Dr. ARKA PRATIM CHAKRABORTY
Assistant Professor
Department of Botany, Raiganj University
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CURRICULUM VITAE

Name: Dr. ARKA PRATIM CHAKRABORTY

Designation: Assistant Professor, Department of Botany, Raiganj University

Date of Birth: 11.07.1983

Name of the Institution with Address: Department of Botany, Raiganj University, University Road, Uttar Dinajpur, Pin-733134

Contact number: 09474141311/08945518753

E-mail: **arka.botanyrgu@gmail.com**

Website: www. raiganjuniversity.ac.in

Teaching Interest: MICROBIOLOGY, PLANT PATHOLOGY, ARCHEGONIATES, PHYCOLOGY, BIOCHEMISTRY & BIOMOLECULES, PLANT PHYSIOLOGY, BIOSTATISTICS, MORPHOLOGY & ANATOMY

Research Interest: Microbiology, Plant Pathology, Biotic Stress, Plant Growth Promoting Rhizobacteria, Plant-Microbe Interactions.

EDUCATIONAL QUALIFICATION

Sl.No.	Year	Name of the Examinations	Board/University	Percentage (%)	Division/Grade
1	2014	Ph.D. (UGC Regulation 2009) (Thesis Title: Studies on *Bacillus megaterium* and *Serratia marcecsens* as plant growth promoters and biocontrol agents)	North Bengal University	89.5%	A+ (obtained in Ph.D. course work Examination)
2	2017(17th DEC)	CSIR UGC NET LS	CSIR, NEW DELHI	*AIR 46	*AIR 46
3	2007	GATE	-	Gate score-317	GATE Percentile 83.0 percentile
4	2006	M.Sc (Botany) Spl. Paper-Microbiology	North Bengal University	80.41%	1st class 1st (Gold Medalist) (Distinction)
5	2004	B.Sc (Botany Hons.)	North Bengal University	65.12%	1st class (Distinction)
6	2001	Higher Secondary	WBCHSE	65.1%	1st Division
7	1999	Madhyamik Pariksha	WBBSE	81.37%	1st Division

*AIR= ALL INDIA RANK.

TEACHING EXPERIENCE

Time Period	DESIGNATION	INSTITUTE
01.11.2017-22.01.2020	Full time Assistant Professor in Botany on contractual basis	GYAN JYOTI COLLEGE, affiliated to North Bengal University
24.01.2020- Continuing	Assistant Professor in Botany, Raiganj University	Raiganj University, University Road, Uttar Dinajpur

RESEARCH EXPERIENCE

YEAR	DESIGNATION	INSTITUTE
01.06.2007-31.05.2009	Junior Research Scholar for two years under DBT sponsored project entitled " *Studies on two rhizobacterial isolates of tea for development as biofertilizer and biocontrol agent*"	North Bengal University
01.06.2009-02.05.2010	SeniorResearch Scholar for one year under DBT sponsored project entitled " *Studies on two rhizobacterial isolates of tea for development as biofertilizer and biocontrol agent*"	North Bengal University
27.05.2011- 26.06.2012	Senior Research Scholar for one year in the CSIR sponsored project " *Amelioration of abiotic stresses in wheat varieties by osmo-tolerant and plant growth promoting rhizobacteria and elucidation of their mechanism of action"*	North Bengal University
01.12.2012-31.03.2014	Senior Research Scholar for one year and three months in ICAR funded research project of NBAIM entitled " *Application of Microorganisms in Agriculture and Allied Sectors"*	North Bengal University
13.08. 2014 – 31.03.2016	Post Doctoral Fellow (Research Associate- CSIR) in a CSIR sponsored project "Screening for resistance in wheat germplasm against spot blotch disease and immunological characterization of defense proteins triggered by *Bipolaris sorokiniana*"	North Bengal University

ADMINISTRATIVE EXPERIENCE

1. Member, PG Board of Studies in Botany, Raiganj University

2. Member, UG Board of Studies in Botany, Raiganj University

3. Member, UG Board of Moderators in Botany, University of North Bengal

4. Member, UG & PG Board of Moderators in Botany, Raiganj University

5. Course Coordinator for the Diploma Course in Fishery, Raiganj University w.e.f. 15.02.2021

EXAMINATION DUTY PERFORMED IN UG & PG

EXAMINATION, 2020

Department of Botany, Raiganj University

1. **PAPER SETTER:** a) UG BOTANY (HONS.)- SEMESTER-VI- BOTDSE-4 (THEO+PRAC)

b) B. Sc. Part – III (1+1+1 System)- Paper – VII

c) B. Sc. Part – II (1+1+1 System)- Paper – IV

d) B. Sc. Part – I (1+1+1 System)- Paper – II

e) PG- Semester II- BOTPG-2305 (Theoretical Course)

f) UG BOTANY (HONS.)- SEMESTER-IV-PAPER-X

g) PG- Semester I- BOTPG-1305 (Theoretical Course)

h) PG- Semester I- BOTPG-1204 (Practical Course)

i) PG- Semester III- BOTPG-3203 (Practical Course)

j) UG BOTANY (HONS.)- SEMESTER-V- BOTDSE-2 (Theoretical Course)

k) UG BOTANY (HONS.)- SEMESTER-V- BOTDSE-2 (Practical Course)

l) UG 1st Semester Program Course- Environmental Studies- AECC 1

2. **MODERATOR:** a) UG BOTANY (HONS.)- SEMESTER-VI- BOTHC-XIII, BOTHC-XIV, BOTDSE-3 & BOTDSE-4

b) UG General Elective (for Back Candidates of final semester only)

Semester-II- GE-II

c) UG General Elective (for Back Candidates of final semester only)

Semester-IV- GE-IV

d) UG Prog. Course (for Back Candidates of final semester only)

Semester-II- BOTDSC-2

e) UG Prog. Course (for Back Candidates of final semester only)

Semester-IV- BOTDSC-4

f) UG Programme Course- Semester-VI- BOTDSE-2

g) B. Sc. Part – II (1+1+1 System)- Paper – IV and Paper- V

h) PG- Semester IV- BOTM-4102, BOTM-4103- Microbiology

i) PG- Semester IV- BOTM-4102, BOTM-4103- Plant Physiology, Biochemistry and Molecular Biology)

j) PG- Semester I- BOTPG-1201, BOTPG-1202, BOTPG-1203

k) PG- Semester III- BOTPG-3201, BOTPG-3202, BOTPG-34A4 (Biochemistry & Mol. Bio.); BOTPG-34E4 (Microbiology); BOTPG-34G4 (Mycology & Plant Pathology); BOTPG-34I4 (Plant Physiology & Metabolism)

l) UG General Elective- Semester-I- GE-I

m) UG General Elective- Semester-I- GE-III

n) UG BOTANY (HONS.)- SEMESTER-I- BOTHC-I, BOTHC-II

o) UG BOTANY (HONS.)- SEMESTER-III- BOTHC-V, BOTHC-VI, BOTHC-VII & BOTHSEC-1

p) UG BOTANY (HONS.)- SEMESTER-V- BOTHC-XI, BOTHC-XII, BOTDSE-1, BOTDSE-2

q) UG 1st Semester Program Course- Environmental Studies- AECC 1

3. **EXAMINER:**

a) UG BOTANY (HONS.)- SEMESTER-VI- BOTDSE-4

b) [PRACTICAL]- PG- Semester IV- BOTM-4202 (Microbiology)

c) [PRACTICAL]- PG- Semester IV- BOTM-4202 (Mycology & Plant Pathology

d) PG- Semester II- BOTPG-2305 (Theoretical Course)

e) UG BOTANY (HONS.)- SEMESTER-IV-PAPER-X

f) PG- Semester I- BOTPG-1305 (Theoretical Course)

g) PG- Semester I- BOTPG-1204 (Practical Course)

h) PG- Semester III- BOTPG-3203 (Practical Course)

i) UG BOTANY (HONS.)- SEMESTER-I- BOTHC-I (Practical Course)

j) UG BOTANY (HONS.)- SEMESTER-III- BOTHC-VII (Practical Course)

k) UG BOTANY (HONS.)- SEMESTER-V- BOTDSE-2 (Theoretical Course)

l) UG BOTANY (HONS.)- SEMESTER-V- BOTDSE-2, BOTHC-XI (Practical Course)

4. **SCRUTINISER:**

a) UG BOTANY (HONS.)- SEMESTER-VI- BOTHC-XIII, BOTHC-XIV, BOTDSE-3 & BOTDSE-4

b) PG- Semester IV- BOTM-4102, BOTM-4103- Plant Physiology, Biochemistry and Molecular Biology)

c) UG BOTANY (HONS.)- SEMESTER-III & IV- BOTHC III/ BOTHC IV/ BOTHC VIII/ BOTHC IX

d) PG- Semester I- BOTPG-1201, BOTPG-1202, BOTPG-1203

e) PG- Semester III- BOTPG-34A4 (Biochemistry & Mol. Bio.); BOTPG-34E4 (Microbiology); BOTPG-34G4 (Mycology & Plant Pathology); BOTPG-34I4 (Plant Physiology & Metabolism)

f) UG BOTANY (HONS.)- SEMESTER-I- BOTHC-I, BOTHC-II

g) UG BOTANY (HONS.)- SEMESTER-III- BOTHC-VII

5. **REASSESSOR:**

a) UG General Elective (for Back Candidates of final semester only)

Semester-II- GE-II

b) UG General Elective (for Back Candidates of final semester only)

Semester-IV- GE-IV

c) UG Prog. Course (for Back Candidates of final semester only)

Semester-II- BOTDSC-2

d) UG Prog. Course (for Back Candidates of final semester only)

Semester-IV- BOTDSC-4

e) UG Programme Course- Semester-VI- BOTDSE-2

f) UG General Elective- Semester-I- GE-I

g) UG General Elective- Semester-I- GE-III

h) UG BOTANY (HONS.)- SEMESTER-III- BOTHSEC-1

i) UG BOTANY (HONS.)- SEMESTER-V- BOTDSE-1, BOTDSE-2

6. **TABULATOR:** a) UG BOTANY (HONS. & PROGRAM)- SEMESTER-II & IV

EXAMINATION DUTY PERFORMED IN UG EXAMINATION

(2018-2020)

University of North Bengal

1. **PAPER SETTER:** a) UG BOTANY (HONS.)- SEMESTER-IV- SEC-II

b) UG BOTANY (Prog.)- SEMESTER-IV- SEC-II

c) UG BOTANY (Prog.)- SEMESTER-II- BOTDSC-2

2. **SPOT EVALUATOR:** a) UG BOTANY (HONS.)- SEMESTER-IV-BOTCC8

3. **Paper Setter** and Spot Evaluator in B.Sc. Part III (1+1+1) system-Microbiology (Honours/Paper-VIII- Food & Industrial Microbiology) Theoretical Examination, 2018.

4. **External Examiner** at A.C. College, Jalpaiguri in B.Sc. Part II (1+1+1) system- Botany (Honours) Practical Examination, 2018.

5. **External Examiner** at North Bengal St. Xavier's College, Rajganj campus, Jalpaiguri in B.Sc. Part I (1+1+1) system-Botany (General) Practical Examination, 2018.

6. **Internal Examiner** at Gyan Jyoti College, Siliguri in B.Sc. Part I (1+1+1) system-Botany (General) Practical Examination, 2018.

7. **Spot Evaluator** in evaluating answer scripts in Botany (HONS)-paper-CC1(Algae & Microbiology) & Botany (GENERAL)-paper-DSC1 (Biodiversity-Microbes, Algae, Fungi and Archegoniate)- CBCS U.G 1st Semester Examination, 2018.

8. **Examiner** for re-assessment of evaluated answer scripts in Botany (HONS)-paper-CC1, CC2 & Botany (GENERAL)-paper-DSC1, GE1 & GE4 for the CBCS U.G 1st Semester Examination, 2018.

9. **Paper Setter** in Botany (GENERAL)-paper-DSC1(paper-2) for the CBCS U.G 2nd Semester(B.Sc. Program) Examination, 2019.

10. **External Examiner** at North Bengal St. Xavier's College, Rajganj campus, Jalpaiguri in CBCS U.G. 2nd Semester Botany (Honours) Practical Examination, 2019.

11. **External Examiner** at Raiganj University, Raiganj in U.G. Botany (Pass) (1+1+1) system Part III General Practical Examination, 2019.

12. **External Examiner** at PMS College Centre, Malbazar in U.G. Botany (Pass) (1+1+1) system Part III General Practical Examination, 2019.

13. **Internal Examiner** at Gyan Jyoti College, Siliguri in CBCS U.G. 2nd Semester Botany (Honours) & General (DSC 2) Practical Examination, 2019.

14. **Paper Setter** in Botany (SKILL ENHANCEMENT COURSE-HONS+PROG.)-papers-Herbal Technology and Nursery & Gardening for the CBCS U.G 3rd Semester (B.Sc. HONS + Program) Examination, 2019.

15. **Spot Evaluator** in Botany (General)-paper-IV and I&II in U.G 2nd & 1st year (1+1+1) Examination, 2019.

16. **Moderator** in U.G 3rd semester examination (CBCS Mode) 2019.

17. **Examiner** for re-assessment of evaluated answer scripts in Botany (HONS)-paper-CC3, CC4 & Botany (GENERAL)-paper-DSC2, GE2 for the CBCS U.G 2nd Semester Examination, 2019.

18. **Internal Examiner** at Gyan Jyoti College, Siliguri in CBCS U.G. 1st Semester Botany (Honours)-papers- CC1 & CC2 Practical Examination, 2019.

19. **Internal Examiner** at Gyan Jyoti College, Siliguri in CBCS U.G. 3rd Semester Botany (Honours)-paper- CC5 Practical Examination, 2019.

20. **External Examiner** at A.C. College, Jalpaiguri in CBCS U.G. 3rd Semester Botany (Honours)- paper- CC6 Practical Examination, 2019.
21. **External Examiner** at North Bengal St. Xavier's College, Rajganj campus, Jalpaiguri in CBCS U.G. 3rd Semester Botany (Honours)- paper- CC5 Practical Examination, 2019.
22. **Examiner** as post publication scrutinizer in BOT(H) & BOT(G)- Paper-VI, Part II examination, 2019.
23. **Internal Examiner** at Gyan Jyoti College, Siliguri in CBCS U.G. 3rd Semester Botany (GE)- paper- GE (Biodiversity-Microbes, Algae, Fungi & Archegoniate) Practical Examination, 2019.
24. **Spot Evaluator** in Botany (HONS)-paper-CC1 & Botany (Generic Elective)-paper-GE1 in CBCS U.G 1st Semester Theoretical Examination, 2019.
25. **Spot Evaluator** in Botany (HONS)-paper-CC6, Botany (SEC/HONS)-paper-SEC1 & Botany (General)- paper- DSC3 in CBCS U.G 3rd Semester Theoretical Examination, 2019.

TECHNICAL KNOW HOW

1. ***Characterization of Microorganisms***

(a) Morphological Characterization: *In vitro* characterization of microorganisms for Agriculturally Important properties like phosphate solubilization, chitin degradation, protein hydrolysis, IAA production, HCN production, Siderophore production.

(b) Molecular characterization: 16S rDNA and 18S rDNA sequencing, NCBI BLAST.

2. ***Instrumentation***

(a) Spectrophotometric analysis of important phytochemical compounds

(b) HPLC analysis of different phytochemical compounds

(c) SDS-PAGE analysis of total soluble protein (TSP)

(d) PAGE analysis of isozymes

(d) Scanning Electron Microscopy (SEM) and Transmission Electron Microscopy (TEM)

(e) Freeze dry techniques (Lyophilization) for sample processing

3. ***Immunotechniques***

(a) Preparation of plant/fungal/bacterial antigens

(b) Production of polyclonal antibodies and IgG purification for immunological studies

(c) Enzyme Linked Immuno Sorbent Assay (ELISA)

(d) DOT immunobinding assays (DIBA)

(e) Immunofluorescence

(f) Western blotting

4. ***Molecular Techniques***

(a) DNA isolation
(b) Polymerase chain reaction (PCR) techniques
(c) RAPD-PCR analysis
(d) DGGE analysis
(e) cDNA Microarray analysis

(f) Quantitative RT PCR

Sequence of following microorganisms submitted to NCBI

NCBI Accession No	***Name of Organism***	**Category**
NCBI JX312687	*Bacillus megaterium* (TRS 7)	PGPR
NCBI JN020963	*Serratia marcescens* (TRS1)	PGPR
NCBI JN983127	*Bacillus amyloliuefaceins* (TRS 6)	PGPR
NCBI KJ917553	*Pseudomonas poae* (RM K03)	PGPR
NCBI KM066950	*Bacillus stratosphericus* (CL.RH.01)	PGPR
NCBI KM117174	*Bacillus amyloliquefaciens* (M RH 131)	PGPR
NCBI KM117175	*Bacillus methylotrophicus* (M RH 130)	PGPR
NCBI KM192206	*Bacillus thuringiensis* (M RH 127)	PGPR
NCBI KX894280	*Streptomyces tricolor* (ARHS/PO26)	Actinomycetes
NCBI KX894281	*Streptomyces flavogriseus* (ARHS/PO27)	Actinomycetes
NCBI JX660689	*Bacillus safensis* (W10)	Salt tolerant PGPR
NCBI JX660688	*Ochrobactrum pseudogregnonense* (IP8)	Salt tolerant PGPR
NCBI KJ917554	*Bacillus mycoides* (MHB)	Mycorrhiza Helper Bacterium
NCBI KT768093	*Enterobacter asburiae* (E/B/L/P-2)	Endophyte
NCBI KM066949	*Bipolaris sorokiniana* (WH.PBW.IP.04)	Foliar pathogen
NCBI KT768092	*Bipolaris oryzae* (R1.DO.01)	Foliar pathogen
NCBI KM491736	*Colletotrichum gloeosporioides* (SOM.CL.02)	Foliar pathogen
NCBI KM491737	*Curvularia sp* (SOM.CV.03)	Foliar pathogen

RESEARCH PUBLICATIONS:

(RG SCORE- 9.87, h-index-7, RG citation- 271; Google Scholar citation- 357, h- index-10)

Published In National and International Journals
***International Journals*= 13**
National Journals= 20

1. Evaluation of *Ochrobactrum anthropi* TRS-2 and its talc based formulation for enhancement of growth of tea plants and management of brown root rot disease. U. Chakraborty, B.N.Chakraborty, M. Basnet and **A.P.Chakraborty**
***Journal of Applied Microbiology*, 107: 625-634 (2009); NAAS rating 2019 – 8.16 (Jrn ID-J069); Thomson Reuters (SCI) impact factor -2.386**

2. Influence of *Serratia marcescens* TRS-1 on growth promotion and induction of resistance in *Camellia sinensis* aginst *Fomes lamaoensis*
U. Chakraborty, B.N.Chakraborty and **A.P.Chakraborty**
***Journal of Plant Interactions*, 5(4): 261-271 (2010); NAAS rating 2019 – 7.66 (Jrn ID J422); Thomson Reuters (SCI) impact factor- 1.628**

3. Protection of tea *plants* against pest and pathogen through combined application of pesticide and plant growth promoting rhizobacterium
A.P.Chakraborty, B.N.Chakraborty and U. Chakraborty; ***Journal of Mycology and Plant Pathology*, 40(4): 519-531 (2010); NAAS rating 2019– 5.79 (Jrn ID- J363)**

4. Plant growth promotion and amelioration of salinity stress in crop plants by a salt-tolerant bacterium
Usha Chakraborty, Swarnendu Roy**, Arka Pratim Chakraborty**, Pannalal Dey and Bishwanath Chakraborty
***Recent Research in Science and Technology*, 3(11): 61-70 (2011)**

5. Dual application of *Bacillus pumilus* and *Glomus mosseae* for improvement of health status of mandarin plants
U. Chakraborty, B.N.Chakraborty, S.Allay, U.De and **A.P.Chakraborty**
***Acta Horticulturae*, 892: 215-229 (2011)**

6. Evaluation of *Bacillus megaterium* and *Serratia marcescens* and their bioformulations for promoting growth of *Camellia sinensis*
Chakraborty U, Chakraborty BN and **Chakraborty AP**
International Journal of Tea Science, 8(1): 69-80 (2012)
NAAS rating 2016 – 2.63 (Jrn ID- I179)

7. Induction of plant growth promotion in *Camellia sinensis* by *Bacillus megaterium* and its bioformulations
U. Chakraborty, B.N.chakraborty and **A.P.Chakraborty**
***World Journal of Agricultural Sciences*, 8(1): 104-112 (2012)**

8. Biological control sclerotial blight of tea using Arbuscular Mycorrhizal fungus and plant growth promoting rhizobacterium
B.N.Chakraborty, U. Chakraborty, U.De and **A.P.Chakraborty**
***International Journal of Tea Science*, 8(4): 27-35 (2012); NAAS rating 2016 – 2.63 (Jrn ID- I179)**

9. Water stress amelioration and plant growth promotion in wheat plants by osmotic stress tolerant bacteria
U.Chakraborty, B.N.Chakraborty, **A.P.Chakraborty** and P.L.Dey
***World Journal of Microbiology and Biotechnology*, 29: 789-803 (2013)**
NAAS rating 2019 – 8.10 (Jrn ID W024)
Thomson Reuters (SCI) impact factor- 2.100

10. Plant growth promoting Rhizobacteria mediated improvement of health status of tea plants
U. Chakraborty, B.N.Chakraborty, **A.P.Chakraborty**, K.Sunar and P.L.Dey
***Indian Journal of Biotechnology*, 12: 20-31 (2013)**
NAAS rating 2019 – 6.37 (Jrn ID I043)
JCR impact factor (2017)- 0.368

11. Water and salt stress alleviation in wheat induced by rhizosphere bacteria with multi- functional traits.
Chakraborty U, Chakraborty BN, **Chakraborty AP** and Dey PL.
***International Journal of Bioresource and Stress Managemen**t*, **4(2):** 214-219 **(2013). NAAS rating 2019 – 4.65 (Jrn ID I179)**

12. Molecular identification and immunological characterization of plant growth promoting rhizobacteria of *Camellia sinensis*
B.N. Chakraborty, U. Chakraborty, **A.P. Chakraborty** and P.L. Dey
***International Journal of Tea Science*, 10(3&4): 41-52 (2014)**
NAAS rating 2016 – 2.63 (Jrn ID- I179)

13. *Bacillus megaterium* from tea rhizosphere promotes growth and induces systemic resistance in tea against *Sclerotium rolfsii*
A.P. CHAKRABORTY, B.N. CHAKRABORTY and U. CHAKRABORTY
Indian Phytopathology, 68(3) **(2015**); NAAS Rating 2019 -5.90 (Jr, ID-1104).

14. Induction of resistance in *Camellia sinensis* against *Sclerotium rolfsii* by dual application of *Rhizophagus fasciculatus* and *Bacillus pumilus*
Bishwanath Chakraborty, Usha Chakraborty, Utanka Kumar De and **Arka Pratim Chakraborty**
Archives of Phytopathology and Plant Protection, 48: 825-840, **2016**; SJR Impact Factor: 0.209; SNIP Impact Factor: 0.345(Scopus).

15. Serological and molecular detection of *Bipolaris sorokiniana* Sacc. causing Spot blotch disease of wheat
B. N. CHAKRABORTY, U. CHAKRABORTY, **A. P. CHAKRABORTY** AND P. SASHANKAR
Journal of Mycopathological Research, 54(1): 117-125, **2016** (ISSN 0971-3719); NAAS rating 2019 – 4.90 (Jr. ID-J364)

16. Resistance in tea plants against root rot pathogens induced by arbuscular mycorrhizal fungi and plant growth promoters
U. CHAKRABORTY, B. N. CHAKRABORTY, **A. P. CHAKRABORTY** AND U.K.DE
Journal of Mycopathological Research, 54(2) : 211-224, **2016** (ISSN 0971-3719); NAAS rating 2019 – 4.90 (Jr. ID-J364)

17. Development of Immunological Formats for Detection of *Bipolaris sorokiniana* in Wheat Leaf and Strategies for Induction of Resistance against Spot Blotch Disease using Bioinoculants
A.P. Chakraborty, U. Chakraborty and B.N. Chakraborty
Journal of Mycology and Plant Pathology, 46(1): 21-37, **2016**; NAAS rating 2019 – 5.79 (Jrn ID- J363)

18. Evaluation of Streptomyces and non- Streptomyces Actinomycetes isolates for growth promotion in *Vigna radiata* and their use as biocontrol agent against *Sclerotium rolfsii*
Pushpanjali Ray, **Arka Pratim Chakraborty** and Bishwanath Chakraborty
NBU Journal of Plant Sciences (ISSN NO-09746927)- 10(1): 73-79, **2016.**

19. Biochemical and molecular characterization of *Streptomyces* species isolated from Agricultural field of North Bengal and evaluation for growth improvement and suppression of sclerotial blight diseases of *Vigna radiata*
Pushpanjali Ray, **Arka Pratim Chakraborty** and Bishwanath Chakraborty
Journal of Mycology and Plant Pathology, 46(4): 344-354, **2016**; NAAS rating 2019 – 5.79 (Jrn ID- J363)

20. PGPR in managing root rot disease and enhancing growth in mandarin (*Citrus reticulata* Blanco.) seedlings
B.N. Chakraborty, S. Allay, **A.P. Chakraborty** and U. Chakraborty
Journal of Horticultural Sciences, 11(2): 104-115, **2017**; NAAS rating 2019 – 3.43 (Jrn ID- J273)

21. Biochemical Responses of *Sorghum bicolor* and *Triticum aestivum* to spot blotch disease and induction of resistance by Plant Growth Promoting Rhizobacteria .
Priyanka Bhattacharjee, Jayanwita Sarkar, **Arka Pratim Chakraborty**, Usha Chakraborty and Bishwanath Chakraborty
Journal of Mycology and Plant Pathology, 47(3): 251-261, **2017**; NAAS rating 2019 – 5.79 (Jrn ID- J363)

22. *Bacillus safensis* from wheat rhizosphere promotes growth and ameliorates salinity stress in wheat
U Chakraborty, B N Chakraborty, P L Dey and **A P Chakraborty**
Indian Journal of Biotechnology vol 17, JULY **2018**; NAAS rating 2019 – 6.37 (Jrn ID I043), JCR impact factor (2017)- 0.368

23. Biochemical responses of wheat plants primed with Ochrobactrum pseudogrignonense and subjected to salinity stress
U. chakraborty, B.N.Chakraborty, P.L.Dey, **A.P.Chakraborty** and J.Sarkar
Agricultural Research Journal (Springer), **https://doi.org/10.1007/s40003-018-0394-7;** NAAS rating 2019- 5.60 (Jrn ID A090)

24. Mycorrhiza Helper Bacteria: Future Prospects
Subash Kumar Gupta, **Arka Pratim Chakraborty**
*International Journal of Research and Review (E-IS*SN: 2349-9788; P-ISSN: 2454-2237); Vol.7; Issue: 3; **March 2020** (pp-387-391). Index Copernicus Value for 2018= 95.79.

25. Cyanobacterial Biofertilizer for sustainable agriculture and environment
Subash Kumar Gupta, **Arka Pratim Chakraborty**
International Journal of Creative Research Thoughts **(**ISSN: 2320-2882); Vol.8; Issue: 4; **April 2020** (pp-4-10). IMPACT FACTOR-7.97(GOOGLE SCHOLAR)

26. Carrier Based Bioformulations of PGPR- Characteristics, Shelf life and Application in Improving Health Status of Crop Plants- A Mini Review
Arka Pratim Chakraborty
International Journal of Research and Review (E-ISSN: 2349-9788; P-ISSN: 2454-2237); Vol.7; Issue: 4; **April 2020** (pp-88-98). Index Copernicus Value for 2018= 95.79

27. Analyses of soluble proteins and phenolics in susceptible and resistant wheat genotypes against *Bipolaris sorokiniana* causing spot blotch disease
A. P. Chakraborty, U. Chakraborty and B. N. Chakraborty
Journal of Mycopathological Research, 58(1&2): 65-69; **April &July issues 2020** (ISSN 0971-3719); NAAS rating 2019 – 4.90 (Jr. ID- J364)- ***UGC CARE LISTED***

28. Immunity induced in wheat plants against *Bipolaris sorokiniana* by AMF colonization and application of *Bacillus altitudinis*
Arka Pratim Chakraborty, Bishwanath Chakraborty and Usha Chakraborty
Journal of the Botanical Society of Bengal, 74(1): 86-97, **2020** (ISSN 0971-2976)- ***UGC CARE LISTED***

29. Multiple Mechanisms of Actions and Role in Ectomycorrhizae symbiosis by Mycorrhiza Helper Bacteria: A Mini Review
Papan Chowhan, **Arka Pratim Chakraborty**
Journal of Advanced Scientific Research; 11(3) Suppl 7: 10-15; **2020** (ISSN- 0976-9595)***-UGC CARE LISTED***

30. Three dimensional plant growth promoting activity of *Trichoderma asperellum* in maize (*Zea mays* L.) against *Fusarium moniliforme*
Zerald Tiru , Monalisha Sarkar , Ayon Pal , **Arka Pratim Chakraborty** & Parimal Mandal
Archives of Phytopathology and Plant Protection, DOI: 10.1080/03235408.2020.1860420
SJR Impact Factor: 0.209; SNIP Impact Factor: 0.345(Scopus).

31. Effect of different vegetable-grains media on variability in mycelial growth pattern and sclerotia formation of *Rhizoctonia solani*
Zerald Tiru , Monalisha Sarkar , **Arka Pratim Chakraborty,** Ayon Pal ,Parimal Mandal
Journal of Advanced Scientific Research; 12(1) Suppl 1: 295-300; March, **2021** (ISSN- 0976-9595)
UGC CARE LISTED

32. *In Vitro* Antagonistic Study of Maize Root Colonizing Fungal Isolates Against *Fusarium moniliforme* Causing Ear Rot Disease of Maize
Zerald Tiru, Monalisha Sarkar, **Arka Pratim Chakraborty**, Ayon Pal, Parimal Mandal
Journal of Tropical Life Science; 11(2): 133-139, May 2021; doi: 10.11594/jtls.11.02.02; (E-ISSN- 2527-4376)
UGC CARE LISTED

33. HPLC detection of different isomers of catechins in tea leaves induced by single and dual application of *Bacillus megaterium* and *Serratia marcescens*
A. P. Chakraborty, B. N. Chakraborty and U. Chakraborty
Journal of Mycopathological Research, 59(2): 145-154; **June issue 2021** (ISSN 0971-3719); NAAS rating 2019 – 4.90 (Jr. ID- J364)- ***UGC CARE LISTED***

IN PROCEEDING VOLUME:

1. Growth enhancement of tea seedlings induced by application of *Serratia marcescens* and *Bacillus megaterium* and associated biochemical changes.
A.P. Chakraborty, U. Chakraborty and B.N. Chakraborty
In: Molecular and Biotechnological approach to resource utilization- Microbes to Angiosperms (Edited by Samit Ray and Sukanta K. Sen), Levant Books Publishing House, 127-142, **(2015),** ISBN-978-93-84106-04-1.

2. Application of bioformulations of PGPRs for plant growth promotion in tea seedlings.
Chakraborty AP, Chakraborty BN and Chakraborty U.
Microbial Resources for Crop Improvement (Eds. Bishwanath Chakraborty and Usha Chakraborty), Satish Publishing House, 101-110, **(2013),** ISBN-978-93-81226-39-1.

3. Dual application of Glomus mosseae and Bacillus pumilus in enhancing growth of tea and suppression of sclerotial blight disease.
Chakraborty BN, Chakraborty U, De U, **Chakraborty AP** and Rai K.
Microbial Resources for Crop Improvement (Eds. Bishwanath Chakraborty and Usha Chakraborty), Satish Publishing House, 69-83, **(2013),** ISBN- 978-93-81226-39-1.

4. Isolation, biochemical and molecular characterization of salt-tolerant bacteria from rhizosphere of *Cynodon dactylon*- a facultative halophyte.
Chakraborty U, Chakraborty BN, Roy S, Dey PL and **Chakraborty AP.**
Microbial Resources for Crop Improvement (Eds. Bishwanath Chakraborty and Usha Chakraborty), Satish Publishing House, 239-250, **(2013),** ISBN- 978-93-81226-39-1.

IN BOOK CHAPTER:

1. Role of Microorganisms in Alleviation of Abiotic Stresses for Sustainable Agriculture.
Usha Chakraborty, Bishwanath Chakraborty, Pannalal Dey and **Arka Pratim Chakraborty (2015)**
In: Abiotic Stresses in Crop Plants (Eds U. Chakraborty and B.N. Chakraborty) CAB International pp.232-254, ISBN- 978-1-78064-373-1.

2. Functional and Genetic Diversity of Bacterial Isolates from Soil and Utilization of their Beneficial Traits for Crop Improvement.
U. Chakraborty, B. N. Chakraborty, P. L. Dey, K. Sunar and **A. P. Chakraborty (2016)**
In: Biodiversity and Sustainability: Opportunities and Challenges (Eds.: Rakhee Das Biswas and Abhijit Sarkar), 59-76, ISBN: 978-93-5254-104-1.

3. Growth Promoting Rhizobacteria: Diversity, Mechanisms of action and Perspectives in Agriculture.
U. Chakraborty, B.N. Chakraborty, **A.P. Chakraborty**, K. Sunar and P.L. Dey.
In: Review of Plant Pathology (Eds. B.N.Chakraborty and U.Chakraborty) vol.6: 215-268, **(2014),** Scientific Publishers, Jodhpur, ISBN-978-81-7233-916-6, ISSN-0972-9712.

BOOK PUBLISHED:

1. *Model Objective Question Bank- Botany For B.Sc. Undergraduate Students*
Author: Arka Pratim Chakraborty
Publishing house: LAP LAMBERT Academic Publishing; https://www.lap-publishing.com
https://www.morebooks.shop
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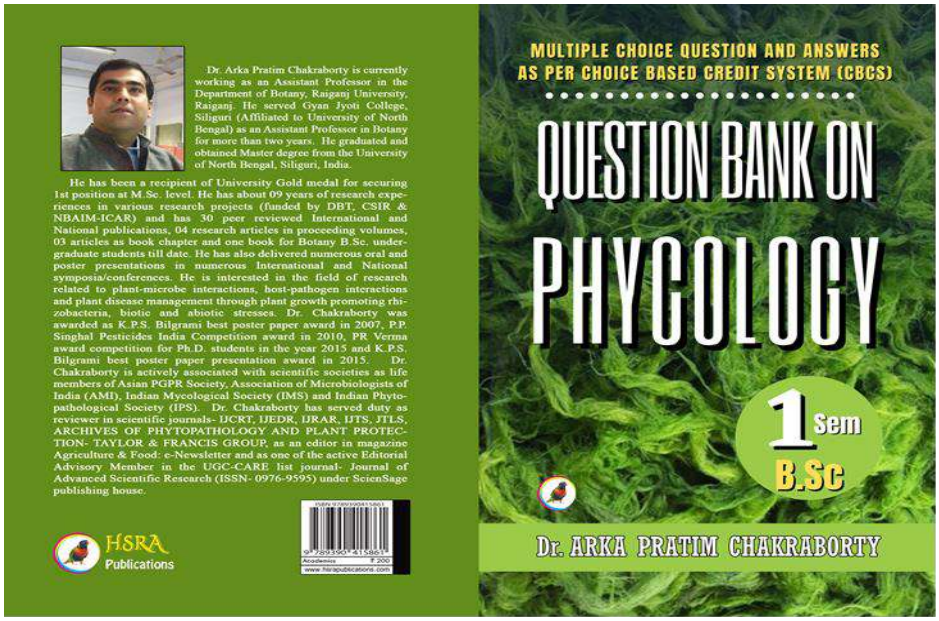
EAN: 9786202526128

2. QUESTION BANK ON PHYCOLOGY (WITH MULTIPLE CHOICE QUESTIONS AND ANSWERS)
(For B.Sc. Semester-I students) As per Choice Based Credit System (CBCS)
AUTHOR: Dr. ARKA PRATIM CHAKRABORTY
PUBLISHING HOUSE: HSRA Publications 2020
www.hsrapublications.com
ISBN- 9789390415861



3. MUSHROOM CULTURE TECHNOLOGY
For Degree Students As per Choice Based Credit System (CBCS)
Co-AUTHOR: Dr. ARKA PRATIM CHAKRABORTY
PUBLISHING HOUSE: HSRA Publications 2020
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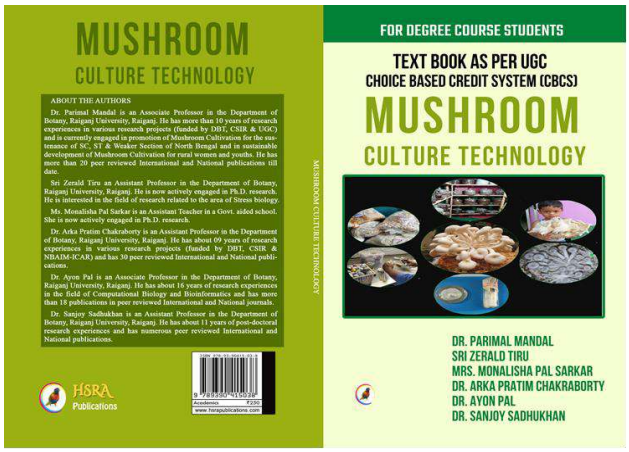
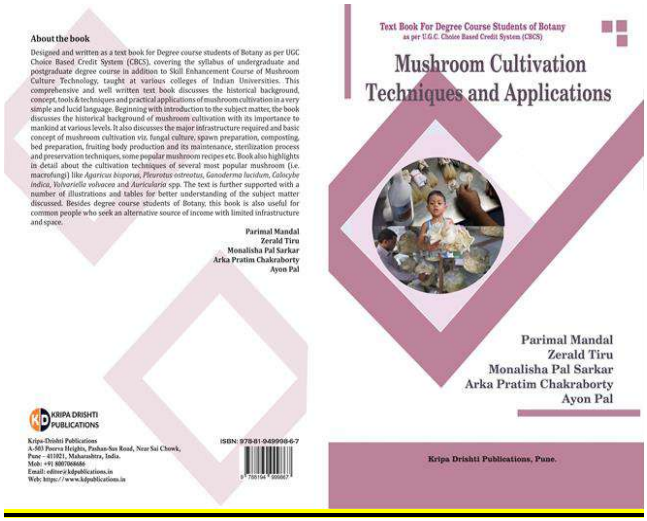
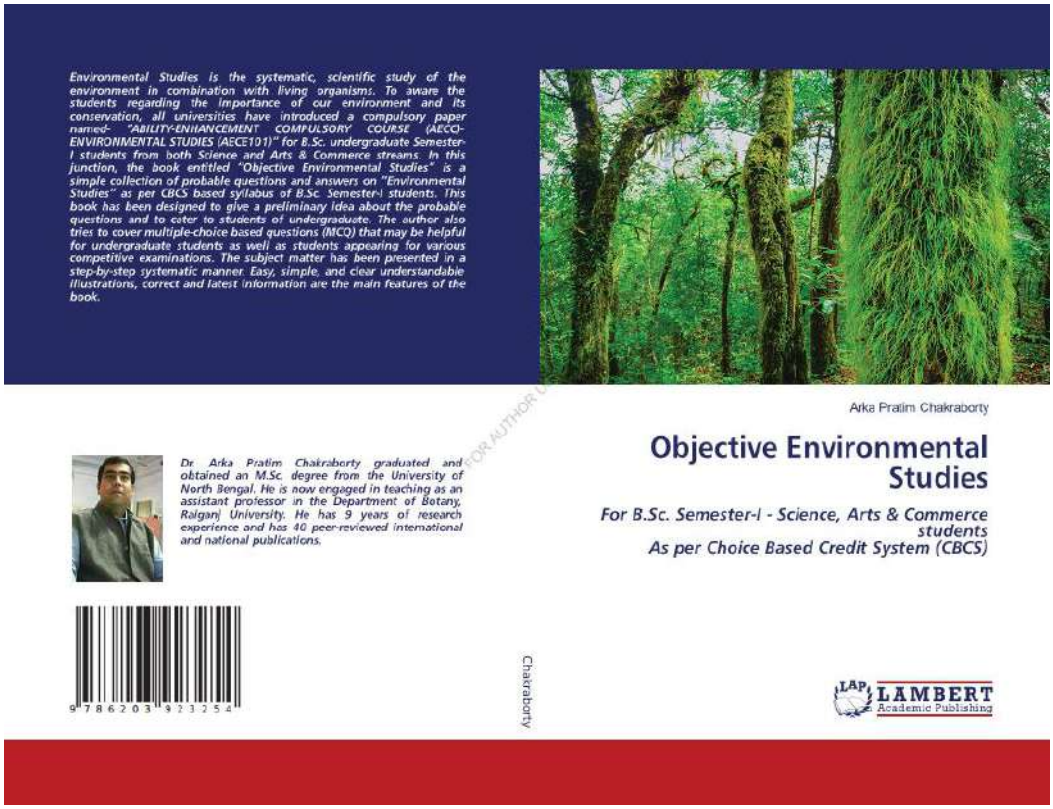
ISBN- 9789390415038



4. *MUSHROOM CULTIVATION TECHNIQUES AND APPLICATIONS*
For Degree Students As per Choice Based Credit System (CBCS)
Co-AUTHOR: Dr. ARKA PRATIM CHAKRABORTY
PUBLISHING HOUSE: Kripa Drishti Publication (KD PUBLICATIONS)
https://www.kdpublications.in/
ISBN- 978-81-949998-6-7



5. ***Objective Environmental Studies***
Author: Arka Pratim Chakraborty
Publishing house: LAP LAMBERT Academic Publishing; https://www.lap-publishing.com
https://www.morebooks.shop
ISBN- 9786203923254



1. BOOK CHAPTERS PUBLISHED IN A BOOK:

Basic Mycology and Mycotechnology

Co-AUTHOR in book chapters: Dr. ARKA PRATIM CHAKRABORTY

PUBLISHING HOUSE: Kripa Drishti Publication (KD PUBLICATIONS)

https://www.kdpublications.in/

ISBN- 978-93-90847-13-6

List of Chapters

Title: Fungal Growth Behaviours with Special Reference to Diversity, Forms and Negative Impact on Mankind
Author Name: Parimal Mandal and Ayon Pal

Title: Fungal Ultra Structure, Composition, Septation and Environmental Interaction
Author Name: Parimal Mandal and Zerald Tiru

Title: Fungal Enzyme Technology and Application for Mankind
Author Name: Parimal Mandal and Ayon Pal

Title: Feedstock and Solid Substrate Fermentations
Author Name: Parimal Mandal and Ayon Pal

Title: Industrial Application of Fungi in Ethanol, Beverage and Food Productions
Author Name: Parimal Mandal, Ayon Pal and Zerald Tiru

Title: Fungal Metabolites and its Application
Author Name: Parimal Mandal, Arka Pratim Chakraborty and Zerald Tiru

Title: Fungal Recombinant Technology
Author Name: Parimal Mandal, Zerald Tiru and Arka Pratim Chakraborty

Title: Plant-Mycorrhizal Interaction for Sustainable Agriculture
Author Name: Parimal Mandal, Zerald Tiru and Arka Pratim Chakraborty

Title: Plant and Plant Growth Promoting Fungi (PGPF) Interaction for Sustainable Agriculture
Author Name: Parimal Mandal and Zerald Tiru

Title: Wood Decaying Fungi: A Positive Impact on Nature
Author Name: Parimal Mandal, Arka Pratim Chakraborty and Zerald Tiru

Title: Mycoremediation: an Eco-Friendly Approach for Sustainable Development
Author Name: Parimal Mandal, Ayon Pal and Zerald Tiru

Title: Lichen: a Beauty of Nature
Author Name: Parimal Mandal, Ayon Pal and Zerald Tiru

Title: Fungal Genomics
Author Name: Parimal Mandal, Zerald Tiru, Arka Pratim Chakraborty and Ayon Pal

Title: Fungal Phylogeny and Evolution
Author Name: Parimal Mandal and Arka Pratim Chakraborty

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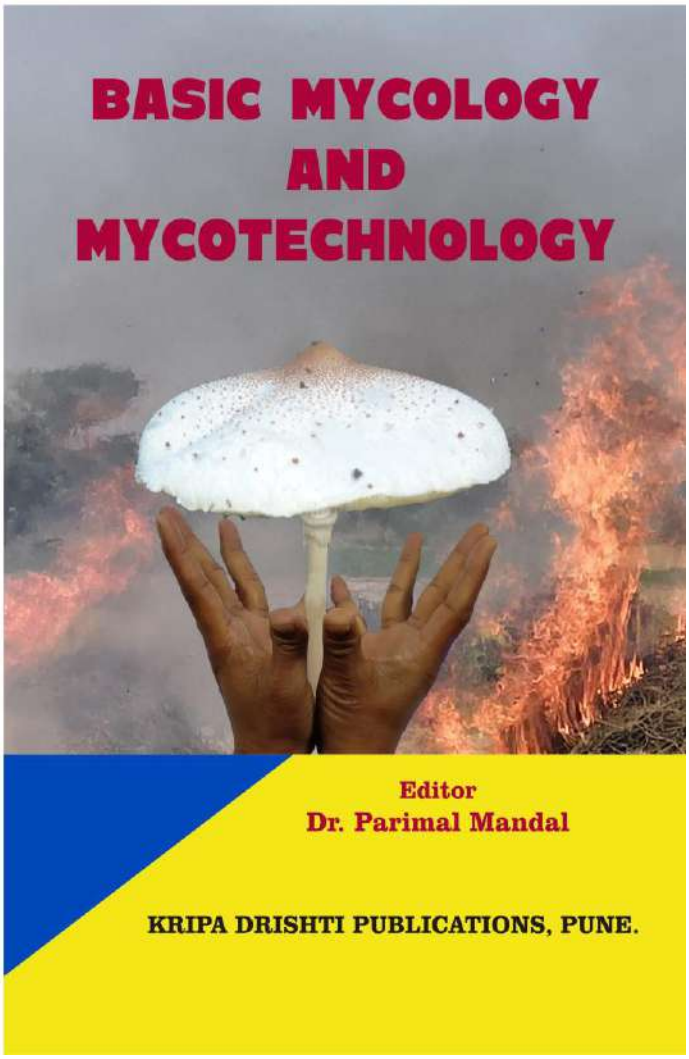


2. BOOK CHAPTERS PUBLISHED IN A BOOK:

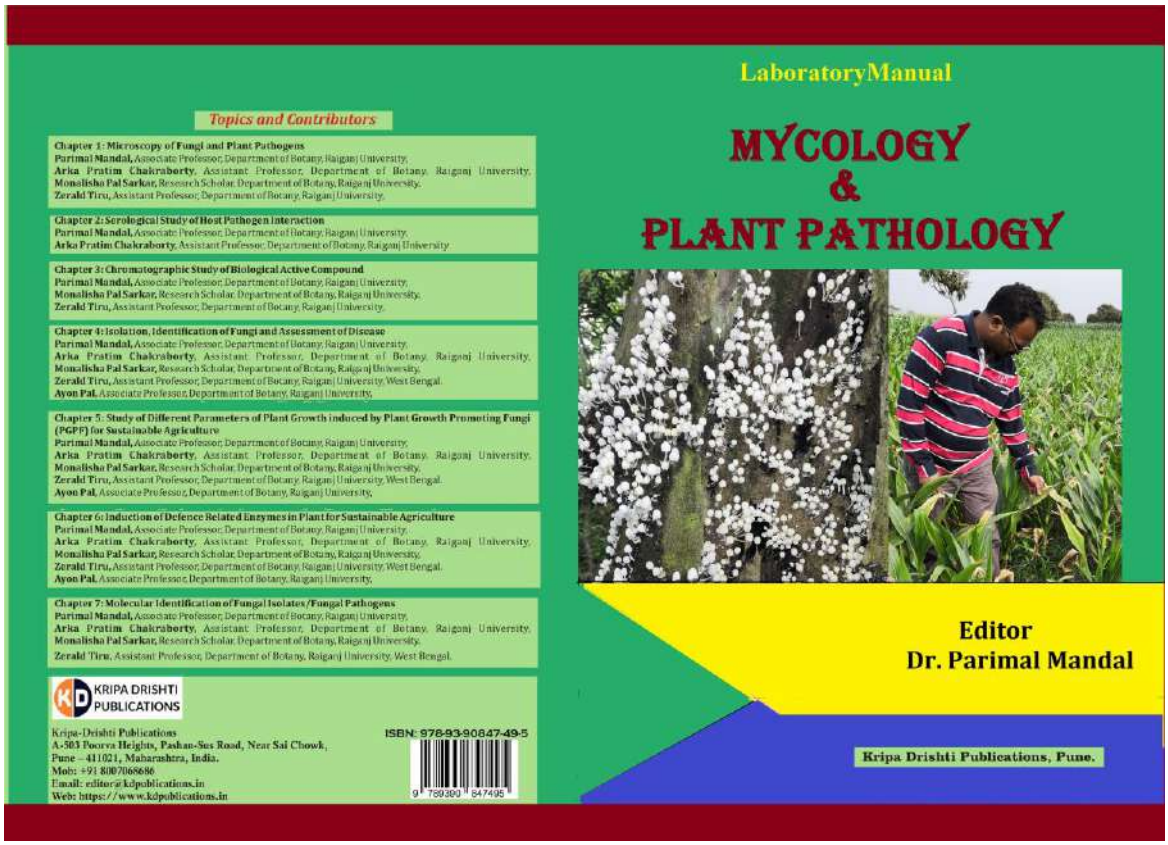
Laboratory Manual- Mycology and Plant Pathology

Co-AUTHOR in book chapters: Dr. ARKA PRATIM CHAKRABORTY

PUBLISHING HOUSE: Kripa Drishti Publication (KD PUBLICATIONS)

https://www.kdpublications.in/

ISBN- 978-93-90847-49-5



Awards Received

Awards	Title of Paper	Authors	Presented at
1. K.P.S. Bilgrami best poster paper award **2007**	Suppression of sclerotial blight and induction of resistance in tea by *Glomus fasciculatum* and rhizobacteria	U.Chakraborty, B.N.Chakrabrty, I. Bhagat, K.Rai and **A.P.Chakraborty**	2nd Asian Congress of Mycology and Plant Pathology, December 19-22, 2007, organized by ISMPP and Osmania University
2. Best poster paper award **2009**	Dual application of *Serratia marcescens* and *Bacillus megaterium* for plant growth promotion and root disease management of tea	U.Chakraborty, B.N.Chakrabrty and **A.P.Chakraborty**	5th International Conference on Biopesticides: Stakeholders' Perspectives, 26-30 April, 2009
3. P.P. Singhal Memorial Pesticides India Award Competition (2nd prize) **2010**	Protection of tea plants against pest and pathogen through combined application of pesticide and plant growth promoting rhizobacterium	**A.P.Chakraborty**, B.N.Chakrabrty and U.Chakraborty	32nd Annual Conference & Symposium of ISMPP, NOV 24-26, 2010; organized by Junagadh Agricultural University
4. K.P.S. Bilgrami best poster paper presentation award (2nd prize) **2013**	Utilization of microbial resources for crop improvement and disease management	B.N.Chakraborty, U.Chakraborty, P.L.Dey, K.Sunar, **A.P.Chakraborty**, U.De and S.Allay	34 Annual Conference & Symposium of ISMPP, January 21-23, 2013; organised by Department of Plant Pathology, Navsari Agricultural University, Gujarat
5. K.P.S. Bilgrami best poster paper presentation award (1st prize) **2014**	Harnessing the power of metabolomics and biopriming wheat plants to improve tolerance against biotic stress	B.N.Chakraborty, U.Chakraborty, **A.P.Chakraborty**, P.L.Dey, K.Sunar and Luis A.J.Mur	35th Annual Conference & Symposium of ISMPP, January 8-10,2014; organized by Dr. Panjabrao Desmukh Krishi Vidyapith, Akola, Maharastha
6. PR VERMA Award competition for Ph.D students, (1st Prize) **2015**	Development of Immunological Formats for Detection of *Bipolaris sorokiniana* in Wheat Leaf and Strategies for Induction of Resistance against Spot Blotch disease using Bioinoculants	**Arka Pratim Chakraborty**, Usha Chakraborty and Bishwanath Chakraborty	37 Annual Conference & Symposium of ISMPP, April 4-6,2016; organized by Rajendra Agricultural University, Bihar, Samatipur in collaboration with ISMPP.
7. K.P.S. Bilgrami best poster paper presentation award, (1st Prize) **2015**	Biochemical Responses of *Sorghum bicolor* and *Triticum aestivum* to spot blotch disease and induction of resistance by Plant Growth Promoting Rhizobacteria	Priyanka Bhattacharjee, Jayanwita Sarkar, **Arka Pratim Chakraborty**, Usha Chakraborty, Biswanath Chakraborty	37 Annual Conference & Symposium of ISMPP, April4-6, 2016; organized by Rajendra Agricultural University,Bihar, Samatipur in collaboration with ISMPP.

Published Abstracts in National/International Symposia/Conferences

1.Suppression of sclerotial blight and induction of resistance in tea by *Glomus fasciculatum* and rhizobacteria.
U. Chakraborty, B. N. Chakraborty, I.Bhagat, K.Rai and **A.P.Chakraborty**
Presented at 2nd Asian Congress of Mycology and Plant Pathology, December 19-22, 2007, organized by Indian Society of Mycology and Plant pathology and Osmania University Hyderabad.
Obtained K.P.S.Bilgrami first best poster paper award.

2.Application of PGPRs in tea rhizosphere for plant growth promotion and disease suppression.
U.Chakraborty, B.N.Chakraborty, M.Basnet and **A.P.Chakraborty**
Presentation of a paper in oral session in the National Symposium on"Diversity and Functionality of Plant and Microbes", January 24-25, 2008, organized by DRS Department of Botany, University of North Bengal.

3.An integrated approach for enhancing growth and yield of tea.
U. Chakraborty, B. N. Chakraborty and **A.P.Chakraborty**
Presented in poster session in the National Symposium on "New Biology in Agriculture", held at Panjab University, Chandigarh in collaboration with All India Biotech Association (AIBA), New Delhi on 7-8th November,2008.

4.Evaluation of *Serratia marcescens* (TRS1) as a plant growth promoter of tea plants.
U. Chakraborty, B. N. Chakraborty and **A.P.Chakraborty**
Participated and presented the paper in oral session at Silver Jubilee National Symposium on " Sustainable Utilization of Plant and Microbial Resources", Feb28-March1,2009; organized by DRS Department of Botany, University of North Bengal.

5.Dual application of *Serratia marcescens* and *Bacillus megaterium* for plant growth promotion and root disease management of tea.
U. Chakraborty, B. N. Chakraborty and **A.P.Chakraborty**
Presented at 5th International Conference on Biopesticides: Stakeholders'Perspectives, 26-30 April, 2009.
Obtained First Best poster paper award.

6.Isolation, biochemical and molecular characterization of salt-tolerant bacteria from rhizosphere of a facultative halophyte.
U. Chakraborty, B.N.Chakraborty, S.Roy, P.L.Dey and **A.P.Chakraborty**
Participated and Presented the paper in poster session at the 31st Annual Conference & Symposium on " Microbial Wealth- Plant Health", October 23-25, 2009; organized by Indian Society of Mycology and Plant Pathology and DRS- Department of Botany, University of North Bengal.

7.Dual application of *Glomus mosseae* and *Bacillus pumilus* in enhancing growth of tea and suppression of sclerotial blight disease.

U. Chakraborty, B.N.Chakraborty, U. De, **A.P.Chakraborty** and K. Rai
Presented the paper in oral session at the 31st Annual Conference Symposium on " Microbial Wealth- Plant Health", October 23-25, 2009; organized by Indian Society of Mycology and Plant Pathology and DRS- Department of Botany, University of North Bengal.

8.Application of bioformulations of PGPRs for plant growth promotion in tea seedlings.
U. Chakraborty, B.N. Chakraborty and **A.P. Chakraborty**
Participated and presented a paper in oral session at the 31st Annual Conference & Symposium on "Microbial Wealth- Plant Health", October 23-25, 2009; organized by DRS- Department of Botany, University of North Bengal in collaboration with Indian Society of Mycology and Plant Pathology.

9.Protection of tea plants against pest and pathogen through combined application of pesticide and plant growth promoting rhizobacterium.
A.P. Chakraborty, B.N. Chakraborty and U. Chakraborty
Participated and presented a paper in oral session for **P.P.Singhal Memorial Pesticides India Award competition** at the 32nd Annual Conference & Symposium on "Innovations in plant pathology research and human resource development", Nov, 24-26, 2010; organized by Junagadh Agricultural University in collaboration with Indian Society of Mycology and Plant Pathology.
Obtained 2nd prize in P.P.Singhal Memorial Pesticides India Award Competition.

10. Participated at the National seminar on "Diversity conservation and sustainable utilization of plants and traditional knowledge in Eastern Himalaya", Dec 14-16, 2010; jointly organized by DRS- Department of Botany, University of North Bengal and East Himalayan Society for Spermatophyte Taxonomy.

11.Growth improvement of wheat plants by halo-tolerant PGPR in salt stressed conditions and associated changes in antioxidative and defense enzyme activities.
Chakraborty A.P., Chakraborty B.N., Pradhan B and Chakraborty U.
Participated at the National seminar on "Advances in abiotic and biotic stress management of plants.", September 23-24, 2011; organized by DRS- Department of Botany, University of North Bengal in collaboration with Indian Society of Mycology and Plant Pathology.

12.Amelioration of salinity stress in crop plants by *Bacillus cereus* and elucidation of their mechanism of action.
A.P. Chakraborty, B.N. Chakraborty, S.Roy, P.L.Dey and U. Chakraborty
Presented in poster session at the International conference on "Microbial biotechnology for sustainable development", Nov.3-6, 2011; jointly organized by Panjab University, Chandigarh and Association of Microbiologists of India(AMI).

13. Search for agriculturally important microorganisms from different regions of North Bengal for their utilization in the improvement of crop health.
B.N.Chakraborty, U. Chakraborty, P.L.Dey, K.Sunar, P.Ray and **A.P.Chakraborty**
Participated and presented a paper in poster session at the 3rd Global Conference on " Plant Pathology For Food Security", January 10-13, 2012, jointly organized by Maharana Pratap University of Agriculture and Technology and Indian Society of Mycology and Plant Pathology.

14. Evaluation of plant growth promoting rhizobacteria for growth improvement of mandarin seedlings in nursery.
B.N.Chakraborty, U.Chakraborty, S.Allay and **A.P.Chakraborty**
Participated and presented a paper in oral session at the National Conference on "Biology and Bioinformatics of Economically Important Plants and Microbes", Feb. 17-19, 2012, jointly organized by DRS-Department of Botany and Bioinformatics Facility, University of North Bengal.

15. Functional and genetic diversity of bacterial isolates from soils of North Bengal and utilization of the beneficial traits for crop improvement.
U.Chakraborty, B.N.Chakraborty, P.L.Dey, K.Sunar and **A.P.Chakraborty**
Participated at the National Seminar on "Biodiversity and sustainability vis-à-vis economic development in the Northern parts of West Bengal", August 26-27, 2012, jointly organized by Department of Botany, Raiganj Surendranath Mahavidyalaya in collaboration with Department of Zoology, Alipurduar College, Jalpaiguri.

16. Alleviation of salinity and water stress in crop plants by osmo-tolerant plant growth promoting rhizobacteria.
U. Chakraborty, B.N.Chakraborty, **A.P.Chakraborty** and P.L.Dey
Participated at the National Symposium on Biotic and Abiotic Stresses on plants under changing climate scenario, **November 29-30, 2012**, jointly organised by Department of Plant Pathology, Uttar Banga Krishi Viswavidyalaya in collaboration with Indian Society of Mycology and Plant Pathology.

17. Utilization of Microbial Resources for Crop Improvement and Disease Management.
B.N.Chakraborty, U. Chakraborty, P.L.Dey, K. Sunar, **A.P.Chakraborty,** U. De and S. Allay
Presented at the 34th Annual Conference & Symposium of ISMPP on the theme "**Crop disease management: advances and challenges**", **January 21-23, 2013**, jointly organised by Department of Plant Pathology, Navsari Agricultural University, Gujarat in collaboration with ISMPP.
Obtained 2nd prize for Prof. Krishna Sahai Bilgrami best poster paper presentation award 2013.

18. Participated at the National seminar (**PlamiSymp 2013**) on "Recent Trends in Plant and Microbial Research", **March 22-23, 2013**, organized by the Department of Botany, NBU.

19. Induction of resistance in tea against root pathogens by plant growth promoters and arbuscular mycorrhizal fungi
U. Chakraborty, B.N. Chakraborty, **A. Chakraborty** and U.K. De
Paper was presented at 10th International Congress of Plant Pathology, held at Beijing, China, **August 25-30, 2013.** (***Acta Phytopathologia Sinica,*** Vol. 43, **2013**).

20. Biopriming of *Brassica juncea* and *Lycopersicon esculentum* seeds by PGPR isolates for growth promotion and induction of resistance against root rot pathogen.
K.Sunar, P.L.Dey, **A.P.Chakraborty**, A. Subba, U.Chakraborty and B.N.Chakraborty
Paper was presented at the National Conference on New Frontiers in Medicinal Plant Research, **Oct. 3-4, 2013**, organized by Department of Ethnobotany and Social Medicine Studies, Sikkim University.

21. Dual application of *Bacillus pumilus* and *Glomus mosseae* for improvement of health status of mandarin plants.
Chakraborty U, Chakraborty B.N., Allay S, De U and **Chakraborty A.P.**
Paper was presented at the Second International *Citrus* Biotechnology Symposium, held at Catania, Italy, **Nov. 30- Dec. 2, 2009**.

22. Growth enhancement of tea seedlings induced by application of *Serratia marcescens* and *Bacillus megaterium* and associated biochemical changes. (**CL-21**)
A.P.Chakraborty, B.N.Chakraborty and U. Chakraborty
Participated and presented a paper at the National Conference on Biodiversity and Natural Resource Utilization, jointly organized by the Department of Botany, Visva-Bharati, Shantiniketan and NBARD, **March 14-16, 2010**.

23. Improvement of health status of plantation and horticultural crops by PGPR and AMF.
U. Chakraborty, B.N.Chakraborty, **A.P.Chakraborty**, P.Roy Chowdhury, U.De and S. Allay.
Paper was presented at the National Symposium on "Microbial Diversity and Bio-prospecting" and ISMPP North zone meet, held at University of Jammu, **Oct. 29-30, 2010**.

24. Exploitation of salt tolerant bacteria for induction of growth promotion and alleviation of salinity stress in plants and analysis of their mechanism of action.
U. Chakraborty, S. Roy, **A.P.Chakraborty**, P.L.Dey and B.N.Chakraborty
Paper was presented **at the International Conference on Plant Science in Post Genomic Era (ICPSPGE-2011).**

25. Harnessing the power of metabolomics and biopriming wheat plants to improve tolerance against biotic stress.
B.N.Chakraborty, U. Chakraborty, **A.P.Chakraborty**, P.L.Dey, K. Sunar and Luis A.J.Mur
Presented at the 35th Annual Conference & Symposium of ISMPP on the theme "**Innovative and Ecofriendly Research Approaches for Plant Disease Management**", **January 8-10, 2014**, jointly organised by Dr. Panjabrao Desmukh Krishi Vidyapith, Akola, Maharastha in collaboration with ISMPP.
Obtained 1st prize for Prof. Krishna Sahai Bilgrami best poster paper presentation award 2014.

26. HARNESSING THE POWER OF METABOLOMICS AND BIOPRIMING RICE PLANTS TO IMPROVE TOLERANCE AGAINST BIOTIC STRESS
B.N.CHAKRABORTY, U. CHAKRABORTY, S. KHATI, **A.P.CHAKRABORTY** AND LUIS A.J.MUR
Presented at International Symposium on Role of fungi and microbes in the 21st century- a global scenario, 20-22 February, 2014, Organised by Indian Mycological Society, Kolkata in collaboration with Department of Botany, University of Calcutta, Kolkata.

27. Search for potential PGPR isolates from Darjeeling hills, their molecular characterization and application for improvement of crop health status.
B.N.Chakraborty, U. Chakraborty, **A.P.Chakraborty**, K. Sunar and P.L.Dey
Presented at National Workshop on "**Advances in PGPR Research**" organised by Department of Mycology & Plant Pathology, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi in collaboration with Asian PGPR Society for Sustainable Agriculture, Hyderabad, India on **October 7-8, 2014.**

28. Evaluation of multi-functional traits of rhizospheric bacteria for induction of tolerance in wheat plants against abiotic and biotic stresses.
B.N.Chakraborty, U. Chakraborty, **A.P.Chakraborty** and P.L.Dey
Presented at National Workshop on "**Advances in PGPR Research**" organised by Department of Mycology & Plant Pathology, Institute of Agricultural Sciences, Banaras Hindu University, Varanasi in collaboration with Asian PGPR Society for Sustainable Agriculture, Hyderabad, India on October 7-8, 2014.

29. Screening for resistance of wheat plants against *Bipolaris sorokiniana* causing spot blotch disease. B.N.Chakraborty, U.Chakraborty, **A.P.Chakraborty** and J.Sarkar
Presented at National Symposium on "**Unraveling plant-microbe interactions for supporting plant health**" organised by Department of Botany, Gauhati University, Gauhati in collaboration with Indian Society and Plant Pathology on October 27-28, 2014.

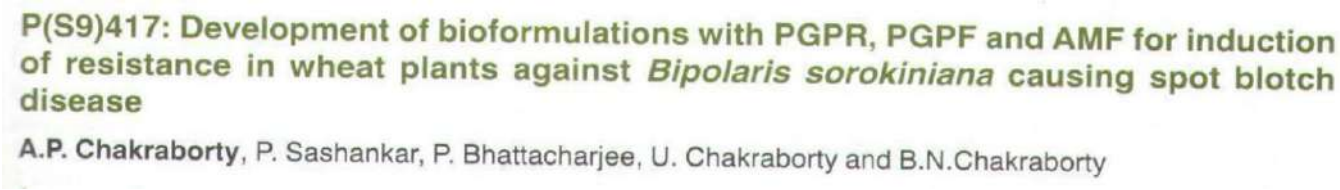
30. Evaluation of growth status of rice varieties following seed bacterization with plant growth promoting rhizobacteria
P Bhattacharjee, P Sashankar, **A P Chakraborty**, U Chakrborty, B N Chakraborty
Presented at National Symposium on "Unraveling plant-microbe interactions for supporting plant health" organised by Department of Botany, Gauhati University, Gauhati in collaboration with Indian Society and Plant Pathology on October 27-28, 2014.

31. Screening of wheat germplasm and utilization of plant growth promoting rhizobacterium for induction of resistance in wheat plants against spot blotch disease
A. P. Chakraborty, P.L.Dey, J.Sarkar, U.Chakraborty and B. N. Chakraborty
Presented at National Symposium on "Advances in Plant and Microbial Research" organised by the Department of Botany, University of North Bengal, Siliguri on December 12-13, 2014.

32. *Bipolaris sorokiniana*, a cereal pathogen causing spot blotch disease in wheat **(BT21)**
Arka Pratim Chakraborty, Bishwanath Chakraborty and Usha Chakraborty
Presented (Oral) at 22nd West Bengal State Science and Technology Congress organised by Science and Technology Division, Govt. of West Bengal in collaboration with University of North Bengal on February 28-March 01, 2015.

33. Resistance in tea plants against root rot pathogens induced by arbuscular mycorrhizal fungi and plant growth promoters
*U. Chakraborty, B.N. Chakraborty, **A.P. Chakraborty** and U.K. De*
Paper was presented in oral session in National Symposium on **Microbial Diversity and Its Impact,** jointly organised by Indian Mycological Society, Kolkata in collaboration with Department of Botany, University of Calcutta during February 18-19, 2016.

34.

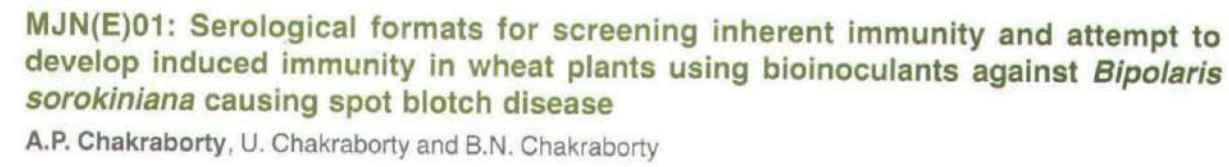


P(S9)417: Development of bioformulations with PGPR, PGPF and AMF for induction of resistance in wheat plants against *Bipolaris sorokiniana* causing spot blotch disease

A.P. Chakraborty, P. Sashankar, P. Bhattacharjee, U. Chakraborty and B.N.Chakraborty

Participated and presented a paper in the poster **session 9- Bio-prospecting in biocontrol agents for sustainable agriculture** in the 6th International Conference on Plant, Pathogens and People with the mission Challenges in Plant Pathology to benefit humankind, held at NASC Complex, New Delhi during February 23-27, 2016.

35.



MJN(E)01: Serological formats for screening inherent immunity and attempt to develop induced immunity in wheat plants using bioinoculants against *Bipolaris sorokiniana* causing spot blotch disease

A.P. Chakraborty, U. Chakraborty and B.N. Chakraborty

Participated and presented a paper in the **oral session for M.J. Narasimhan Academic Merit Award Contest** in the 6th International Conference on Plant, Pathogens and People with the mission Challenges in Plant Pathology to benefit humankind, held at NASC Complex, New Delhi during February 23-27, 2016.

36. Biochemical Responses of *Sorghum bicolor* and *Triticum aestivum* to spot blotch disease and induction of resistance by Plant Growth Promoting Rhizobacteria (PP-11).

Priyanka Bhattacharjee, Jayanwita Sarkar, **Arka Pratim Chakraborty**, Usha Chakraborty and Bishwanath Chakraborty

Participated and a paper was presented in the poster **session under theme & Technical session IV: Disease Management** in the 37th Annual Conference & Symposium of ISMPP on the theme "**Food security through Plant Health Protection**", **April 4-6, 2016**, jointly organised by Rajendra agricultural University, PUSA, SAMASTIPUR in collaboration with ISMPP.

Received 1st prize for **K.P.S. Bilgrami best poster paper presentation award, 2015**

37. Development of Immunological Formats for Detection of *Bipolaris sorokiniana* in Wheat Leaf and Strategies for Induction of Resistance against Spot Blotch disease using Bioinoculants

Arka Pratim Chakraborty, Usha Chakraborty and Bishwanath Chakraborty

Participated and a paper was presented in the oral **session in PR VERMA AWARD Competition for Ph.D student,2015** in the 37th Annual Conference & Symposium of ISMPP on the theme "**Food security through Plant Helath Protection**", **April 4-6, 2016**, jointly organised by Rajendra agricultural University, PUSA, SAMASTIPUR in collaboration with ISMPP.

Received 1st prize in PR VERMA Award competition for Ph.D students, 2015

38. Induction of defense responses in cereal crops against foliar fungal pathogens using bioinoculants

Bishwanath Chakraborty*, Usha Chakraborty, **Arka Pratim Chakraborty**, Amrita Acharya, Priyanka Bhattacharjee and Sweata Khati

A paper was presented in the poster **session under theme & Technical session III: Molecular Plant Pathology** in the **38th Annual Conference** & National Symposium of ISMPP on the theme "**Challenges towards Plants Health under Changing Climate Scenario for Sustainable Agriculture" November 24-26, 2016**, jointly organised by **Department of Plant Pathology, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur, Nadia, WB** in collaboration with **ISMPP.**

39. Innovative strategies for biotic and abiotic stress alleviation in wheat plants.
B.N. Chakraborty, U. Chakraborty, **A.P. Chakraborty,** J. Sarkar and P. Bhattacharya
A paper was presented at the Nationnal symposium & Delhi chapter meeting on **Innovative strategies for the management of plant disease under climate change scenario** at the Division of Plant Pathology, ICAR – Indian Agricultural Research Institute, New Delhi on **December 19, 2017**.

40. Participated in the ***Interdisciplinary National Seminar on "Vistas in Life Science Research***" on **29.03.2019**; **jointly organized by the Department of Biotechnology, Department of Microbiology, Department of Tea Science and Department of Bioinformatics, University of North Bengal, West Bengal, India.**

41. Participated and ***acted as Organising Secretary*** in Organising Committee for organising ***ONE DAY NATIONAL SEMINAR*** on "***WOMEN EMPOWERMENT; LIVELIHOOD, EDUCATION, RIGHTS AND SUSTAINABILITY***" on **03.05.2019**, jointly organised by the **Department of Political Science and Department of Geography, Gyan Jyoti College, Dagapur, Siliguri** and submitted ***abstract*** entitled:
"*Environmental Sustainability: Negative correlation between sustainability of ecosystem and climate change: challenges and remedial approach linked with special reference to plant-microbe interactions*"
Dr. Arka Pratim Chakraborty, Asst. Professor, Department of Botany, Gyan Jyoti College.

42. SCREENING OF WHEAT GERMPLASM FOR RESISTANCE AGAINST SPOT BLOTCH DISEASE AND ANALYSIS OF DEFENSE MECHANISMS
ARKA PRATIM CHAKRABORTY, USHA CHAKRABORTY AND BISHWANATH CHAKRABORTY
Abstract of the paper published in the abstract book under the technical session-**MICROBES AND PLANT HEALTH** in the International Symposium on "Nature, Microbes & Society", jointly organized by the **Indian Mycological Society, Kolkata** and the Department of Botany, University of Kolkata during **February 06-08,2020**.

43. CULTIVATION OF MUSHROOM ON DIFFERENT AGRO RESIDUES TO REDUCE GLOBAL WARMING
Parimal Mandal, **Arka Pratim Chakraborty** and Zerald Tiru
Participated in poster session (**PP-15**) in the National Seminar on "**New Horizon in Botanical Research**"- Botsem 2020, organized by the Department of Botany, NBU during **February 20-21, 2020**.

44. Participated in the ***Webinar on "HUMAN ORIGIN, HEALTH AND DISEASES***" on **23.05.2020** through online video conferencing (Link with Google Meet-meet.google.com/wkx-uokr-pep); **organized by the Centre for the Advanced Studies in Botany, University of Madras**.
Speaker: Dr. K. Thangaraj, Chief Scientist, CSIR-Centre for Cellular and Molecular Biology, Hyderabad- 500 007.

45. Participated in the ***International Webinar on "Past and Future of Dermatobotanicals in Dermatopharmacology***" on **26.05.2020** through online YouTube video conferencing; **organized by the Department of Advanced Zoology & Biotechnology. Loyola College (Autonomous), Chennai, Tamil Nadu, India.**

46. Participated in the ***International Webinar on "Science Communication and Analysis of Scientific Publications for enhanced visibility***" on **29.05.2020** through online video conferencing; **organized by the Department of Zoology, Mizoram University, Aizawl, India.**

47. Participated in the ***Webinar on "Scope for the utilization of herbal medicines for human health in COVID-19 like scenario***" on **29.05.2020** through online Zoom Webinar video conferencing; **organized by the PG & Research Department of Botany, V.O.Chidambaram College, Thoothukudi, India.**

48. Participated in the ***International Webinar on "STRATEGIES TO CONTROL COVID-19***" on **30.05.2020** through online Zoom Webinar video conferencing; **organized by the Department of Botany, St.Joseph's College (Autonomous), Tiruchirappalli, Tamil Nadu, India.**

49. Participated in the ***Webinar on "Covid and Digital Transformation***" on **30.05.2020** through online video conferencing (Link with Google Meet); **organized by the Department of Management, University of North Bengal, West Bengal, India.**

50. Participated in the ***Indo-UK Virtual Conference*** '***Current Innovations and the Future of Therapeutic Developments' CIFTD-2020*** during **1st-3rd June, 2020**, **organized by Centre for Biomaterials Cellular & Molecular Theranostics (CBCMT) at Vellore Institute of Technology (VIT), Vellore, India and Swansea University, United Kingdom**

51. Participated in the ***Webinar on "Microbes, Biology and Defences of the Chocolate Tree***" on **03.06.2020** through online video conferencing; **organized by the Department of Botany, Mizoram University, Aizawl, India.**

52. Participated in the ***International Webinar Series on*** '***Infectious Disease - Biology, Diagnosis, Preventive Strategies of Coronaviruses'*** during **1st-4th June, 2020**, **organized by the Department of Plant Biology & Biotechnology, Loyola College (Autonomous), Chennai, Tamil Nadu, India.**

53. Participated in the ***Two Days International Webinar on*** '***Current trends in chemical and material sciences'*** during **3rd-4th June, 2020**, **organized by the Department of Chemistry, Kazi Nazrul University, West Bengal, India.**

54. Participated in the ***National Level Webinar on "Biodiversity Conservation with Special Reference to Agrobiodiversity***" on **04.06.2020** through online Zoom Webinar video conferencing; **organized by the PG & Research Department of Botany, V.O.Chidambaram College, Thoothukudi, India.**

55. Participated in the ***National Webinar on "Waste Management during the Covid-19 Pandemic***"on **05.06.2020**; **organized by the School of Studies in Chemistry, Jiwaji University, Gwalior, India.**

56. Participated in the ***Webinars on "SALIVARY METABOLOMES AS A TOOL FOR SCREENING CANCERS AT AN EARLY STAGE***" and ***"ADVANCES IN REGENERATIVE MEDICINE – THROUGH INDO-JAPANESE COLLABORATION"***

on **05.06.2020** through online video conferencing; **organized by the Department of Biotechnology, Mizoram University, Aizawl, India.**

57. Participated in the ***Webinar on "The Importance of Symbiotic Microorganisms in Drug Discovery***"on **06.06.2020** through online video conferencing; **jointly organized by the Department of Forestry, Department of Environmental Science, School of Earth Science & Natural Resource Management, Mizoram University, Aizawl, India.**

58. Participated in the ***Webinar on "Study of biomarkers for diagnosis and prognosis of tuberculosis infection***"on **06.06.2020** through online video conferencing; **jointly organized by the Department of Chemistry and Department of Biotechnology, Mizoram University, Aizawl, India.**
Resource Person: Dr. Amador Goodridge, Tuberculosis Biomarker Research Unit, Instituto de Investigaciones Científicas y Servicios de Alta Tecnología, INDICASAT-AIP, Panama.

59. Participated in the ***Webinar on "Contribution of B-1 Cells during Mycobacterium infection***"on **06.06.2020** through online video conferencing; **jointly organized by the Department of Chemistry and Department of Biotechnology, Mizoram University, Aizawl, India.**
Resource Person: Dr. Ciara Ordonez, Tuberculosis Biomarker Research Unit, Instituto de Investigaciones Científicas y Servicios de Alta Tecnología, INDICASAT-AIP, Panama.

60. Participated and presented a paper in ***One Day International Webinar on "COVID-19, THE FACTS AND FINDINGS***" on **08.06.2020**, through online video conferencing; **organized by the Department of Chemistry, Sidho-Kanho-BirshaUniversity, Purulia-723104, West Bengal, India and submitted e-abstract entitled:**
"*Targeting apoptosis signaling pathways through multiple mechanisms during infection induced by Coronavirus (CoV)"*
Subash Kumar Gupta[1] and ***Arka Pratim Chakraborty[2*]***
[1]Assistant Professor, Department of Botany, Gyan Jyoti College, Dagapur, Dist-Darjeeling, P.O.- Salbari- 734002, West Bengal India, Ph- 7908138116, E-mail:guptasubash60@yahoo.in
[2]Assistant Professor, Department of Botany, Raiganj University, Raiganj, Uttar Dinajpur-733134, West Bengal, India, Ph-8945518753
****Corresponding Author:** arkapratimchakraborty83@gmail.com*

61. Participated in the ***Online Lecture Series Webinar-2 on* '*BIOLOGICALLY ACTIVE MUDFLATS'*** on **13.06.2020**, **organized by the CHENNAI SCIENCE COLLOQUIUM (CSC), Chennai, India.**

62. Participated in the ***Webinar on "Biomedical Sciences: A touch of Medicinal Plants***"on **17.06.2020** through online video conferencing; **organized by the Department of Horticulture, Aromatic and Medicinal Plants (HAMP), Mizoram University, Aizawl, India.**

63. Participated in the ***Two Days International Webinar on* '*COVID-19: Impact, Preventive measures and Best Practices'*** during **21st-22nd June, 2020**, **organized by the Department of Physics, Bhairab Ganguly College, West Bengal, India.**

64. Participated and presented a paper in ***Three Days International Webinar on "Emerging Trends in Biotechnology: Current and Future Challenges in Biotechnology Research***"during **24th-26th June, 2020**, through online video conferencing; **jointly organized by the Department of Biotechnology, Pachhunga University College (PUC) and Mizoram University (MZU), Aizawl, India and submitted e-abstract entitled:**
"A brief study of expressions of defense genes and genes involved in phytoalexin biosynthesis through Microarray and RT PCR analysis during induction of resistance in *Triticum aestivum* by plant growth promoting rhizobacterium against *Bipolaris sorokiniana* causing spot blotch disease"
Arka Pratim Chakraborty
Assistant Professor, Department of Botany, Raiganj University, Uttar Dinajpur-733134, West Bengal, India, Email: arkapratimchakraborty83@gmail.com

65. Participated in the ***Two Days Online Special Lecture Series on* '*Current Trends in Basic Sciences and Career Opportunities'*** during **25th-26th June, 2020**, **organized by the Department of Botany, Chemistry and IQAC, BMMV, Balurghat Mahila Mahavidyalaya, Balurghat, Dakshin Dinajpur, West Bengal, India.**

66. Participated in ***One Day ICPR sponsored International Webinar on "Yoga for Mankind: Peace and Practice***" on **08.07.2020**, through online video conferencing; **organized by the Department of Philosophy, Cooch Behar Panchanan Barma University, Cooch Behar, West Bengal, India.**

67. Participated in **the Webinar on "*Tropical Parasites and their Treatments*" on 16.07.2020 through online video conferencing; organized by the Mizoram University, Aizawl, India.**

68. Participated in **One Day Webinar on "*Recent Trends in Science and Technology*" on 17th July, 2020, through online Google Meet; jointly organized by the Department of Botany, Chemistry, Physiology and Zoology & Internal Quality Assurance Cell (IQAC), Netaji Nagar Day College, affiliated to the University of Calcutta, West Bengal, India.**

69. Participated in **the Webinar on "*Antibiotic Resistance*"on 17.07.2020 through online video conferencing; organized by the Mizoram University, Aizawl, India.**

70. Participated in Two Days National Webinar on "*PLANT RESEARCH IN WELFARE OF HUMAN BEING*" on 17th & 18th July, 2020, through online Google Meet; jointly organized by the Department of Botany, South Calcutta Girls' College & Dinabandhu Mahavidyalaya, West Bengal, India.

71. Participated in **the National Webinar on "*EMERGING FRONTIERS IN BIOLOGICAL SCIENCES*" on July 20-21, 2020 through online video conferencing; jointly organized by the Department of Botany & Zoology, Manipur University, Canchipur, India.**

72. Participated in **the Webinar on "*Unexpected tough time in this pandemic time- will have to adapt to deal with it since it is what it is; given by Dr. Siddeswar Gubba, Ph.D., Innovative Informatics & Technologies, Inc., Texas, USA*," on 21.07.2020 through online video conferencing; organized by the Mizoram University, Aizawl, India.**

73. Participated in the National level Webinar on "*THE ENIGMA OF COVID-19: FEATURES, GENOMIC PLASTICITY AND TREATMENT MODALITIES*" on 22.07.2020 through online video conferencing; jointly organized by the Department of Botany & IQAC, Krishnagar Government College, Krishnagar, Nadia, West Bengal-741101, India.

74. Participated in **the Webinar on "*Peptide Nanoparticle and their Significance in Drug Development, delivered by Dr. Palanirajan Vijayara Kumar, UCSI University, Malaysia*" on 23.07.2020 through online video conferencing; organized by the Department of Chemistry, Mizoram University, Aizawl, India.**

75. Participated in **the Webinars on "*COVID-19 PANDEMIC IN INDIA: DIAGNOSTIC TOOLS AND NATIONAL REGULATIONS AND PATIENTS WITH CHRONIC LUNG DISEASES DURING THE COVID-19 PANDEMIC*" on 24.07.2020 through online video conferencing; organized by the Mizoram University, Aizawl, India.**

76. Participated in the International level Webinar on "*THE COVID-19 PANDEMIC: MYTHS, SCIENCE AND HOPE*" on 26.07.2020 through online video conferencing; jointly organized by the Department of Botany & IQAC, Krishnagar Government College, Krishnagar, Nadia, West Bengal-741101, India.

77. Participated in ***International Colloquium (Online) on "Science and Society: Institutional approaches during pandemic"* on 30.07.2020 & 31.07.2020;** organised by **the Science Departments and IQAC, Dinhata College** in collaboration with **the Department of Botany, Cooch Behar Panchanan Barma University, West Bengal, India.**

78. Participated in One Day National Webinar on "*Digital Teaching during COVID-19 Pandemic with Special Reference to Teaching learning Process*" on 03.08.2020, through online Google Meet; jointly organized by the Department of Education & IQAC, South Calcutta Girls' College, Kolkata, West Bengal, India.

79. Participated in **the Webinar on 3rd August, 2020,** organized by the Mizoram University, Aizawl, entitled **'*An International Webinar on Biometric Recognition Techniques for Authentication in Smart Cities*'** delivered by Shi-Jinn Horng, Chair Professor, National Taiwan University of Science and Technology, Taipei, Taiwan-106.

80. Participated in **the Webinar on 3rd August, 2020,** organized by the Department of Horticulture, Faculty of Agriculture, Annamalai University, entitled "***Annona- the super fruit of the 21st century"***.

81. Participated in **the Webinar on 3rd August, 2020,** jointly organized by the **Central Library, Manipur University in collaboration with Springer Nature**, entitled "***ACADEMIC AND SCIENTIFIC WRITING CATAPULTING INSTITUTIONAL VISIBILITY".***

82. Participated in **One Day National Webinar on "*Plant Through Ages: Extinct to Extant" held on August 4th, 2020;*** organized by the **Department of Botany** in association with **IQAC of the Mrinalini Datta Mahavidyapith, Birati, Kolkata-700051.**

83. Participated in **the Webinar on "*Bench to Bedside: An overview of Drug Development Process, delivered by Dr. Prakash Bolleddula, Ph.D Director, DMPK and Clinical Pharmacology Agios Pharmaceuticals Cambridge, MA, USA*" on 04.08.2020 through online video conferencing; organized by the Department of Biotechnology, Mizoram University, Aizawl, India.**

84. Participated in **the Webinar on 4thAugust, 2020,** organized by the Department of Horticulture, Faculty of Agriculture, Annamalai University, entitled "***Neutraceuticals in flower crops"***.

85. Participated in **the Webinar on 5th August, 2020,** organized by Proquest in collaboration with Annamalai University, entitled "***Best Practices in Using ProQuest Databases for Research, Teaching and Learning"***.

86. Participated in **the Webinar on "*IMMUNOTHERAPY APPROACHES IN CANCER DRUG DISCOVERY*" on 05.08.2020 through online video conferencing; organized by the Mizoram University, Aizawl, India.**

87. Participated in **the Webinar on 6th August, 2020; on "*Understanding the Complexity of Cancer Progression and Biology of DNA Structures";*** organized by the **Department of Botany** in association with **IQAC of Gurudas College.**

88. Participated in **the international web conference on 7th August, 2020; on "*Climate Change & Human Health*";** jointly organized by the **Faculty of Science, Tufanganj Mahavidyalaya and the Department of Zoology, Ananda Chandra College**.

89. Participated in **ONE DAY NATIONAL LEVEL WEBINAR** ON "***PROMOTION OF COLLEGE TEACHERS AND LIBRARIANS UNDER CARREAR ADVANCEMENT SCHEME (CAS)"* on 8th August, 2020;** organised by **IQAC, Alipurduar College** as per registration Ref. No. **APDC/IQAC/2020/069**.

90. Participated in **One Day International Webinar** on "***Corona Virus Disease (COVID-19): A review of It's Pathophysiology and Epidemiology***" **on 9th August, 2020;** organized by **the Department of Food and Nutrition, Tara Devi Harakh Chand Kakaria Jain College, Affiliated to University of Calcutta.**

91. Participated in **Webinar** On "***Personalized Precision Cancer Therapy***" On **13 Aug 2020**.

92. Participated in the ***One Day International Webinar on "Viral infection and immunity: physiological aspects and preventive strategy" on* 14th August, 2020;** organized by **the Department of Physiology in association with IQAC, Belda College, Belda, W.B.**

93. Participated in **the Online Lecture Series entitled "*Virtual Journey Through Botanical World*"** held from **12th-15th of August, 2020,** organized by **the Department of Botany in association with IQAC,T.H.K Jain College, Kolkata.**

94. Participated in **the Bilateral Indo-US Webinar** on ***COVID Biology***, dated **August 16-19, 2020**; organized by **Indian Institute of Science education and Research Kolkata**, India in collaboration with **IISc, Bangalore**, India, **University of Pennsylvania**, and the **University of Colorado**, School of Medicine, USA.

95. Participated in the **National Webinar on "*Plant Science in New Era, Part-I"*** on **19.08.2020**; organized by the **Department of Botany, Kabi Nazrul College, Murarai, Birbhum.**

96. Participated in **One Day National Level Webinar** on "***The New Horizon: Omics in Microbial Research***" on **22.08.2020**; organized by **the Department of Botany, Kalimpong College, Kalimpong.**

97. Participated in **the International Webinar** on "***Neoteric Approaches in Applied Sciences***" jointly organized by **UG & PG Department of Botany** and **Department of Physics** in collaboration with **IQAC, Darjeeling Government College** on **24th and 25th August, 2020**.

98. Participated in **One Day National Level Webinar** on "***Jal Shakti Campus and Jal Shakti Gram: SDGs for Natural Resources During COVID-19 and Beyond"*** on **25.08.2020**; jointly organized by **NSS & IQAC, Maynaguri College** in collaboration with **Mahatma Gandhi National Council of Rural Education (MGNCRE**).

99. Participated in **One day International Webinar** on "***Science, Biology and the world's Future"*** on **25.08.2020;** organized by the **Department of Botany** in collaboration with **Internal Quality Assurance Cell (IQAC), Dinabandhu Andrews College**, Kolkata.

100. Participated in the **National Webinar** on "***National Education Policy 2020"*** on **26.08.2020;** organized by the **Department of Education, Mizoram University. Aizawl.**

101. Participated in **the International Webinar** on "***IPR and Recent Advancement in Pharmaceutical Research***" held on **29th August 2020;** organized by the **Department of Pharmaceutical Technology, University of North Bengal**, Raja Rammohunpur, Darjeeling 734013, West Bengal, India.

102. Participated in **the One-day State Level Webinar** on "***Emerging Bio-based Industrial Sectors & Job Prospects: Indian Scenario with Special Reference to West Bengal***" organized by **UG & PG Department of Botany** in collaboration with **IQAC, Darjeeling Government College** on **30th August, 2020.**

103. Participated in **the International Webinar** on "***COVID-19 Pandemic and Co-infections: Challenges, Prospective Treatments and Societal Impact***" held on **31st August, 2020,** organized by the **Department of Microbiology, Raiganj University**.

104. Participated in **the Inaugural Talk of Bio-Illumination** on "***Present trends and future prospects of herbal medicines" held on 05.09.2020,*** organized by **the Department of Biological Sciences, Aliah University, Kolkata**.

105: Participated in **the ONE-DAY NATIONAL WEBINAR** ON "***ROLE OF INDIGENOUS TRADITIONAL KNOWLEDGE AND HERBAL DRUGS IN COMBATING AGAINST PANDEMIC COVID-19***" held on the **11th September, 2020**; organized by the **Department of Botany and Internal Quality Assurance Cell**, **Maulana Azad College, Kolkata**.

106. Participated in **the Bio-Illumination Talk** on "***Single Molecule Technologies: A New Window To See Complex Biological Phenomenon" held on 12.09.2020,*** organized by **the Department of Biological Sciences, Aliah University, Kolkata**.

107. Participated in **the Bio-Illumination Talk** on "***Applied Phytochemistry as an Interdisciplinary Research Concept" held on 12.09.2020,*** organized by **the Department of Biological Sciences, Aliah University, Kolkata**.

108. Participated in **One Day Webinar** on "***Biodiversity: Concept, Conservation and Challenges***" held on **13th September, 2020;** organized by **the Department of Botany and Zoology in collaboration with IQAC, FAKIR CHAND COLLEGE, DIAMOND HARBOUR, SOUTH 24 PGS, WEST BENGAL, INDIA. (*Certificate Id: IBJT0E-CE000112*).**

109. Participated in **the Bio-Illumination Talk** on "***Host-pathogen interaction: Crosstalk between nuclear DNA sensor. IFI16 and Herpesvirus" held on 19.09.2020,*** organized by **the Department of Biological Sciences, Aliah University, Kolkata**.

110. Participated in *INDIAN PHYTOPATHOLOGICAL SOCIETY, NEW DELHI-* ***IPS WEBINAR SERIES*** *on INTERNATIONAL YEAR OF PLANT HEALTH 2020-* ***IPS Webinar of Central Zone*** on July 17, 2020.

111. Participated in **DBT Sponsored Webinar** on "***Beginners' Bioinformatics***"; organised by the **Department of Botany, Jhargram Raj College** on **24th September, 2020**.

112. Participated in **the Bio-Illumination Talk** on "***Flooding of Pulmonary Alveoli (edema) in COVID-19: The Pathophysiology" held on 26.09.2020,*** organized by **the Department of Biological Sciences, Aliah University, Kolkata**.

113. Participated in **the Bio-Illumination Talk on "*VENOM-SELEX: An aptamer based method for identification of biomarker for differential detection of snake venom*" held on 03.10.2020, organized by the Department of Biological Sciences, Aliah University, Kolkata.**

114. Participated in **DBT Sponsored Webinar on "*Bio Energy & Energy Conservation*"; organised by the Department of Botany, Jhargram Raj College on 2nd October, 2020.**

115. Participated in **online Webinar** on "***Next Generation Sequencing For Deciphering Host-Pathogen Interactions***" on **4th and 5th February**, **2021;** jointly organized by the Indian Phytopathological Society (IPS) and Bionivid Technology Pvt. Ltd.

116. Participated in **online Webinar** on **"*Biodiversity Day*" on 22nd May, 2021; jointly organized by** Shakti Manipur and Society for Environmental Education and Development (SEED), Manipur.

117. Participated in **online State level Webinar** on ***"Mucormycosis: The Black Fungus infection maiming COVID-19 patients in India" on 03.06.2021;*** *organized by* ***the Government General Degree College, Chapra.***

118. Participated in **online one day Webinar** on ***"Observation of World Environmental Day" on 05.06.2021***; *organized by* ***the Government General Degree College, Chapra.***

Professional Memberships

Life Member

1. Asian PGPR Society (ASPS)
2. Association of Microbiologists of India (AMI)
3. Indian Mycological Society (IMS)
4. Indian Phytopathological Society (IPS)

Member

1. Indian society of Mycology and Plant Pathology (ISMPP)
2. North Bengal University Alumni Association (NBUAA- Reg. No.- S/IL/7445 of 2001-02) w.e.f. **05.12.2019**.

Manuscript Reviewer for Scientific Journals

1. 2020: AS ***REVIEWER*** IN THE REVIEWER & EDITORAL BOARD MEMBER COMMITTEE OF THE JOURNAL- "***INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS-IJCRT- ISSN- 2320-2882***"
NAME: **Dr. ARKA PRATIM CHAKRABORTY**
Reviewer Profile ID: 115845
Education qualification: Ph.D.
Designation: ASSISTANT PROFESSOR, RAIGANJ UNIVERSITY
Subject: Research Interest: Microbiology, Plant Pathology, Biological Science
IJCRT- REVIEWER since 31st MARCH, 2020 **(www.ijcrt.org)**

2. 2020: AS ***REVIEWER*** IN THE REVIEWER & EDITORAL BOARD MEMBER COMMITTEE OF THE JOURNAL- "***INTERNATIONAL JOURNAL OF ENGINEERING DEVELOPMENT AND RESEARCH-IJEDR- ISSN- 2321-9939***"
Reviewer Profile ID: 115845
IJEDR- REVIEWER since 31st MARCH, 2020 **(www.ijedr.org)**

3. 2020: AS ***REVIEWER*** IN THE REVIEWER & EDITORAL BOARD MEMBER COMMITTEE OF THE JOURNAL- "***INTERNATIONAL JOURNAL OF RESEARCH AND ANALYTICAL REVIEWS-IJRAR-E- ISSN- 2348-1269; P-ISSN-2349-5138***"
Reviewer Profile ID: 115845
IJRAR- REVIEWER since 31st MARCH, 2020 **(www.ijrar.org)**

4. 2020: AS ***REVIEWER*** IN THE JOURNAL- ***INTERNATIONAL JOURNAL OF TEA SCIENCE (IJTS)*- JOURNAL ACRONYM (ISSN): IJTS (0972-544X)- http://teascience.in/index.php/ijts**

5. 2020: AS *REVIEWER IN THE JOURNAL- ARCHIVES OF PHYTOPATHOLOGY AND PLANT PROTECTION- TAYLOR & FRANCIS GROUP-Print ISSN: 0323-5408 Online ISSN: 1477-2906*.

6. 2020: AS REVIEWER IN THE JOURNAL-*JOURNAL OF TROPICAL LIFE SCIENCE- UGC-CARE list journal- E-ISSN:2527-4376, ISSN: 2087-5517.*

Editor in magazine Agriculture & Food: e-Newsletter

1. As an editor in magazine Agriculture & Food: e-Newsletter from 03.09.2020 to 03.09.2022.
Agriculture & Food: e-Newsletter
www.agrifoodmagazine.co.in
ISSN: 2581 8317
***Article published in online magazine Agriculture & Food: e-Newsletter- Volume 2 Issue 10, October 2020- Microbial Induced Calcite Precipitation (MICP) and its Application in Self-Healing Concrete*- Article ID: 32056.**

2. Science
REPORTER
Vol. 58 No. 5 May 2021 ISSN: 2582-6492 (Online) ISSN 0036-8512 (Print)
National Institute of Science Communication and Information Resources (NISCAIR)
Council of Scientific & Industrial Research (CSIR)
Article published in online magazine- May issue 58(05): 44-46, 2021
Microgreens: Food for the Future
Sourav Dey & ***Arka Pratim Chakraborty***

Editorial Advisory Member

1. As one of the Editorial Advisory Member in the UGC-CARE list journal- *Journal of Advanced Scientific Research* (ISSN- 0976-9595) under *ScienSage* publishing house.

2. EDITORIAL MEMBER IN
Kripa-Drishti Publications
A-503 Poorva Heights, Pashan-Sus Road, Near Sai Chowk, Pune – 411021, Maharashtra, India.
Mob: +91-8007068686
Email: editor@kdpublications.in
Web: https://www.kdpublications.in

Workshops attended (2006-2021)

1. A two day training workshop on cultivation of Medicinal Plants jointly organised by the Department of Adult, Continuing Education and Department of Botany, NBU.

2. WORKSHOP-**National workshop on Bioinformatics held from 18- 20th January, 2008,** Bioinformatics Facility, Department of Botany, North Bengal University.

3. WORKSHOP-**UGC sponsored Research Scholar's Training from 30-06-2011 to 01-07-2011**, North Bengal University.

4. One day user awareness programme on "***Access to E-resources under N-LIST Programme***", organized by University Library, NBU in collaboration with the INFLIBNET Centre, Ahmedabad (An Inter-University Centre of UGC) held on **10th February, 2012** at University of North Bengal.

5. One day workshop on "***Cultivation and post-harvest processing of edible mushrooms***" , organised by the Department of Botany, NBU in collaboration with Uttar Banga Krishi Viswavidyalaya, Coochbehar under the project entitiled "***Establishment of rural bioresource complex in North Bengal***" on **December 29, 2014.**

6. Three days workshop on "***Exploitation of Plant and Microbial resources of North Bengal*** ", organised by the Department of Botany, NBU during **December 14-16, 2015.**

7. One day workshop entitled **PGPRs for sustainable crop productivity** organized by the Indian Phytopathological Society in the 6th International Conference on Plant, pathogens and People with the mission Challenges in Plant Pathology to benefit humankind, held at NASC Complex, New Delhi on **February 25, 2016.**

8. One day workshop cum seminar on "***Bioresource Utilization***" organized by Department of Botany, NBU in collaboration with Uttar Banga Krishi Viswavidyalaya, Coochbehar under the project entitiled "***Establishment of rural bioresource complex in North Bengal***" on **September 05, 2016**.

9. Attended and as joint organizing secretary organized "***ONE DAY WORKSHOP CUM HANDS ON TRAINING ON BIOINFORMATICS***" at the premises of Gyan Jyoti College on **September 28, 2018** in **joint collaboration with the Department of Botany, Gyan Jyoti College and NBU-Bioinformatics Centre, NBU, Siliguri**.

10. Participated in **ONE DAY SEMINAR** CUM WORKSHOP ON " ***EXPLORING THE HISTORY OF DEVELOPMENT OF INDIAN SCIENCE IN THE LATE COLONIAL ERA***", held on **September 16, 2019** in **joint collaboration with Gyan Jyoti College and North Bengal Alumni Association (NBUAA), a registered society bearing Reg. No.- (**S/IL/7445 of 2001-02).

11. Participated in **ONE DAY WEB-BASED WORKSHOP** ON "***QUALITATIVE RESEARCH AND ACADEMIC WRITING***"- QRAW- SERIES-1; held on **27.07.2020**; organized by the **Department of Library & Information Science, Manipur University, Canchipur, India.**

12. Participated in the **THREE DAY NATIONAL LEVEL e-WORKSHOP** on "***MOLECULAR VISUALIZATION AND MODELING ISUNG PYTHON PROGRAMMING"*** held from **10th to 12th August, 2020**; jointly organized by the **Departments of Physics, Microbiology & Zoology, Maulana Azad College** (DBT Star College Programme), Kolkata.

13. Participated in **Emerald Publishing's workshop on "*Accessing indexed journals for quality research***" on ***12th August, 2020***; conducted by **Annamalai University**, Tamil Nadu in association with **Emerald Publishing**, India.

14. Participated in ***ONLINE QUIZ CELEBRATING INDIAN INDEPENDENCE DAY (15th August, 2020);*** jointly organized by the **All NSS Units and IQAC, Maynaguri College, University of North Bengal.**

15. Participated in ***ONLINE QUIZ CELEBRATING INDIAN INDEPENDENCE DAY (15th August, 2020)*** on "***People & their art, culture & heritage";*** organized by the **All NSS Units, Bangabasi Morning College, Kolkata. (Certificate Id- A1PN9A-CE000351).**

16. Participated in **One Day Orientation Programme** on ***NAAC & CAS*** on **23.08.2020;** organized by **IQAC, Malda College, Malda.**

17. Participated in **the online International Lecture Series** organized by **IQAC and Department of Botany, Government General Degree College, Singur** from **4th August, 2020 to 31st August, 2020.**