
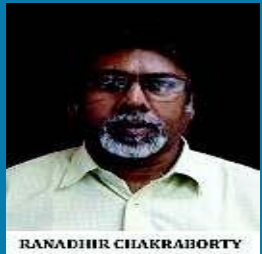


UNIVERSITY OF NORTH BENGAL
Accredited by NAAC with grade 'A'
Raja Rammohunpur, Dist- Darjeeling, West Bengal, Pin-734013, India.





DR. RANADHIR CHAKRABORTY

Dr. Ranadhir Chakraborty

M.Sc., Ph.D.

Professor

Members of Learned Societies: Life Member, Society of Biological Chemists (INDIA)

Contact Addresses:

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e-Mail	rcnbusiliguri@gmail.com ; ranadchakrabort@nbu.ac.in

Subject specialization: Molecular Microbiology**Areas of Research Interest:** Antimicrobial resistance, Gut Microbiome, Environmental Microbiology, Omics (genomics, Transcriptomics, Proteomics)**No. of Ph.D. students:** (a) Supervised: 13 (Awarded); (b) Ongoing: 08 (Registered).**No. of M.Phil. students:** (a) Supervised: Nil (b) Ongoing: Nil .**No. of Publications:** (a) **Journal(s)** : In refereed research journals: 85 (PubMed Cited publication # 57)
(b) **No. of Book Chapters** : 16 (c) **No. of Books Edited:** 01 (d) **International Journal Volume Edited:** 01**Achievement & Awards:**

- Silver Medalist (1st Class 2nd) in M.Sc examination [1989]
- Qualified Graduate Aptitude Test in Engineering (GATE)[1989];
- Declared eligible for Lectureship in Universities/Colleges in India (1989) -through National Education Test Eligibility for Lectureship (CSIR/UGC);
- Bose Institute Junior Research Fellowship Award (1990)- DST, GoI, New Delhi, INDIA;
- Bose Institute Senior Research Fellowship Award (1993)- DST, GoI, New Delhi, INDIA;
- Second best Poster Award in Genetic Engineering (1994)- MICON International Conference held in Mysore;
- Second best Poster Award (as communicating author of the research paper) (2011) in Young Research Conference, Institute of Chemical Technology, Bombay.
- INTERNATIONAL TRAVEL AWARD, SCIENCE AND ENGINEERING RESEARCH BOARD to attend and present paper FEBS EMBO CONFERENCE-2014 at PARIS, FRANCE during 30/08/2014- 04/09/2014
- Fellow West Bengal Academy of Science and Technology (2016)
- Dewang Mehta National Education Awards- Best Professor in Biotechnology Studies (2019).

Members of Learned society: (i) Life Member, Society of Biological Chemists (INDIA); (ii) Member, American Society for Microbiology (ASM); (iii) Member, American Association of Advancement of Science (AAAS);**International and National Conferences/ symposia attended as Keynote Speaker/ Plenary Speaker/Invited Speaker/ Session Chairperson (2015- May 2022):**

1. Invited as one of the distinguished speakers from Clinical Research & Academic Institution in the 3rd ANNUAL NEXT GENERATION SEQUENCING DATA CONGRESS held in London, UK, from 15 to 16th June 2015, organized by OXFORD GLOBAL, United Kingdom.
2. Invited as keynote Speaker in the UGC- sponsored National Seminar on “ Global climate change and its impacts on Floral, Faunal and Microbial biodiversity” (26 – 28 June, 2015) organized by Department of Botany, St. Joseph’s College, Darjeeling, West Bengal.
3. Invited as distinguished Speaker in the UGC- sponsored National Seminar on “ Advances in Biology: Eastern Himalayan Perspective” (3rd October, 2015) organized by Department of Botany & Department of Zoology, Kalimpong College, West Bengal.
4. Invited as eminent Speaker for the International symposium “The World of Microbes: Pathogenesis, Environment and Evolution” to commemorate 100 years celebration of Bose Institute, Bose Institute, Kolkata on 17th October, 2016.

5. Invited as Plenary Speaker in the UGC-CPE Assisted Inter-disciplinary (Science) National Seminar on “Frontiers in Science & Technology towards National Development” (10 -11 April, 2016) organized by Acharya Brojendra Nath Seal College, Cooch Behar, West Bengal.
6. Invited as Plenary Speaker in the Govt. of West Bengal sponsored National Seminar on “Man and Microbes” (28 -29 March, 2016) organized by the Department of Microbiology, Raiganj University, Raiganj, West Bengal.
7. Invited as Speaker and chaired the Session I & II in the UGC sponsored Seminar “Microbial World 2017: National Seminar on Applied Microbiology” organized by the Department of Microbiology, University of North Bengal, on September 4, 2017.
8. Invited as Speaker in the UGC sponsored National Seminar on “Microbiology in 21st Century” (29 Feb -01 March, 2017) organized by the Department of Microbiology, Vidyasagar University, Midnapore, West Bengal.
9. Invited as distinguished Speaker in a National Seminar on ‘Recent Trends in Life Sciences’ (26th March, 2017) organized by the Department of Zoology, Raiganj University, Raiganj, West Bengal.
10. Invited as Panelist in the 2nd Regional Science & technology Congress, 2017, (7th & 8th December, 2017), organized by Siliguri College jointly with Department of Higher Education, Science & Technology and Biotechnology, Government of West Bengal, Siliguri, West Bengal.
11. Invited as key note Speaker and chaired a Session in the International Conference Microbiology in the New Millennium (27-29 October 2017) organized by BOSE INSTITUTE, Kolkata, West Bengal.
12. Invited as distinguished Speaker in a symposium on ‘Microbial Technology: Biotechnological & Industrial perspectives’ (20th Feb., 2018) organized by North Bengal St. Xavier’s College. Rajganj, Jalpaiguri, West Bengal.
13. Invited as Plenary Speaker in the Department of Higher Education, Govt. of West Bengal sponsored National Seminar on “Emerging Areas of Sericulture: Issues, Challenges and Industrial Application for Sustainable Development and Ecorestoration” (30 -31 Jan., 2018) organized by the Department of Sericulture (Centre for Applied Biology), Raiganj University, Raiganj, West Bengal.
14. Invited as key note Speaker and chaired a Session in ICCAR-International Conference on “Contemporary Antimicrobial Research” (15-17 December 2018) organized by the Department of Biotechnology, IIT Kharagpur, West Bengal.
15. Invited as Plenary Speaker for the International Seminar on “Current Avenues in Microbial and Plant Sciences CAMPS 2019” chaired the Session IV in the seminar held on 23 -25 Feb. 2019 at University of Gour Banga, Malda, West Bengal, India.
16. Participated from India and presented a paper in the conference organized by American Society for Microbiology (ASM) Microbe 2019, held in San Francisco, California, June 20-24, 2019.
17. Invited as eminent resource Speaker on ‘Environmental impacts of AMR’ and chaired a Session in 3rd International Conference on “Contemporary Antimicrobial Research” (9-10 December 2021) organized by Acharya & BM Reddy College of Pharmacy and Acharya Institute of Technology, under the Society for Antimicrobial Research, in collaboration with Biotech hub, Assam University.

Oration and poster Awards of the mentee (mentored-researchers) for their papers in National and International events:

Oral/poster presentation Award	Presentation title	Authors	Year
Best Oral Presentation Award in a National Seminar “Recent Advances in Translational Research” at University of North Bengal.	Whole genome sequence analyses of two boron tolerant bacteria belonging to the genus <i>Lysinibacillus</i> & <i>Enterococcus</i> to identify putative genes in support of the observed phenotype of boron resistance via efflux mechanism	<u>Subhajit Sen</u> and Ranadhir Chakraborty*	2020
Best Poster Presentation Award in a National Seminar “Recent Advances in Translational Research” at University of North Bengal.	Unmasking the sporulation genes, comparative genomics and physiological study of spore formation in a novel bacterium, EAG3, under <i>Bacillaceae</i> , isolated from the gut of earthworm, <i>Eisenia fetida</i> .	<u>Sriradha Ganguli</u> and Ranadhir Chakraborty*	2020
Best Poster Presentation Award in an interdisciplinary National Seminar “Vistas in Life Science Research” at University of North Bengal.	Diversity of boron tolerant bacteria in soil of North Bengal	<u>Subhajit Sen</u> , Nidhi, Subhanil Chakraborty and Ranadhir Chakraborty*	2019
Best Poster Presentation Award in ICCAR - International Conference on Contemporary Antimicrobial Research	Amelioration of the severity of acute multiple- antibiotics-resistant <i>Pseudomonas aeruginosa</i> infected burn wound in rat burn model by Ayurveda based polyherbal preparation	<u>Subhanil Chakraborty</u> , Subhajit Sen and Ranadhir Chakraborty*	2018

*, Communicating author

Significant Contribution during COVID-19 Pandemic (January 2020 – March 2022):

a. As Invited speaker in Seminar/Conferences/Webinar

Name of the Seminars/Conferences	Venue and Date	Title of the paper presented
One day State-level Web Seminar on "Global Pandemic and its impact: The medical and the pedagogical"	Santipur College; Nadia; June 15, 2020	'Exploration and understanding of the COVID-19'
International Webinar on 'COVID-19- The current scenario'	St. Xavier's College (Autonomous), Kolkata; 2nd & 4th July, 2020.	'Insidious SARS-CoV-2: its Molecular peculiarities and genomic plasticity'
International Webinar titled "In search of origin, prevention and possible cure of COVID-19"	Vijoygarh College, Kolkata; 18th July, 2020	'Sneaking SARS-CoV-2: Molecular distinctiveness and Mutation Spectra'
National level Webinar on "Challenges in Environmental Microbiology"	Chakdah College, Nadia; 31st August, 2020.	'Antibiotic residues in the Environment and the ways to its mitigation'
National Webinar on "Impact of Viral diseases challenging Human lives"	West Bengal State University, Barasat; 18th August, 2020.	'SARS-CoV-2: Trends of mutation accumulation'
National Workshop on "Functional foods, Bioactive compounds and phytochemicals for better nutrition"	Uttar Banga Krishi Vishwavidyalaya, Pundibari, Coochbehar; 10th December, 2020	'Future innovations in Food based industries with special reference to North Bengal'
National Webinar on 'COVID-19 & Vaccine preparedness's	Ministry of Culture, GoI; Jan 14, 2021	'New strains of SARS-CoV-2 and vaccine production platforms'
'Vigyan Sarvatra Pujyate' (celebration of 75 years of Science & Technology progress in India) Public Seminar	North Bengal Science Centre(National Council of Science Museums), GoI; 23rd Feb., 2022	'From the Annals of History of Science'
'Vigyan Sarvatra Pujyate'(celebration of 75 years of Science & Technology progress in India) Public Seminar	Jalpaiguri Government Engineering College, 24th Feb., 2022	'Important Advancement of Science and Technology THAT HAVE IMPACTED EVERY INDIAN'

b. Publications during COVID-19 pandemic:

S l . N o .	Name of the Authors	Name of the Journal/Volume, Impact factor (if any)	Year of Publication
1	Ranjan VK, Mukherjee S, Thakur S, Gupta K, Chakraborty R.	<i>Clin Microbiol Infect.</i> 4:S1198-743X(20)30667-4. Impact Factor: 7.18	2020
2	Roy C, Mandal SM, Mondal SK, Mukherjee S, Mapder T, Ghosh W, Chakraborty R.	<i>Genomics.</i> 112(6):5331-5342 Impact Factor: 6.2	2020
3	Bhattacharya S, Roy C, Mandal S, Sarkar J, Rameez MJ, Mondal N, Mapder T, Chatterjee S, Pyne P, Alam M, Haldar PK, Roy R, Fernandes S, Peketi A, Chakraborty R. , Mazumdar A, Ghosh	<i>FEMS Microbiol Lett.</i> 16;367(19): Impact Factor: 2.71	2020
4	Roy C, Rameez MJ, Haldar PK, Peketi A, Mondal N, Bakshi U, Mapder T, Pyne P, Fernandes S, Bhattacharya S, Roy R, Mandal S, O'Neill WK, Mazumdar A, Mukhopadhyay SK, Mukherjee A, Chakraborty R. , Hallsworth JE, Ghosh W.	<i>Nature Sci Rep.</i> Apr 3;10(1):5917. Impact Factor: 4.12	2020
5	Paria K, Paul D, Chowdhury T, Pyne S, Chakraborty R. , Mandal SM.	<i>Transl Med Commun.</i> 5(1):21. Impact Factor: 4.2	2020
6	Mandal SM, Chakraborty S, Sahoo S, Pyne S, Ghosh S, Chakraborty R.	<i>Infect Disord Drug Targets.</i> 20(1):69-75. Impact Factor: 2.8	2020
7	Manna S, Chowdhury T, Chakraborty R. , Mandal SM.	<i>Probiotics Antimicrob Proteins.</i> 23:1-13. Impact Factor: 3.53	2020
8	Roy, C., Mondal, N., Peketi, A., Fernandes, S., Mapder, T., Prabhakar, S P., Haldar, P.K., Nandi, N., Bhattacharya, T., Mazumdar, A., Chakraborty, R. , Ghosh, W.	<i>J Earth Syst Sci</i> 129, 157 (2020). https://doi.org/10.1007/s12040-020-01423-y Impact Factor: 1.83	2020
9	Baindara P, Chakraborty R. , Holliday ZM,	<i>New Microbes New Infect.</i>	2021

.	Mandal SM, Schrum AG.	2021;40:100837. doi:10.1016/j.nmni.2021.100837 Impact Factor: 1.94	
1 0 .	Sen S, Mondal N, Ghosh W, Chakraborty R.	<i>BioMetals</i> . https://doi.org/10.1007/s10534-021-00359-9-Impact Factor: 2.97	2021
1 1 .	Basak C, Mondal N, Sen S, Sarkar J, Ghosh W, Chakraborty R.	<i>Microbial Resource Announcement</i> . 0(38):e0062121.	2021
1 2 .	Bhattacharya S, Mapder T, Fernandes S, Roy C, Sarkar J, Rameez M J, Mandal S, Sar A, Chakraborty A K , Mondal N, Dam B, Peketi A, Chakraborty R , Mazumdar A, Ghosh W	<i>Biogeosciences</i> , 18, 5203–5222, 2021 Impact Factor: 4.78	2021
1 3 .	Mondal N, Peketi A, Mapder T, Mazumdar A, Chakraborty R and Ghosh W	<i>Journal of Earth System Science</i> . Impact Factor: 1.83	2021
1 4 .	Ranjan VK, Mukherjee S, Basak C, Chakraborty R.	<i>Microbial Drug Resistance</i> , 12, 1603-161. Impact Factor: 3.43	2021
1 5 .	Ganguly S, Chakraborty R.	<i>Nucleus</i> , 64, 383-399 Impact Factor: 0.565	2021

Professional Experience:

- Teaching, Learning And Evaluation Related Activities:

- Lectures, Seminars, Tutorials, Practicals, Contact Hours (semester-wise details)

S. No.	Course/Paper	Level	Mode of teaching*	Hours per week allotted
1.	Semester-I; Molecular Biology	PG	L	02
2.	Semester-I; Lab II- Molecular Biology	PG	P	03
3.	Semester-II; Microbiology and Industrial Applications	PG	L	01
4.	Semester-II; Genetics	PG	L	01
5.	Semester-II; Genetic Engineering	PG	L	01
6.	Semester-II; Lab-IV-Microbiology	PG	P	03
7.	Semester-II; Lab-V- Genetic Engineering	PG	P	01
8.	Semester-III, Bioprocess Engineering & Technology	PG	L	02
9.	Semester-III, IPR & Biosafety	PG	L	01
10.	Semester-III, Lab VI- Bioprocess Engineering & Technology	PG	P	02

11.	Semester-III; Lab-VII- Based on Elective	PG	P	01
12.	Semester-IV; Bioentrepreneurship	PG	L	03
13.	Semester-IV; Project Work	PG	L,P,S, T,	15

*Lecture (L), Seminar(S), Tutorial (T), Practical (P), Contact Hours (C)

◦ **Reading / Instructional material consulted and additional knowledge resources provided to Students**

S. No.	Course/Paper	Consulted	Prescribed	Additional Resource provided
1.	Semester-I; Molecular Biology	Methods updated in various journals; Methodology detailed in the Instruction Manual; Journal articles	Reading Reviews; current updates in development of methods and applications	Hand-out; ppt,
2.	Semester-I; Lab II- Molecular Biology	World Class Manuals and Handbooks, Printed versions of 'Methods in Enzymology'	To follow Manuals; prepare reagents, conduct own experiment; Take up challenging problems to interpret the results	Written Instructions of the methodologies
3.	Semester-II; Microbiology and Industrial Applications	Knowledge updating through e-learning sources; Playing U-tubes of lectures by renowned teachers/researchers across the globe	Text Books written by the Scientists; Reading Reviews; current updates in development of methods and applications	Hand-out; CDs, e-transfer materials, specialized print-outs of current development on the subject
4.	Semester-II; Genetics	Texts written by the original performers of the experimental genetics e.g William Hayes, Arthur Kornberg etc.	Texts written by the original performers of the experimental genetics e.g William Hayes, Arthur Kornberg etc	Hand-out; CDs, e-transfer materials, specialized print-outs of current development on the subject
5.	Semester-II; Genetic Engineering	Latest advancement in the tool box of the genetic engineers accessed on-line	Texts with challenging problems; consulting easy elucidations published in books of international editions	e-books; CDs, e-transfer materials, specialized print-outs of current development on the
6.	Semester-II; Lab-IV- Microbiology	American Society for Microbiology (ASM) handbooks and manuals	Following modified methods of certain assays suited to the availability of equipment; interconnected practical enabling the students with the flavor of research	Texts related to the modifications
7.	Semester-II; Lab-V- Genetic Engineering	Standard Handbooks/ Laboratory Manuals	To understand construction of genetically engineered strains and vectors before performing recombinant DNA technology practical	Texts that are referred to a method
8.	Semester-III, Bioprocess Engineering & Technology	Texts that are associated with problems related to each chapters	Thorough self-learning through solving practical problems encountered in a Bioprocess Industry	Problems to be solved by the students
9.	Semester-III, IPR & Biosafety	e-learning materials; Case studies both Indian and international	To study case studies and track development/ time line of the evolution and execution of IPR	To induce students to attend IPR workshops; collect materials from such workshops
10.	Semester-III, Lab VI- Bioprocess Engineering & Technology	Methods elaborated in Journal articles	Standardize assays before performing the main experiment	Print-outs
11.	Semester-IV; Lab- Elective related to Plant-Biotechnology	Journals; Industry proptocols	To take up training courses in Tissue culture at the centre of Floriculture and Agri-business Management	Commercial protocols are dictated by the Technical assistants of COFAM, NBU
12.	Semester-IV; Bioentrepreneurship	Assimilate materials scattered elsewhere	To develop innovative Bioentrepreneurial projects that are bankable	Model Bankable projects projects
13.	Semester-IV; Project Work	Journals	To go through original papers and innovate	e-versions of thesis (international institutes)

◦ **Use of Participatory and Innovative Teaching-Learning Methodologies, Updating of Subject Content, Course Improvement etc.**

S. No.	Short Description
1.	To develop innovative Bioentrepreneurial projects that are bankable; Challenge the students intellectually with problems; induce self-learning spree
2.	Design researchable interconnected practical

◦ **Examination Duties Assigned and Performed**

S. No.	Type of Examination Duties	Duties Assigned
1.	Centre-in- Charge	To monitor all jobs related to conducting of examinations
2.	Chairman of the Moderation Committee	To moderate questions papers, PG levels
3.	Chairman of Microbiology (UG level practical examination)	To execute planning and framing of practical question, evaluating scripts as Head-examiner
4.	Question -setter	Setting of questions in courses that are taught in semesters
5.	Examiner	Examine theory and practical papers in Semester examinations at P.G level

• **Co-Curricular, Extension, Professional Development Related Activities:**

S. No.	Type of Activity	Average Hrs/Week

Extension, Co-curricular & field based Activities		
1.	Floriculture and Horticulture technical consultancy, training	06
	Contribution to Corporate Life and Management of the Institution	Yearly/Semester wise responsibilities
2.	Head of the Department since September 2004	All responsibilities in running the department
3.	Member of the Honorable Court, NBU, since 2004	
4.	Course Corrdinator of the DBT sponsored M.Sc course in Biotechnology	To act as the bridge between DBT, GoI, & NBU
Professional Development Activities		
5.	Delivering lectures in every Orientation Courses since inception of the Academic Staff College, NBU	
6.	Participating as experts in Government organized Skill-development programmes including workshops	

Administrative Experiences:

- Head of the Department, Biotechnology (2004 – till date).
- Head of the Department, Microbiology (2005- 2007)
- Project Manager, Center of Floriculture and Agri-business Management (COFAM) (2006- 2017)
- Member, Executive Council, NBU (2011-12)
- Member, University Court, NBU (2004- 2017).

Selective List of Publications:

Edited Books:

1. [Amit Basak](#) (Editor), [Ranadhir Chakraborty](#) (Editor), [Santi M. Mandal](#) (Editor). 2016. *Recent Trends in Antifungal Agents and Antifungal Therapy*. Publisher: **Springer**; 1st ed. 2016 edition (5 June 2016) ISBN-10: 8132227808 ISBN-13: 978-8132227809.

Book Chapters:

2. Bhowal S, Chakraborty R. 2015. *MICROBIAL DIVERSITY OF ACIDOPHILIC HETEROTROPHIC BACTERIA: AN OVERVIEW*. In Biodiversity, Conservation and Sustainable Development Vol.I Issues and Approaches, Edition: Volume I, Chapter: 17, Publisher: New Academic Publishers, New Delhi 2015, Editors: Prithwiraj Jha, pp.157-
3. Cray JA, Bhaganna P, Singhal RS, Patil SV, Saha D, Chakraborty R, Iwaguchi S, Timson DJ, Hallsworth JE. 2014. *Chaotropic and Hydrophobic Stress Mechanisms of Antifungal Substances*. In: Dehne HW; Deising HB; Fraaije B; Gisi U; Hermann D; Mehl A; Oerke EC; Russell PE; Stammler G; Kuck KH; Lyr H (Eds), "Modern Fungicides and Antifungal Compounds", Vol.VII, pp. 73-80. © 2014 Deutsche Phytomedizinische Gesellschaft, Braunschweig, ISBN: 978-3-941261-13-6.
4. **Chakraborty R**, Kumar A, Mukherjee S, Saha Bhowal S, Mandal AK, Tiwary BK. 2013. *Oligotrophic bacteria of River Mahananda: Spanking reservoir of integron-borne gene cassettes coding for diverse proteins including antibiotic-resistance*. In: Biotechnology for people. ISBN:978-93-80663-86-9 (ed. S. Mukherjee), p. 50-59. Levant Books, Kolkata.
5. Saha Bhowal S, **Chakraborty R**. 2013. *Sulfur lithotrophy by acid-tolerant bacteria in acid-mine drainage*. In: Biotechnology for people. ISBN:978-93-80663-86-9 (ed. S. Mukherjee), p. 77-86. Levant Books, Kolkata.
6. Tiwary BK, Pradhan K, Nanda AK, Bothra AK, **Chakraborty R**. 2013. *Basics of Computer-aided drug design*. In: Biotechnology for people. ISBN:978-93-80663-86-9 (ed. S. Mukherjee), p. 151-167. Levant Books, Kolkata
7. Yadav K K, Mandal A K, **Chakraborty R**. 2012. *Biology of Bacterial biofilms*. In: Biology of Plants and Microbes. ISBN: 978-93-80663-63-0 (eds. D. Bose and S. Roy), Levant Books, Kolkata 14.
8. **Chakraborty R**, Roy P. 2006. *Microbial genomics as an integrated tool for developing Biosensors for toxic trace elements in the environment*. In Trace Elements in the Environment: Biogeochemistry, Biotechnology, and Bioremediation. P. 170-197 (editors: MNV Prasad et. Al.), CRC press, USA.
9. [Bhowal S](#), [Bhadra B](#), **Chakraborty R**. 2005. *Transposon mutagenesis of a metal resistant Gram negative isolate of river Torsa to target the genetic loci responsible for resistance to cobalt and nickel*. In Stress Biology. Narosa Publishing House, New Delhi. ISBN-13: 978-8173196652 (eds. U. Chakraborty and B. Chakraborty).
10. [Bhadra B](#), **Chakraborty R**. 2005. *Molecular screening of cobalt and nickel resistant gram negative isolates of river Torsa for the presence of homologous sequences of well characterized resistance genetic system*. In Stress Biology. Narosa Publishing House, New Delhi. ISBN-13: 978-8173196652 (eds. U. Chakraborty and B. Chakraborty).
11. Roy P, Sengupta A, **Chakraborty R**, Lahiri C, Ghosh W. 2002. *Chemotaxis of Acidithiobacillus ferrooxidans vis-à-vis Mineral-microbe interaction*. In Mineral Biotechnology. Allied Publishers Pvt. Ltd. New Delhi. ISBN 81-7764-349-5. (eds. L. B. Shukla and V. N. Misra).

Edited International Journal Volume (Special Issue):

12. **Editors:** MadhabK.Chattopadhyay, **Ranadhir Chakraborty**, Hans-Peter Grossart, Gundlapally S. Reddy, and Medicharla V. Jagannadhamuest. 2015. *Antibiotic Resistance of Bacteria*. Special issue published in "BioMed Research International"

Publication in peer-reviewed International Journals:

<u>o.</u>	Authors Names	Title of Paper	Name of the Journals	Volume and Page nos.	Year
13.	Sen S, Mondal N, Ghosh W, Chakraborty R.	Inducible boron resistance via active efflux in <i>Lysinibacillus</i> and <i>Enterococcus</i> isolates from boron-contaminated agricultural soil	BioMetals	Accepted, in Press. https://doi.org/10.1007/s10534-021-00359-0 Impact Factor: 2.97	2021

14. Basak C, Mondal N, Sen S, Sarkar J, Ghosh W, Chakraborty R.	Draft genome sequences from four novel strains of microbes isolated from <i>Lepidocephalichthys guntea</i>	Microbial Resource Announcement	0(38):e0062121.	2021
15. Ganguly S, Chakraborty R.	Bacterial epigenetics opens door to novel frontier in Infection biology	Nucleus	v.64 no.3 pp. 383-399 Impact Factor: 0.565	2021
16. Bhattacharya S, Mapder T, Fernandes S, Roy C, Sarkar J, Rameez M J, Mandal S, Sar A, Chakraborty A K, Mondal N, Dam B, Peketi A, Chakraborty R, Mazumdar A, Ghosh W	Sedimentation rate and organic matter dynamics shape microbiomes across a continental margin	Biogeosciences	18, 5203–5222, 2021 Impact Factor: 4.78	2021
17. Mondal N, Peketi A, Mapder T, Mazumdar A, Chakraborty R and Ghosh W	Indus and Nubra Valley hot springs affirm the geomicrobiological specialties of Trans-Himalayan hydrothermal systems	Journal of Earth System Science	Accepted, in Press. Impact Factor: 1.83	2021
18. Ranjan VK, Mukherjee S, Basak C, Chakraborty R.	Abundance of New Delhi Metallo- β -LactamaseProducing <i>Acinetobacter</i> , <i>Escherichia</i> , <i>Proteus</i> , and <i>Pseudomonas</i> spp. in Mahananda and Karala Rivers of India	Microbial Drug Resistance	12, 1603-1615 Impact Factor: 3.43	2021
19. Bandara P, Chakraborty R, Holliday ZM, Mandal SM, Schrum AG.	Oral probiotics in coronavirus disease 2019: connecting the gut–lung axis to viral pathogenesis, inflammation, secondary infection and clinical trials	New Microbes and New Infections	40: 100837 Impact Factor: 1.60	2021
20. Ranjan VK, Mukherjee S, Thakur S, Gupta K, Chakraborty R.	Pandrug-resistant <i>Pseudomonas</i> sp. expresses New Delhi metallo- β -lactamase-1 and consumes ampicillin as sole carbon source.	Clin Microbiol Infect	. 4:S1198-743X(20)30667-4. Impact Factor: 7.18	2021
21. Roy C, Mandal SM, Mondal SK, Mukherjee S, Mapder T, Ghosh W, Chakraborty R.	Trends of mutation accumulation across global SARS-CoV-2 genomes: Implications for the evolution of the novel coronavirus.	Genomics.	112(6):5331-5342 Impact Factor: 6.2	2020
22. Bhattacharya S, Roy C, Mandal S, Sarkar J, Rameez MJ, Mondal N, Mapder T, Chatterjee S, Pyne P, Alam M, Haldar PK, Roy R, Fernandes S, Peketi A, Chakraborty R, Mazumdar A, Ghosh W.	Aerobic microbial communities in the sediments of a marine oxygen minimum zone.	FEMS Microbiol Lett.	16:367(19): Impact Factor: 2.71	2020
23. Roy C, Rameez MJ, Haldar PK, Peketi A, Mondal N, Bakshi U, Mapder T, Pyne P, Fernandes S, Bhattacharya S, Roy R, Mandal S, O'Neill WK, Mazumdar A, Mukhopadhyay SK, Mukherjee A, Chakraborty R, Hallsworth JE, Ghosh W.	Microbiome and ecology of a hot spring-microbialite system on the Trans-Himalayan Plateau.	Nature Sci Rep.	Apr 3;10(1):5917. Impact Factor: 4.12	2020
24. Paria K, Paul D, Chowdhury T, Pyne S, Chakraborty R, Mandal SM.	Synergy of melanin and vitamin-D may play a fundamental role in preventing SARS-CoV-2 infections and halt COVID-19 by inactivating furin protease.	Transl Med Commun.	5(1):21. Impact Factor: 4.2	2020
25. Mandal SM, Chakraborty S, Sahoo S, Pyne S, Ghosh S, Chakraborty R.	Novel Compound from Flowers of <i>Moringa oleifera</i> Active Against Multi- Drug Resistant Gram-negative Bacilli.	Infect Disord Drug Targets.	20(1):69-75. Impact Factor: 2.8	2020
26. Manna S, Chowdhury T, Chakraborty R, Mandal SM.	Probiotics-Derived Peptides and Their Immunomodulatory Molecules Can Play a Preventive Role Against Viral Diseases Including COVID-19.	Probiotics Antimicrob Proteins.	23:1-13. Impact Factor: 3.53	2020
27. Paul D, Chakraborty R, Mandal SM	Biocides and health-care agents are more than just antibiotics: Inducing cross to co-resistance in microbes	Ecotoxicol Environ. Saf.	Vol. 174 Page nos. 601-610 Impact Factor: 4.87	2019
28. Saha T, Ranjan VK, Ganguli S, Thakur S, Chakraborty B, Barman P, Ghosh W, Chakraborty R	<i>Pradoshia eiseniae</i> gen. nov., sp. nov., a spore-forming member of the family <i>Bacillaceae</i> capable of assimilating 3-nitropropionic acid,	Int J SystEvolMicrobiol.	Vol.69 Page nos.1265-1273 Impact Factor: 2.4	2019

		isolated from the anterior gut of the earthworm <i>Eisenia fetida</i>			
29.	Maitra S, De A, Das B, Roy SN, Chakraborty R , Samanta A, Bhattacharya S.	Seasonal Variation of Phyto-Constituents of Tea Leaves Affects Antiproliferative Potential.	J Am Coll Nutr.	Vol. 38 Page nos.415-423 Impact Factor: 2.43	2019
30.	Manna S, Ghosh M, Chakraborty R , Ghosh S, Mandal SM.	A Review on Quantum Dots: Synthesis to In- silico Analysis as Next Generation Antibacterial Agents.	Curr Drug Targets.	Vol. 20 Page nos.255-262 Impact Factor: 2.86	2018
31.	Mandal SM, Manna S, Mondal S, Ghosh AK, Chakraborty R .	Transcriptional regulation of human defense peptides: a new direction in infection control.	Biol Chem.	Vol. 399 Page nos.1277-1284 Impact Factor: 3.27	2018
32.	Saha T, Chakraborty B, Das S, Thakur N, Chakraborty R .	<i>Chryseomicrobium excrementi</i> sp. nov., a Gram-stain-positive rod-shaped bacterium isolated from an earthworm (<i>Eiseniafetida</i>) cast.	Int J Sys EvolMicrobiol.	Vol.68 Page nos.2165-2171 Impact Factor: 2.4	2018
33.	Saha T, Chakraborty B, Das S, Thakur N, Chakraborty R.	<i>Chryseomicrobium excrementi</i> sp. nov., a gram-stain-positive rod-shaped bacterium isolated from an earthworm (<i>eiseniafetida</i>) cast.	. Int J SystEvolMicrobiol..	Vol. 68 doi: 10.1099/ijsem.0.002791 Impact Factor: 2.4	2018
34.	Tiwary BK, Dutta S, Dey P, Hossain M, Kumar A, Bihani S, Nanda AK, Chaudhuri TK, Chakraborty R .	Radical Scavenging Activities of <i>Lagerstroemia speciosa</i> (L.) Pers. Petal Extracts and its hepato-protection in CCl4-intoxicated mice.	BMC Complement Altern Med.	Vol.17 Page nos.55 Impact Factor: 2.98	2017
35.	Mahata D, Jana M, Jana A, Mukherjee A, Mondal N, Saha T, Sen S, Nando GB, Mukhopadhyay CK, Chakraborty R , Mandal SM.	Lignin-graft-Polyoxazoline Conjugated Triazole a Novel Anti-Infective Ointment to Control Persistent Inflammation	Nature Sci Rep.	Vol.7 Page nos.46412 Impact Factor: 3.99	2017
36.	Tiwary BK, Ghosh R, Moktan S, Ranjan VK, Dey P, Choudhury D, Dutta S, Deb D, Das AP, Chakraborty R .	Prospective bacterial quorum sensing inhibitors from Indian medicinal Plant extracts	Lett ApplMicrobiol	Vol. 65 Page nos.2-10 Impact Factor: 2.17	2017
37.	Roy C, Alam M, Mandal S, Haldar PK, Bhattacharya S, Mukherjee T, Roy R, Rameez MJ, Misra AK, Chakraborty R , Nanda AK, Mukhopadhyay SK, Ghosh W.	Global Association between Thermophilicity and Vancomycin Susceptibility in Bacteria.	Front Microbiol	Vol. 31;7:412. Impact Factor: 4.0	2016
38.	Pradhan K, Tiwary BK, Hossain M, Chakraborty R and Nanda AK	A mechanistic study of carbonyl activation under solvent-free conditions: evidence drawn from the synthesis of imidazole	RSC Adv.	Vol 6, 10743-10749 Impact Factor: 3.84	2016
39.	Mandal SM, Pati BR, Chakraborty R , Franco OL.	New insights into the bioactivity of peptides from probiotics.	Front Biosci (Elite Ed)	Jun 1;8:450-9. Impact Factor: 3.52	2016

40. Tiwary, B., Kumar, A., Pathak, R., Pandey, N., Yadav, K. and Chakraborty, R. 2016. The Locus *PgaABCD* of *Acinetobacter junii* Putatively Responsible for Poly- β -(1,6)-N-Acetylglucosamine Biosynthesis Might Be Related to Biofilm Formation: A Computational Analysis. **Advances in Microbiology**, 6, 222-232. doi: [10.4236/aim.2016.63022](https://doi.org/10.4236/aim.2016.63022). **Global Impact Factor: 0.765**.

41. Tiwary BK, Pradhan K, Nanda AK, **Chakraborty R**. 2015. Implication of Quinazoline-4(3H)-ones in Medicinal Chemistry: A Brief Review. **J Chem Biol Ther** 1: 104. doi: 10.4172/jcbt.1000104

42. Mandal SM, Chakraborty A, Hossain M, Mahata D, Porto W F, **Chakraborty R**, Mukhopadhyay CK, Franco OL, Hazra, TK, Basak A. 2015. Amphotericin B and Anidulafungin Directly Interact with DNA and Induce Oxidative Damage in Mammalian Genome. **Molecular BioSystems** 07/2015;

DOI:10.1039/C5MB00366K. Impact Factor: **3.18**.

43. Manna DK, Mandal AK, Sen IK, Maji P, Chakraborty S, **Chakraborty R**, Islam SS. 2015. Antibacterial and DNA degradation potential of silver nanoparticles synthesized via green route. **International Journal of Biological Macromolecules** 07/2015; Impact Factor: **3.10**

44. Kumar A, Tiwary BK, Kachhap S, Nanda AK, **Chakraborty R**. 2015. An *Escherichia coli* Strain, PGB01, Isolated from Feral Pigeon Faeces, Thermally Fit to Survive in Pigeon, Shows High Level Resistance to Trimethoprim. **PlosOne**. DOI:10.1371/journal.pone.0119329. Impact Factor: **3.53 PMID-25750990**

45. Tiwary BK, Bihani S, Kumar A, **Chakraborty R**, Ghosh R. 2015. The *in vitro* cytotoxic activity of ethno-pharmacological important plants of Darjeeling district of West Bengal against different human cancer cell lines. **BMC Complement Altern Med**. 7;15:22. Impact Factor: **2.02. PMID: 2588741**.

46. Chattopadhyay, M. K., **Chakraborty, R.**, Grossart, H. P., Reddy, G. S., & Jagannadham, M. V. 2015. Antibiotic Resistance of Bacteria (*Editorial*). **BioMed Research International**, 2015. Article ID 501658. Impact Factor: **1.579**

47. Mandal, A. K., Sen, I. K., Maity, P., Chattopadhyay, S., **Chakraborty, R.**, Roy, S., & Islam, S. S. 2015. Structural elucidation and biological studies of a novel exopolysaccharide from *Klebsiella pneumoniae* PB12. **International journal of biological macromolecules**. 79: 413-22. Impact Factor: **3.10. PMID-25999015**

48. Saha S, Nayak S, Bhattacharyya I, Saha S, Mandal AK, Chakraborty S, Bhattacharyya R, **Chakraborty R**, Mandal SM, Basak A. 2014. Understanding the Patterns of Antibiotic Susceptibility of Bacteria Causing Urinary Tract Infection in West Bengal, India. **Frontiers in Microbiology** 5: 463; doi: 10.3389/fmicb.2014.00463. Impact Factor : **4.0 PMID-25278932**

49. Ghosh R, Tiwary BK, Kumar A, **Chakraborty R**. 2014. Guava leaf extract inhibits quorum-sensing and *Chromobacterium violaceum* induced lysis of

- human hepatoma cells: whole transcriptome analysis reveals differential gene expression. **PlosOne**. DOI 10.1371/journal.pone.0107703. Impact Factor: **3.53 PMID-25229331** Page 26 of 10
50. Tiwary BK, Kumar A, Nanda AK, **Chakraborty R**. 2014. A Study on Optimizatoin of Marigold Petal Yield, Pure Lutein, and Formulaton of Free-Flowing Lutein Esters. **Journal of Crop Science and Biotechnology (Springer)**. DOI No.10.1007/s12892-014-0049-6. Impact Factor (yet to be decided).
51. Chakraborty S, Mandal AK, Sarwar S, Singh P, **Chakraborty R**, Chakraborty P. 2014. Bactericidal Effect of Polyethyleneimine Capped ZnO Nanopartcles on Multiple Antibiotic Resistant Bacteria Harboring Genes of High-Pathogenicity Island. **Colloids and Surfaces B :Biointerfaces**. <http://dx.doi.org/10.1016/j.colsurfb.2014.03.044>. Impact Factor: **4.29 PMID-24937133**
52. Tiwary BK, Pathak RK, Pradhan K, Nanda AK, Bothra AK, **Chakraborty R**. 2014. Evaluaton of drug candidature of some Quinazoline-4-(3H)-ones as inhibitor of human dihydrofolate reductase enzyme: Molecular docking and Insilico studies. **International Journal of Pharmacy & Pharmaceutical Sciences**. 5. Supplement 2, 393-400. Impact Factor: **1.59**
53. Tiwary BK, Zirmire RK, Pradhan K, Nanda AK, **Chakraborty R**. 2014. Preparaton and spectroscopic characterizatoin of inclusion complex of 2-phenyl-4H-Benzo[d][1,3]Oxacin-4-One and β -Cyclodextrin. **International Journal of Pharmacy & Pharmaceutical Sciences**. 6. Supplement 2, 176-79. Impact Factor: **1.59**
54. Sen IK, Mandal AK, **Chakraborty R**, Behera B, Yadav KK, Mait TK, Islam SS. 2013. Structural and immunological studies of an exopolysaccharide from *Acinetobacter junii* BB1A. **Carbohydrate Polymer**. 101: 188-195 Impact Factor: **3.48 PMID-24299764**
55. Sen IK, Mandal AK, Chakraborty S, Dey B, **Chakraborty R**, Islam SS. 2013. Green synthesis of silver nanoparticles using glucan from mushroom and study of antibacterial activity. **Int. J. Biol. Macromolecules**. 62: 439 – 449. Impact Factor: **3.10 PMID-24076192**
56. Kumar A, Ince İ, Katı A, **Chakraborty R**. 2013. *Brevibacterium siliguriense* sp. nov., a facultatively oligotrophic bacterium isolated from river water. **Int. J. Sys.Evol. Microbiol**. 63: 511-515. Impact Factor: **2.80 PMID-22523163**
57. Mukherjee S, Kumar D, Nanda AK, **Chakraborty R**. 2013. 16S rRNA gene sequence analyses of the metagenome derived from waters of river Mahananda at Siliguri: An approach to understand bacterial diversity. **Ind. J. Biotechnol**. 12: 80-87. Impact Factor : **0.6**
58. **Chakraborty R**, Kumar A, Bhowal SS, Mandal AK, Tiwary BK, Mukherjee S. 2013. Diverse gene cassettes in class 1 integrons of facultative oligotrophic bacteria of river Mahananda, West Bengal, India. **PLoS One**. 8(8):e71753. doi: 10.1371/journal.pone.0071753. Impact Factor: **3.53 PMID-23951238**
59. Yadav KK, Mandal AK, **Chakraborty R**. 2013. Copper susceptibility in *Acinetobacter junii* BB1A is related to the production of extracellular polymeric substances. Page 27 of 10 **Antonie Van Leeuwenhoek**. 104(2):261-9. doi: 10.1007/s10482-013-9946-9. Epub 2013 Jun 12. Impact Factor: **2.07 PMID-23756604**
60. Ghosh W, Alam M, Roy C, Pyne P, George A, **Chakraborty R**, Majumdar S, Agarwal A, Chakraborty S, Majumdar S, Gupta SK. 2013. Genome implosion elicits hostconfinement in Alcaligenaceae: evidence from the comparative genomics of *Tetrathioabacter kashmirensis*, a pathogen in the making. **PLoS One**. 8(5):e64856. doi: 10.1371/journal.pone.0064856. Print 2013. Impact Factor: **3.53 PMID-23741407**
61. Mandal AK, Yadav KK, Sen IK, Kumar A, Chakrabort S, Islam SS, **Chakraborty R**. 2013. Partial characterizatoin and flocculatng behavior of an exopolysaccharide produced in nutrient-poor medium by a facultative oligotroph *Klebsiella* sp. PB12. **J Biosci Bioeng**. 115(1):76-81. doi: 10.1016/j.jbiosc.2012.08.006. Epub 2012 Sep 1. Impact Factor: **1.74 PMID- 22944200**
62. Yadav K K, **Chakraborty R**. 2012. Designing primers to fish auto-inducer synthase gene(s) of the quorum sensing system in γ -proteobacteria and their in-silico PCR validation. **NBU J. Plant Sciences** Vol. 6, No.1 March 2012 p.25-29
63. Yadav KK, Mandal AK, Sen IK, Chakrabort S, Islam SS, **Chakraborty R**. 2012. Flocculating property of extracellular polymeric substances produced by a biofilm forming bacterium *Acinetobacter junii* BB1A. **Appl Biochem Biotechnol**. 168(6):1621-34. doi: 10.1007/s12010-012-9883-5. Epub 2012 Sep 12. Impact Factor: **1.94 PMID- 22968590**
64. Kumar A, Chakrabort S, Joshi P, Chakrabort P, **Chakraborty R**. A multiple antibiotic and serum resistant oligotrophic strain, *Klebsiella pneumoniae* MB45 having novel dfrA30, is sensitive to ZnO QDs. **Ann Clin Microbiol Antimicrob**. 10:19. doi: 10.1186/1476-0711-10-19. Impact Factor: **2.19. PMID-21595893**
65. Bhowal S, **Chakraborty R**. 2011. Five novel acid-tolerant oligotrophic thiosulfate metabolizing chemolithotrophic acid mine drainage strains affiliated with the genus *Burkholderia* of *Betaproteobacteria* and identification of two novel *soxB* gene homologues. **Res. Microbiol**. 162: 436-45. Impact Factor: **2.83 PMID-21349327**
66. Bhadra B, Nanda A K, **Chakraborty R**. 2011. *Enterobacter nickelidurans* sp. nov., a novel nickel tolerant enterobacteria isolated from Torsa river water of India. **NBU J Plant Sc**. 5:15-23
67. Kumar A, S. Mukherjee, **Chakraborty, R**. 2010. Characterizatoin of a novel Trimethoprim Resistance gene, dfr28, in Class I integron of an Oligotrophic *Acinetobacter johnsonii* Strain, MB52, isolated from River Mahananda, India. **Microbial Drug Resistance**. 16: 29-37. Impact Factor : **2.52 PMID-20192821**
68. Gurung A, **Chakraborty R**. 2009. *Acidithiobacillus ferrooxidans* in alleviatng the inhibitory effect of thiosulfate on the growth of acidophilic *Acidiphilium* species isolated from Garubathan AMD samples, India. **Can J. Microbiol**. 55: 1040-1048. Impact Factor: **1.221 PMID-19898546**
69. Sarkar S, **Chakraborty R**. 2008. Quorum sensing in metal tolerance of *Acinetobacter junii* BB1A is associated with biofilm production. **FEMS Microbiol Lett**. 282: 160-165. Impact Factor: **2.72 PMID-18397291** Page 28 of 10
70. Sarkar C, Mitra PK, Saha S, Nayak CR, **Chakraborty R**. 2008. Effect of copper hydroquinone complex on oxidatve stress-related parameters in human erythrocytes (in Vitro). **Toxicol. Mech. & Methods**. 19. DOI: 10.1080/15376510802164683. Impact Factor: **1.37. PMID-19778251**
71. Dey D, Mukhopadhyay A, **Chakraborty R**. 2008. A novel bacterial pathogen (*Enterobacter* sp.) isolated from the leaf roller, *Caloptilia theivora* of tea of Darjeeling foothills. **W. J. Microbiol. & Biotechnol**. 24: 2727-2729. Impact Factor: **1.779**
72. Mukherjee S, **Chakraborty R**. 2007. Conjugaton potential and class I integron carriage of resident plasmids in river water copiotrophs. **Acta Microbiol Immunol Hung**. 254:379-397. Impact Factor: **0.778. PMID 18088011**.
73. Nanda AK, Ganguli S, **Chakraborty R**. 2007. Antibacterial activity of some 3-(arylideneamino)-2-phenylquinazoline-4(3H)-ones: synthesis and preliminary QSAR studies. **Molecules**. 12:2413-2426. Impact Factor: **2.79. PMID 17978766**.
74. Bhadra B, Nanda AK, **Chakraborty R**. 2007. Fluctuatoin in recoverable nickel and zinc resistant copiotrophic bacteria explained by the varying zinc ion content of Torsa River in different months. **Arch Microbiol**. 188:215-224. Impact Factor: **1.86. PMID 17464499**.
75. Mukherjee S, **Chakraborty R**. 2006. Incidence of class I integrons in multiple antibiotic-resistant Gram-negative copiotrophic bacteria from the River Torsa in India. **Res Microbiol**. 157:220-226. Impact Factor: **2.83. PMID 16239097**.
76. Bhadra B, Nanda AK, **Chakraborty R**. 2006. Inducible nickel resistance in a river water isolate of India phylogenetically ascertained as a novel strain of *Acinetobacter junii*. **W. J. Microbiol. & Biotechnol**. 22: 225-232. Impact Factor: **1.779**.
77. Bhadra B, Roy P, **Chakraborty R**. 2005. *Serratia ureilytica* sp. nov., a novel urea utilizing species. **Int J Syst Evol Microbiol**. 55:2155-2158. Impact Factor: **2.80 PMID 16166724**.
78. Bhadra B., **Chakraborty, R.**, Das, S., Nanda, A.K. 2005. Investgatoin of some basic water quality parameters of the north Bengal Terai river Kaljani-a tributary of river Torsa, and comparison thereof with the mainstream. **J. Environ. Biol**. 26: 277-86. Impact Factor: **0.68. PMID 16161986**.
79. Mukherjee, S., Bhadra, B., Chakraborty, R., Gurung, A., Some, S., **Chakraborty, R**. 2005. Unregulated use of antibiotics in Siliguri city vis-a-vis occurrence of MAR bacteria in community waste water and river Mahananda and their potential for resistance gene transfer. **J. Environ. Biol**. 26: 229-38. Impact Factor: **0.68. PMID 16161978**.
80. Deb, C., **Chakraborty, R.**, Ghosh, AN., Mandal NC., Mukherjee, T., Roy, P. 2003. A generalized transducing thiophage (TPC-1) of a facultative sulfur chemolithotrophic bacterium, *Bosea thiooxidans* CT5, of α -Proteobacteria, isolated from Indian soil. **FEMS Microbiology letters**. 227: 87-92. Impact Factor: **2.72 PMID-14568152** Page 29 of 10
81. Bhadra, B., Mukherjee, S., **Chakraborty, R.**, Nanda, AK. 2003. Physico-chemical and bacteriological investigaton on the River Torsa of North Bengal. **J. Environ. Biol**. 24: 125-33. Impact Factor: **0.68 . PMID-12974452**

82. **Chakraborty, R.**, Singh, A., Lahiri, C., Deb, C., Roy, P. 2002. Colony morphology mutants of chemolithotrophic *Acidithiobacillus ferrooxidans* are associated with altered genomic distribution of family I repetitive DNA sequence. **Current Science**. 82: 1009-1014. Impact Factor: **0.926**.
83. **Chakraborty, R.**, Deb, C., Lohia, A., Roy, P. 1997. Cloning and Characterization of a High-Copy-Number Novel Insertion Sequence from Chemolithotrophic *Thiobacillus ferrooxidans*. **Plasmid**. 38: 129-134. Impact Factor: **1.61**.
84. **Chakraborty, R.**, Roy, P. 1992. Chemotaxis of chemolithotrophic *Thiobacillus ferrooxidans* toward thiosulfate. **FEMS Microbiology letters** 98: 9-12. Impact Factor: **2.72**
85. Sarkar, P.K., **Chakraborty, R.** 1991. Enrichment and isolation of caffeine degrading bacteria (*Pseudomonas* spp) from brewed tea waste dumping ground. **Ind. J. Expl. Biol.** 29: 679-80. Impact Factor : **0.835**

Science Popularization: As a Science popularizer, targets broad segments of the community, on the following three key elements:

1. **Interactive science and technology centres, NGOs dedicated to protection of Nature, Science Clubs and Government Departments related to Science and Technology:**

Key resource person and expert in different science popularization programmes since 2000, organized by North Bengal Science Centre (NBSC) under the Ministry of Culture, Govt. of India. It is relevant to cite his contribution in the last few years (from 23.04.2012 to 23.02.2022) where he delivered popular lectures on 'Mobilizing the Earth', 'Gender Issues Affecting Higher Education in Science & Technology Education', 'Effects of Climate Change on Biodiversity', 'Breakthroughs in Biotechnology', 'Future Science in India', 'Trees – Propeller of Life', 'Genesis of Personalized Medicines: Relevance of Ayurveda in the Present Millennium', 'Creativity, Invention & Innovation', 'Future Innovations in Science & Technology', 'Science & Technology in the Coming 100 Years', and 'From the Annals of History of Science'. Aside lectures, Prof. Chakraborty has evaluated the performances of participants of Scientific and Innovative Idea Competition of Inno-Fest – 2021, and spoke publicly in a Webinar on 'COVID-19 & Vaccine Preparedness' organized by NBSC.

Delivered public speeches organized by Siliguri Municipal Corporation, ICFAI Department of Management, Nature and Adventure Foundation of North Bengal, Paschimanga Vigyan-Mancha, Marwari Yuva-Manch, Horticultural Society, Indian Chamber of Commerce, West Bengal Pollution Control Board, Center of Floriculture and Agribusiness Management (NBU), Department of Food Processing Industry and Horticulture (GoWB), Department of Fisheries (GoWB), and Department of Science and Technology and Biotechnology (GoWB). Some examples on the theme of his talks like 'Smart City Planning', 'Water Conservation', 'Jalabat Taralam: Crisis', 'Save Vulture', 'Probiotics in aquaculture', 'Connecting people to Nature', 'Ecosystem Restoration', 'Developmental potential based on natural wealth and agroclimatic conditions of North Bengal: Advantages to tap', 'Cradle of Life (Water) in crisis', 'Flowers and Flower Markets', 'Prospects of Horticulture-based Medium and Small Scale Industries in Northern West Bengal', 'Multistoried Cropping System: A potential Technology' 'Organic Farming: Fresh, Local, Organic, Seasonal and Wholesome Food' and 'Children and Covid' explains the range and dedication towards popularizing science.

2. **Formal education/science learning Centres:**

Popular Science and technology lectures in several schools, colleges, Universities, and national Institutes. Some of his lecture topics are like this: 'What is inside an earthworm's gut- The microbiome of *Eisenia fetida*', 'Ethno-medicinal plants of Eastern Himalaya show promise to curb the menace of antibacterial-drug-resistance phenomenon via the strategy of disrupting quorum-sensing mechanism', 'Modern Life Science and Ayurveda', 'Future of Science in India', 'Physical interaction (beyond olfaction?) of earthworms with live microbes in Earthworm gut', 'Phenome of a *Klebsiella pneumonia* strain when environment offers scanty (?) nutrients to sustain life', 'Important Advancement of Science and Technology that have impacted every Indian', 'Water-the natural resource that sustains life on earth is in peril: Antibiotic-resistant-Superbugs in Environmental niches' and 'COVID-19-The Current Scenario'.

3. **Mass Media (radio, television, and newspaper):**

The democratising roles of science and technology interactive centres, as well as the creation of numerous venues or procedures for non-formal participation, are all examples of activities aimed at popularising science and technology. All are attempting to broaden the public's participation in the discovery, comprehension, and application of scientific and technological knowledge. Even the most isolated settlements now have portable transistor radios, and community television sets are becoming more common. Naturally, information for the general public must be provided in their own language and in a way that allows them to understand the message quickly. Communication by radio and television also requires a good voice, content, and other attributes. Rendered radio talks and contributing to Live Phone-in programs on popular discourse on science aimed at young people, women folks, and general public through ALL INDIA RADIO, Siliguri. The content of his radio talk ranged from topics like 'Mystery of Colours in Flowers', 'Bacteria that are friends of human beings', 'Medicinal plants of West Bengal', 'Hazards of Mobile vis-a-vis Radiofrequency Radiation', Prospect of Biotechnology', and 'Circular Economy in Modern City Planning'.

Television is widely acknowledged as the most effective medium for enlightening the people about the impact of science and technology on their lives—as well as their potential for progress. Served as key resource person for LIVE TELEVISION on "agricultural issues and affordable biotechnology inputs to farmers" through CTVN channels.

Despite the tense relationship that exists between scientists and journalists, the media has long been regarded as the most effective tool of promoting public awareness of science and technology. This has been crucial during COVID Pandemic times glued us to newspapers, desperately seeking every bit of information we can get. Committed in constantly feeding the newspaper reporters, particularly, The Statesman, to report on the pandemic. In each report Dr. Chakraborty was quoted verbatim. Few such reports in the recent pandemic were like this: "Covid uptick in some states stokes fears of a potential fourth wave " (21-04-2022); "Bhutan Covid surge sparks concerns for N Bengal" (17-04-2022); "XE variant: No reason to panic, says NB expert" (08-04-2022); "Predictions true, experts look at more immunity" (23-01-2022); "Omicron: Experts sound word of caution" (29-11-2021); "Stress on finding ways to contain Covid, co-exist with it" (01-11-2021); "Children's illness could be common virus" (16-09-2021); "Pujas are upon us, but Covid a matter of grave concern" (14-09-2021); "New Coronavirus variants leave experts worried" (06-09-2021); "Third Covid Wave- may not be severe, devastating: Experts" (30-08-2021); "Delta variant panic baseless, unwarranted, says doctors" (01-08-2021); "Covid 19: Experts say testing variations, .. cases" (29-07-2021); "Districts wake up to 'third wave' threat" (26-07-2021); " 'Third wave' of Covid 19 to ...Corridor?" (22-07-2021); "After Delta, Kappa variant has experts worried" (12-07- 2021); "Delta Plus variant major challenge, warns expert... vaccine"(22-06-2021); " Experts flag concerns over 'Vietnam Coronavirus variant'" (02-06-2021); "Triple mutant strain in state a challenge" (25-04-2021); " Experts fear a 'more virulent' 2nd wave" (14-03-2021); and "Expert fret about new UK strain of Coronavirus" (published on 22-12-2020).

