

## CV (Dr. Jnanendra Rath):



**Present Position** :  
**Institution and Address** : Assistant Professor (Stage-III)  
Department of Botany  
Visva-Bharati Central University  
Santiniketan, West Bengal, India  
E-mail: [jrath@visva-bharati.ac.in](mailto:jrath@visva-bharati.ac.in)

**Date of Birth** : 10-06-1976

**Date of Joining in Visva-Bharati** : 24<sup>th</sup> May 2007

**Highest Qualification.** : Ph.D.

**Area of expertise/Interest.** : Phycology, Metabolomics, Natural Product

**Number of Research Scholar Produced:** 2

**Number of Research Scholar Currently working:** 5

### Research Articles:

1. Joardar N, Sen A, **Rath J**, SinhaBabu SP (2021) Inhibition of thioredoxin reductase (TrxR) triggers oxidative stress-induced apoptosis in filarial nematode *Setaria cervi* channelized through ASK-1-p38 mediated caspase activation. *Molecular and Biochemical Parasitology* (In Press Pre-Proof) DOI: <https://doi.org/10.1016/j.molbiopara.2021.111364> (**Impact Factor - 1.571**)
2. Shaw P, Sen A, Mondal P, Bhowmik AD, **Rath J**, Chattopadhyay A (2020). Shinorine ameliorates chromium induced toxicity in zebrafish hepatocytes through the facultative activation of Nrf2-Keap1-ARE pathway. *Aquatic Toxicology*, 228, 105622. (**Impact Factor - 4.344**).
3. Bhakat S, Saha S, Mandal S, **J Rath** (2020) Antibacterial Activity of Desiccated Cyanobacterium *Anabaena* Sp. Isolated from Terracotta Monuments of Bishnupur, West Bengal. *International Journal of Pharmaceutical Sciences and Drug Research* 12 (2): 94-98.
4. Mandal S, Mandal TK, **Rath J** (2019). Investigation of therapeutically active constituents of homeopathy medicine from *Justicia adhatoda* L. and its clinical verification. *Journal of Pharmacognosy and Phytochemistry*, 8(3), 3790-3796.

5. Simithy J, Fuanta NR, Alturki M, Hobrath JV, Wahba AE, Pina I, **Rath J**, Hamann MT, DeRuiter J, Goodwin DC and Calderón AI (2018) Slow-Binding Inhibition of Mycobacterium tuberculosis Shikimate Kinase by Manzamine Alkaloids. *Biochemistry*, 57 (32), pp.4923-4933. **(Impact factor 2.952)**
6. Mandal S and **Rath J** (2015) Phytochemical and antioxidant activities of ethno-medicinal plants used by fisher folks of Chilika lagoon for Indigenous phytotherapy J Pharmacogn Phytochem. 3: 55-65
7. **Rath J**, Mandal S and Adhikary SP (2014) Ecophysiology of *Lyngbya aestuarii* to varying salinity regimes *Acta Physiologiae Plantarum*, 36: 409-419 **(Impact factor 1.760)**.
8. Mandal S and **Rath J** (2013) Algal colonization and its ecophysiology on the fine sculptures of terracotta monuments of Bishnupur, West Bengal, India. *International Biodeterioration and Biodegradation* 84: 291-299. **(Impact factor 4.074)**.
9. Bhattacharya S, **Rath J** and Ray S (2013) Cyanobacteria of soil-crust from forest soils of Birbhum district, West Bengal – distribution of species in relation to soil-parameters. *Phykos* 43:1-8
10. Bhattacharya S, **Rath J** and Ray S (2013) Effect of pH and varying concentration of nitrate, phosphate and iron on morphology, growth and nitrogenase activity in a soil-crust cyanobacteria *Scytonema coactile* Montagne ex Born et Flah. , *Phytomorphology* 63 101-111.
11. **Rath J**, Mandal S and Adhikary SP (2012) Salinity induced synthesis of UV-screening compound scytonemin in the cyanobacterium *Lyngbya aestuarii* *Photochem photobiol B. Biology* 115: 5-8 **(Impact factor 4.383)**.
12. Bhattacharya S, **Rath J**, Ojha SN and Ray S (2012) Soil-crust Cyanobacteria from Alluvial Zone of district Birbhum, West Bengal: Relating species distribution with soil parameters. *Phytomorphology* 62 :13-23
13. Bhattacharya S, **Rath J** and Ray S (2012) Composition, Basic features and distribution of Cyanobacteria in soil crusts – A Review. *Dynamic Biochemistry, Process Biotechnology and Molecular Biology* 6 : 1-12.

14. Mandal S, **Rath J** and Adhikary SP (2011) Adaptation strategies of the sheathed cyanobacterium *Lyngbya majuscula* to ultraviolet-B *Photochem photobiol B. Biology* 102: 115-122 (**Impact factor 4.383**).
15. Padhi B.K, **J. Rath** and Padhi P.K (2010) Diatoms for assessing the ecological condition of inland freshwater bodies. *World Rev of Sci, Technol & Sust. Development* 7: 352-359.
16. Samad L.K, **J. Rath** and S. P. Adhikary (2008) Growth response and protein profile of two different *Scytonema* species from cave walls and soil crusts in light and dark. *Algological Studies* 127: 49-60.
17. **Rath J.** and S.P. Adhikary (2007) Response of the estuarine cyanobacterium *Lyngbya aestuarii* to UV-B radiation. *J. Appl. Phycol* 19: 529-536. (**Impact Factor: 3.016**)
18. Ratha S.K., M. Jena, **J. Rath** and S.P. Adhikary (2007) Three Ecotypes of *Compsogon coeruleus* (Rhodophyta) from Orissa State, East Coast of India. *Algae (Korean Journal of Phycology)* 22 (2): 1-10. (**Impact Factor: 2.914**)
19. **Rath J.** and S.P. Adhikary (2006) Marine macro-algae of Orissa, east coast of India. *Algae (Korean Journal of Phycology)* 21(1): 49-59. (**Impact Factor: 2.914**)
20. **Rath J.** and S.P. Adhikary (2006) Seasonal variation of phytoplankton in Chilika Lake, east coast of India. *Seaweed Res. Utiln.* 28 (1): 43-48.
21. **Rath J.** and S.P. Adhikary (2005) Distribution of marine macro-algae at different salinity gradients in Chilika lake, east coast of India *Ind. J. Mar. Sc.* 34 (2): 237-241. (**Impact Factor : 0.328**)
22. **Rath J.** and S.P. Adhikary (2004) Effect of alkali treatment on the yield and quality of agar from *Gracilaria verrucosa* (Rhodophyta, Gracilariales) occurring at different salinity gradient of Chilika lake *Ind. J. Mar. Sc.* 33 (2): 202-205. (**Impact Factor: 0.328**)
23. **Rath J.** and S.P. Adhikary. (2003) Growth response of selected micro-algae of Chilika Lake to different salinity *Seaweed Res. Utiln.* 25 (1&2): 127-130.

24. **Rath, J.** and S.P. Adhikary (2002) Growth and spectral characteristics of four algae and agar yield of *Gracilaria verrucosa* at different salinity gradients of Chilika lake. *Seaweed Res. Utiln.* 24 (1): 41- 46.
25. Panda P.C., A.K. Pattnaik, **J. Rath** and S .N. Patnaik (2002) "Flora of Chilika lake and its immediate neighborhood: A Check-List" *J. Econ. Taxon. Bot* (26) 1-20.
26. **Rath J** and S.P. Adhikary. (2001) UV absorbing pigment in the seaweeds of Chilika lake." *Seaweed Res. Utiln.* 23(1&2): 163-168,
27. **Rath J** and S.P. Adhikary. (2001) Effect of UV-B on the UV absorbing pigments of seaweeds of Chilika Lake *Seaweed Res. Utiln.* 23(1&2): 169-174.

#### Book Publications:

1. Mandal S and **Rath J** (2015) Extremophilic Cyanobacteria for Novel Drug Development. Springer, USA pp. 92. (ISSN- 1864-8118; ISBN – 978-3-319-12008-9).
2. Adhikary S.P., M. Jena and **J. Rath** (2009) **Freshwater algae of coastal districts of Orissa state, India. *Bibliotheca Phycologica***, Band 115. Willkommen bei den Verlagen E.Schweizerbart, Borntraeger and Cramer Science Publishers, Stuttgart, Germany pp.166 36 plates ISBN: 978-3-443-60042-6; ISSN: 0067-8066.
3. **Rath, J** and S.P. Adhikary (2005) **Algal Flora of Chilika Lake**. Daya Publishing House, New Delhi. Xiv + 206 p., 30 col. Plts., ISBN: 8170353513.

#### CHAPTERS IN EDITED BOOKS

1. Bhakat S, Mandal S and **Rath J** (2020) Biofilm of Cyanobacteria: Environmental Applications *In: Arumugam M, Kathiresan S, Nagaraj S (ed.) Applied Algal Biotechnology*. Nova Scientific Publisher, New York, USA pp 311-330.
2. **Rath J**, Jena M and Adhikary SP (2013) Biodiversity Analysis of Soil and Fresh water Algae of Eastern and North Eastern Regions of India *In: G.P. Mishra and Asha Gupta (ed.) Ecorestoration and Biodiversity conservation*, Aavishkar Publishers Distributors, Jaipur pp. 32-54.
3. **Rath J** and Adhikary SP (2011) Chilika lake and its Biodiversity *In: Phycodiversity – Aspects and Prospects*. Ed. Prasad PK , Daya Publishing House, New Delhi (Now Astral International (P) Ltd) Delhi pp. 134-152.

4. **Rath J, S Mandal and Padhi BK (2010)** Prospective in Diatom Nanotechnology *In: M.K. Das (ed.) Algal Biotechnology*, Daya Publishing House, New Delhi pp. 25-35.
5. **Rath J and Adhikary SP (2010)** Biodiversity of Chilika lake, east coast of India *in: diversity of lower plant* Eds. Gupta, R.K. and Kumar, M. **IK International Publishing House Pvt. Ltd., New Delhi**, pp.121-136.
6. **Rath J and Mandal S (2009)** Sequestration of Heavy metals from Waste water Effluent by Micro-algae *in: Environmental Microbiology* Eds. Mishra BB, Nanda DR and Dave SR. A P H Publication Corporation, New Delhi, pp. 55-70.
7. **Mondal S, Mandal S and Rath J (2009)** Photochromatic adaptation of marine cyanobacteria *Lyngbya aestuarii* (Mertens) Liebman ex Gomont *in: Advances in plant biology* Eds. Mandal, S and Bhattacharya S. **Binapani Educational and Welfare Trust, Sriniketan**, pp.289-297.
8. **Rath. J. and S.P. Adhikary (2008)** Biodiversity Assessment of Algae of Chilika Lake, East Coast of India *In: Mohanty, Pratap K. (Ed.) Monitoring and Modelling Lakes and Coastal Environments*. Springer.
9. **Rath. J. and S.P. Adhikary (2007)** Bioprospecting of marine algae *In: Gupta R. K and V D. Pandey (eds.) Advances in Applied phycology*. Daya Publishing house, New Delhi. Pp 42-55.

#### **ONGOING RESEARCH PROJECTS:**

- **As PI: Project entitled “ Unlocking cryptic and anti-quorum sensing natural products of cyanobacteria from stressed habitats in search of novel antibiotics against antimicrobial resistance”** Funded by **SERB, DST, Govt. Of India (Approved Budget 46,71,370/- for 3 years)**
- **As PI: Project entitled “Exploration of DHA (docosahexaenoic acid) producing algae from wetlands of West Bengal for maternal supplement and neurodevelopment of young children’s of West Bengal”** Funded by **WBDST, Govt. Of West Bengal (Approved Budget 10,80,000/- for 3 years)**

### **COMPLETED RESEARCH PROJECTS:**

- **As PI:** Project entitled “**Algal diversity of East Calcutta wetland, Ramsar site and evaluation of its phycoremediation potential**” Funded by UGC, New Delhi. (Approved Budget 7,47,000 /- for 3 years)
- **As Co-PI:** Project entitled “**Molecular taxonomy of stress tolerant cyanobacteria and characterization of stress proteins and antioxidant defense systems in selected anhydrobiotes**” Funded by Department of Science and Technology, Govt. of India. (Approved Budget 29,93,000 /- for 3 years)
- **As Co-PI:** Project entitled “**Prospecting chemical components from Cyanobacteria to deal with UV Radiation**” Funded by CSIR, Govt. of India. (Approved Budget 19,76,000 /- for 3 years)

### **MEMBERSHIP / PARTNER:**

- Phycological Society of America
- Euglena International Network (EIN)
- Society of wetland Scientist (SWS), USA
- World Federation of Culture Collections (WFCC)
- Alumni of UNITED NATIONS INSTITUTE FOR TRAINING AND RESEARCH (UNITAR)
- Indian Phycological society
- Association of Microbiologist of India (Life Member)
- Member of The American Association for the Advancement of Science (AAAS)
- Seaweed Research & Utilization Association of India (Life Member)
- Partner of UNESCO affiliated “Expert Center for Taxonomic Identification” (ETI)

### **ACADEMIC VISIT TO FOREIGN COUNTRIES:**

1. The University of Mississippi, **USA**
2. University of Alabama, Birmingham, **USA**
3. The University of Adelaide, **Australia**
4. WFCC- Florianopolis, **Brazil**
5. University of Natural Resources and Life Sciences, **Vienna, Austria**
6. Kota Kinabalu, **Malaysia**

7. Alfred Wegener Institute (AWI), Bremerhaven, **Germany**
  8. United Nations Institute for training and Research, Kushiro, **Japan**
  9. United Nations Institute for training and Research Hiroshima, **Japan**
  10. South African National Biodiversity Institute- **Durban, South Africa**
  11. Wageningen University – **The Netherlands**
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