Food, Health and Environmental Biotechnology”, organized by Department of Biotechnology, Motilal Nehru National Institute of Technology, Allahabad)
7. **Aryadeep Roy Choudhury (2018)** **Chairperson for a session** in “Biosangam An International Conference on Innovations and Translational Dimensions: Food, Health and Environmental Biotechnology”, organized by Department of Biotechnology, Motilal Nehru National Institute of Technology, Allahabad, held **on March 9-11, 2018**.

8. Aryadeep Roy Choudhury (2020) Guest Speaker in the Webinar entitled “Journey of rice research from salinity to fluoride stress response” on the virtual platform of Bioingene.com International Webinar Series for the promotion of Plant Science Research, held on **December 31, 2020**, Youtube link: <https://youtu.be/CloEo5xwvEs>

9. Aryadeep Roy Choudhury (2021) Invited lecture (as resource person) in a Workshop on “Basic Techniques in Biological Sciences” organized by the Department of Botany and IQAC, Government General Degree College, Singur, West Bengal, held on **June 21, 2021**.

10. Aryadeep Roy Choudhury (2021) Keynote Speaker in the International Webinar on “Priming: an effective technique for good crop stand”, organized by Department of Agronomy, Ghazi University, Pakistan, held on **July 13, 2021**.

11. Aryadeep Roy Choudhury (2021) Plenary Speaker in the 7th International Conference on Environment and Ecology (ICEE 2021) **presenting a paper** entitled “Fluoride Stress Variably Affects the Overall Physiology and Grain Development in Three Contrasting Rice Cultivars, Representing a Potential Biohazard”, through Google Meet, held on **November 26, 27 and 28, 2021**.

12. Aryadeep Roy Choudhury (2022) Plenary Speaker in the International Multidisciplinary Webinar on Climate Change Impact on Agriculture, Environment and Sustainable Development, **presenting a paper** entitled “Promoting Plant Growth and Stress Tolerance through Priming Technique”, through Google Meet, held on **February 11, 12 and 13, 2022**.

13. Aryadeep Roy Choudhury (2022) Guest Speaker at the National Conference on “Technological Interventions in Life Sciences, Food, Agriculture & Allied Health Sciences – A Paradigm Shift towards a Better Future”, organized by Swami Vivekananda University, Barrackpore, West Bengal, held on **May 19 – 24, 2022**.

14. Aryadeep Roy Choudhury (2023) Invited Speaker at the International Conference on Recent Trends in Materials Science & Devices 2023, organized by Research Plateau Publisher & G.A.V. Degree College, Patauda, Jhajjar, Haryana, held on **July 22-23, 2023**

15. Aryadeep Roy Choudhury (2023) Session chair at the International Conference on Recent Trends in Materials Science & Devices 2023, organized by Research Plateau Publisher & G.A.V. Degree College, Patauda, Jhajjar, Haryana, held on **July 22-23, 2023**

LIVE TALK SHOW:

Invited as the **Solo Expert** by **Doordarsan Kendra, Kolkata** (DD-Bangla) for a phone-in live talk show “HELLO DD: BASUNDHARA” (PROGRAM ON ENVIRONMENT) for the topic “PROSHNER MUKHE PARIBARTITA UDBHID” on **November 16th, 2015, 4 PM to 5 PM**

Link (<http://www.ddbangla.gov.in/upload/progmanagements/MONDAY%2016.11.15.pdf>)

Youtube Link: <https://youtu.be/gplavSi3v3Y>

AWARDS:

1. **YOUNG SCIENTIST OF THE YEAR 2019 AWARD** on **24th February, 2020**, conferred by the International Foundation for Environment and Ecology, on the occasion of 6th International Conference on Environment and Ecology, hosted and organized by the Department of Botany and Center of Environmental Sciences, University of Allahabad, Prayagraj, Uttar Pradesh.
2. **BEST ORAL PRESENTATION AWARD** for the paper entitled “Exogenous Application of Higher Polyamines, Spermidine and Spermine Ameliorates Fluoride Toxicity in a Susceptible Rice Cultivar by Restricting Fluoride uptake and Activating Defense Machinery” at the 6th International Conference on Environment and Ecology, hosted and organized by the Department of Botany and Center of Environmental Sciences, University of Allahabad, Prayagraj, Uttar Pradesh, on **24-25-26 February, 2020**
3. **OUTSTANDING PAPER AWARD** for the paper titled “Exogenous spermidine ameliorates prolonged fluoride toxicity in rice by restricting xenobiotic uptake and refining the molecular defense physiology” at the 4th Regional Science and Technology Congress (Southern Region) jointly organized by Department of Science & Technology and Biotechnology, Government of West Bengal & Maulana Abul Kalam Azad University of Technology, West Bengal, on **24th December, 2019**
4. **ENVIRONMENT EXCELLENCE AWARD** conferred by the International Foundation for Environment and Ecology, Kolkata, on **26th November 2021**
5. Included, for three consecutive years, in the **World Top 2% Scientists' List**, as released by Stanford University, USA, in 2021, 2022 and 2023

OTHER PROFESSIONAL ASSOCIATIONS:

1. LIFE MEMBER OF:

- a) SOCIETY FOR PLANT BIOCHEMISTRY AND BIOTECHNOLOGY (SPBB), NEW DELHI
- b) INDIAN SOCIETY FOR PLANT PHYSIOLOGY (ISPP), NEW DELHI
- c) INDIAN SCIENCE CONGRESS ASSOCIATION (ISCA)
- d) BOTANICAL SOCIETY OF BENGAL
- e) INTERNATIONAL FOUNDATION FOR ENVIRONMENT AND ECOLOGY
- f) INSTITUTE OF ECOTOXICOLOGY & ENVIRONMENTAL SCIENCES

2. REVIEWER OF SEVERAL PEER-REVIEWED, HIGH-IMPACT INTERNATIONAL AND NATIONAL JOURNALS

3. ADJUDICATION OF Ph.D. THESIS

4. **PAPER SETTER, EXTERNAL MODERATOR AND EXAMINER** (THEORETICAL AND/OR PRACTICAL) AT CALCUTTA UNIVERSITY, BURDWAN UNIVERSITY, WEST BENGAL STATE UNIVERSITY, ALIGARH MUSLIM UNIVERSITY AND UTTARAKHAND STATE UNIVERSITY
5. **VISITING GUEST-FACULTY** at UNIVERSITY OF CALCUTTA, SCOTTISH CHURCH COLLEGE, KOLKATA, and SERAMPORE COLLEGE, HOOGHLY

6. LABORATORY IN CHARGE at the DEPARTMENT OF BIOTECHNOLOGY, ST.XAVIER'S COLLEGE (AUTONOMOUS), KOLKATA, from August 2021 to November 2022