

Prof. Siba Prasad Adhikary

Biodata

I. Present address:

- (i) Village: Maniakati, PS: Surada-761108, Dist. Ganjam, Odisha
- (ii) 200B, BDA Duplex Colony, Baramunda, Bhubaneswar 751003, Odisha

II. Past position(s) and affiliation to different Universities:

- (i) Vice-Chancellor, Fakir Mohan University, Balasore, Odisha (23 May 2014 to 01 August 2017, on lien from Visva-Bharati)
- (ii) Professor & Head, Department of Biotechnology, Visva-Bharati (University), Santiniketan, West Bengal (9 July 2009-30 April 2019).
- (iii) Lecturer, Reader and Professor of Botany, Utkal University, Vani-Vihar, Bhubaneswar, Odisha (28 October 1987 to 8 July 2009)

III. Parents: Son of Late Devaraj Adhikary and Late Radha Adhikary

IV. Date of Birth: 2nd April 1954; Place of Birth: Surada-761108, Dist. Ganjam, Odisha.

V. Awards and Distinctions:

Awards:

1. **Samanta Chandra Sekhar Award** In Life Science for scientific contribution in the state of Odisha, (The highest scientific awarded by **Orissa Bigyan Academy**), 1999.
2. **Dr. B.P. Pal National Environmental Fellowship Award for Biodiversity by the Ministry of Environment and Forests, Govt. of India** , 2009
5. **Life time achievement Award in Phycology**” conferred with a medal and citation by Krishnamurthy Institute of Algology, Chennai, 2011.
6. **Prof. Harihar Pattnaik memorial Award in Environmental science**, by Orissa Botanical Society at Ravenshaw University, 2012 (Prof. H. Pattnaik was an eminent Botanist and former Vice-Chancellor of Berhampur University)
7. **U.G.C. Research Award during IXth plan** by University Grants Commission, New Delhi, 1999
8. **Young Scientist Award by Indian Botanical Society**, December 1983.

Distinctions:

1. **Fellow of the National Academy of Agricultural Sciences(FNAAS),2008**
2. **Fellow of National Environmentalists Association (FNEA),2012**
3. **Fellow of Indian Botanical Society (FBS),1998**
4. **President, Orissa Botanical Society, 2016-17**
5. **President, Probir Chatterjee Research Foundation, University of Calcutta, Kolkata, 2012-2018.**

VI. Visit to Foreign countries for research in the lab of well known scientists:

1982-1983, Post-doctoral Fellow, supported by DAAD – Germany at the Institute for Microbiology, Freiburg i.Br., **Germany**. Supervisor: Prof. J. Weckesser.

1991-1992, Visiting fellow, supported by J.S.P.S. at the National Institute for Basic Biology, Okazaki, **Japan**. Supervisor: Prof. Y. Fujita.

October **1996** – December 1996, Visiting Fellow, supported by DAAD at University of Konstanz, **Germany**. Collaborator: Prof. P. Boeger

October **2001** – November 2001,: Visiting Fellow, Supported by DAAD at the Institute for Microbiology and Molecularbiology, University of Giessen, **Germany**: Collaborator: Prof. Dr. Gabriele Klug .

September **2006** –INSA-ASCR exchange of scientists visit for 4 weeks at Trebon, **Czech Republic**; Collaborator: Dr.JamoirLukavsky.

October to December **2006**: Visiting Fellow, Supported by DAAD at the ForschungsZentrum, Juelich, **Germany**: Collaborator: Dr. Eberhard Hegewald.

May 2006, May 2007 and June **2008**: Visit to University of Rome “Tor Vergata”, University of Messina, Sicily, and the Department of Agricultural Biotechnology, University of Florence, **Italy** through a Indo-Italian Collaborative research for two weeks each : Collaborators: Prof. Roberto De Philippis, Prof. Clara Urzi and Prof. PatriziaAlbertano.

May 16 to June 15, **2008**, Visit to Comenius University, Bratislava, **Slovak Republic** through a Visiting Fellowship of Slovak National Science Programme. Collaborator: Dr.LubomirKovacik

May 19 to June 8, **2011**: Visit to Biological Research Centre of the Hungarian Academy of Sciences, Szeged, **Hungary** though INSA-HAS Exchange of scientists visit, Collaborator: Dr. Zoltan Gombos.

June 9 to June 17, **2011**: Visit to University of Rome, **Italy** under the MOU between Visva-Bharati and University of Rome for the bilateral project “Biotechnology and nanotechnology of Cultural heritage”; Collaborators: Prof. PatriziaAlbertano and Dr. Laura Bruno.

January 21 February 5, **2014**: Visit to Mosonmagyaróvár, University of West **Hungary** though UGC-Indo-Hungary Educational Exchange Program 2013-14: Collaborator: Prof. Vince Ordog.

VII. University Education:

- I. **D.Sc.**; Utkal University, Bhubaneswar, Odisha, 2000 (1st D.Sc. in Botany of Utkal University by research). Title of D.Sc. thesis “ Ecophysiology of cyanobacteria under diverse environmental conditions” [First D.Sc. in Botany of Utkal University by Research]

- II. **Ph.D.**; Berhampur University, Odisha, 1980 (worked as CSIR JRF&SRF)
Title of Ph.D. thesis “ Physiological studies on heterotrophic growth of *Westiellopsisproliflica* Janet”
- III. **Masters degree**; Berhampur University, Odisha, 1976; **1st Position in First class in the University**; Subject, Botany; **Awarded University gold medal.**
- IV. **Bachelors degree**; Berhampur University, Odisha, 1974, **1st position in First class Botany (Honours) of the University**, Subject: Botany (Hons.), Zoology, Chemistry.

VIII. Areas of specialization/expertise/research and innovation:

1. Biodiversity and molecular phylogeny of Cyanobacteria and Algae
2. Genomics of cyanobacteria from stressed environments
3. Biodeterioration of stone monuments of India and their conservation
4. Biofertilizers (BGA and Seaweed Liquid Extract) for agriculture
5. Rural based biotechnology for Bioentrepreneurship in organic farming

IX. Professional experience:

Research and teaching at various institutions:

Time (From/to-Month/year)	Position	Name of the Institution
1/Nov. 1976 - 10/Aug.1980	C.S.I.R., New Delhi, Research fellow (Worked for Ph.D. degree)	Berhampur University, Berhampur-760 007, Odisha.
12/Aug. 1980 - 31/Oct. 1984	Lecturer in Botany (Through Service Selection Board, Govt. Of Orissa)	Nowrangpur College, Nowrangpur 764 063,Odisha.
02/Nov. 1984 - 27/Oct. 1987	Lecturer Botany (Through Orissa Public Service Commission, Govt. of Orissa)	Dharanidhar College, Keonjhar-758 001,Odisha.
28/Oct. 1987 - 31/Dec. 1993	Senior Lecturer in Botany (Through selection by Utkal University, Bhubaneswar)	Post-Graduate Departments, Utkal University, Bhubaneswar-751 004,Odisha
01/Jan. 1994 - 31/Dec.2001	Reader in Botany	Post-Graduate Departments, Utkal University, Odisha
1/Jan 2002 - 8/July 2009	Professor in Botany & Biotechnology	Post-Graduate Departments, Utkal University, Odisha
9/July 2009 – 23/May 2014	Head & Coordinator, DBT-(MSc-HRD) Program Dept. of Biotechnology	Visva-Bharati (a Central University), Santiniketan 731235, West Bengal

24/May 2014 - 02/August 2017	Vice-Chancellor F.M. University	Balasore 756020 Odisha
03/August 2017 – 30/April 2019	Professor, Dept. of Biotechnology (HOD & Coordinator from 26/10/17 to 27/4/18)	Visva-Bharati (a Central University), Santiniketan 731235, West Bengal

X. Member in Academic Committees/Boards:

1. Member of Search Committee for Vice-Chairman of State Higher Education Council, Govt. of Odisha, 2017
2. Chairman, Odisha Higher Education Policy, Govt. of Odisha, 2015-2016
3. Member of the Executive Council, Central University of Odisha 2016-2019.
4. Member of Executive Council of the National Academy of Agricultural Sciences (NAAS) in Natural Resource Management : 2014-2017.
5. Member of the Governing body of the Naba Krushna Choudhuri Institute of Social Sciences, Bhubaneswar, 2015-17.
6. Member of the Faculty Advisory Committee in the Centre for Advanced Studies in Botany, North Eastern Hill University, Shillong, Meghalaya, 2013-14.
7. Member of the Faculty Advisory Committee in the Centre for Advanced Studies in Botany, Banaras Hindu University, Varanasi, Uttar Pradesh, 2013-14.
8. Member of the expert committee in Biotechnology of UGC, New Delhi for assessment of major research projects for funding to Universities and colleges in India, 2011-2012.
9. Member of Research Advisory Committee of the National Institute of Abiotic Stress Management, Baramati, Maharastra for 3 years 2011-2014.
10. Member of the monitoring committee of CSIR for the program “New Millennium Indian Technology Leadership Initiative, NMITLI” on “Biofuel from marine algae” 2010-2013.
11. Member of the judging committee of ICAR, New Delhi for Jawaharlal Nehru Award for Outstanding doctoral thesis research in Agricultural and Allied Sciences, 2010, 2011, 2014.
12. Member of the expert committee of ICAR, New Delhi for Swami SahajanandaSaraswati outstanding extention scientists Award in Agricultural Sciences, 2012.
13. Member in the Management Board of Ocean Science and Technology Cell at Berhampur University by the Ministry of Earth Sciences, Govt. of India, 2009 vide letter of the Ministry dated 23rd December 2009.

14. Member of Orissa Coastal Zone management Authority for 3 years, 2005-2007 (Inducted by the Ministry of Environment and Forests, Govt. of India and published in Govt. of India Gazette, Dated 3rd February 2005).
15. Quinquennial Review ICAR Team member for assessment of CMFRI, Cochin and its sister Institutes across India , 2008-2009.
16. Member of the Confidential operating Team of GATE 2012-14 of IIT, Kharagpur.
17. Member of the Consortium Advisory Council of the project of ICAR “Toll-like receptors in phylogenitically divergent fish species-their contribution in modulating the innate immunity” for the year 2011-2014.
18. Member of the Sectional Committee on “Natural Resource management” of the National Academy of Agricultural Sciences (NAAS, 2013-16 and Member of Executive Council of NAAS 2015-2017)
19. Head & Coordinator of DBT-HRD Biotechnology Program at Visva-Bharati University, Santiniketan, West Bengal; Coordinator, DST-FIST Programme of Biotechnology at Visva-Bharati, Chairman of BOS Biotechnology, Visva-Bharati. (July 2009 to May 2014& August 2017 to March 2019).
20. Associated Coordinator of DBT-HRD Biotechnology Program at Utkal University, Bhubaneswar, Odisha: April 2004 to June 2009.

XI. Publication profile (up to 31st December 2021) :

- (A) Publications in peer reviewed journals = 171
(B) Genome sequences published in American Society of Microbiology Journal= 5
(C) Full papers as chapters in Seminar/conference proceedings or book chapters = 61

Total Research publications = 237

- (D) Number of Books = 5

[Details in the updated list of publications in separate pages]

XII. Major Research Projects executed (1988-2014):

1. Research Project entitled: "Ecophysiological studies on cyanobacteria in a Sponge-iron factory effluent polluted area" from **October 1987 to September, 1989**: sponsored by Department of science Technology & environment, Government of Orissa.
2. Research project entitled: "Phytoplankton ecology of temple tanks of Puri with special reference to pollution indicator species and waterbloom control" from **August 1990 to July 1993**: sponsored by University Grants Commission, Delhi.

3. Research project entitled: "Strategies of environment management for withering of rocks due to microorganisms in the temples of Puri, Konark and Bhubaneswar" from **April 1994 to March 1997**: sponsored by Ministry of Environment and Forests, Govt. of India.

4. Research Project entitled: "Survey, isolation and screening of region specific, stress compatible strains of diazotrophic cyanobacteria from the rice fields of Orissa State for their use as biofertilizer" from **June 1994 to May 1998**: sponsored by Department of Biotechnology, Ministry of Science and Technology, Govt. of India.

5. Lab-to-land project entitled "Production, demonstration and popularization of BGA biofertilizer technology in a rural area of Orissa state" from **April 2000 to March 2004**: Sponsored by the Department of Biotechnology, Government of India, New Delhi. The project was implemented in the villages Asurabandha Panchayat in Surada block of Ganjam District with an aim to develop entrepreneurs on BGA biofertilizer among farmers & unemployed youth in rural areas of the state.

6. Research project entitled "Biodiversity assessment of marine algae of Orissa and their screening for production of bioactive substances", from **June 2004 to May 2007**. Sponsored by Council of Scientific and Industrial Research, New Delhi.

7. Lab-to-Land project entitled "Entrepreneurship development in rural areas of Orissa state through production of biofertilizers" sponsored by Department of Biotechnology, Govt. of India, New Delhi, **April 2006- March 2009**.

8. International collaboration: Indo-Italian Joint Research project entitled "Assessment of bioerosion of exposed surfaces of monuments and hypogea and development of preventive strategies for their conservation.", DST, Govt. of India, **April 2005-March 2007**.

9. Research project entitled "Isolation and characterization of antioxidant compounds and marketable agar from sea weeds of Chilika lake". Sponsored by Department of Science and Technology, Govt. of Orissa, **June 2006 to May 2009**.

10. Collaborative cluster initiative on "Functional genomics of stress tolerant cyanobacteria" with specific project entitled "Molecular taxonomy of stress tolerant cyanobacteria and characterization of stress proteins and antioxidant defence systems in selected anhydrobiotes" sponsored by Department of Science and Technology, Govt. of India, 2010-2013.

11. Collaborator for eastern India in the All India Coordinated Taxonomy capacity building project on Algae-"AICOPTAX" sponsored by Ministry of Environment and Forests, Govt. of India [**Sept. 2003 to March 2012**]; Project executed at Utkal University since 2003 was transferred to Visva-Bharati and continued till March 2012. Our group was in charge of biodiversity assessment of algae of eastern and north eastern region of India including eastern Himalayas and Indo-Burmese hotspots.

12. Lab-to-Land project entitled "Development of seaweed liquid fertilizer from seaweeds of Chilika lake for pulses and vegetable crops and entrepreneurship development in rural areas" sponsored by Department of Science and Technology, Govt. of India, New Delhi, **June 2010-May 2013**.

13. Dr. B.P. Pal National Environmental Fellowship Award project for Biodiversity, Ministry of Environment and Forests, Govt. Of India, **April 2012 to March 2014.**

14. International collaborative project through MOU between Visva-Bharati and University of Rome "Tor Vergata", Italy on Biotechnologies and nanotechnologies of Cultural heritage **from 2011-2014** renewed between University of Rome and Fakir Mohan University, Odisha **from 2014-2016.**

XIII. Association with Professional Bodies:

- a. Executive body member of Phycological Society of India (1991-1993), Member of editorial board (1997-1999, 2011-continuing) and life member.
- b. Indian Botanical Society (life member) & Fellow of Indian Botanical Society since 1998.
- c. Indian Science Congress Association (life member)
- d. Orissa Botanical Society (Life member, Treasurer from 1988 to 1990 and President).
- e. Seaweed research and utilization Association of India (Executive body Member).
- f. Association of Microbiologists of India (Member); Secretary of Bhubaneswar chapter of Association of Microbiologists of India (1996-2009).
- g. Society of Radiation Biologists of India (Life member)
- h. Orissa Environmental Society (Life member) & Executive body member (03-05)
- i. Executive body member of Krishnamurthy Institute of Algology, Chennai, 2007
 - j. Member of the editorial board of Vigyan Diganta (The science magazine in regional language by Orissa Bigyan Academy) for 5 years.
- k. Executive committee member of Krishnamurthy Institute of Algology, Chennai, 2008-continuing.
- l. President of Probir Chatterjee Foundation, Dept. Botany, Calcutta University, Kolkata in 2011 and continuing.
- m. Life member, Botanical Society of Bengal.
- n. Member of the International Association of Cyanophyte Research, USA

XIV. Hosting visiting Scientists/Professors from abroad :

1. Dr. Csaba Bagyinka visited and worked at my laboratory under INSA-Hungarian Academy of Sciences exchange programme during for two months in 1997.

2. Dr. Stephani Dojani and Dr. Alexandra Bacharan of the Department of Botany, University of Kaiserslautern, Germany visited and worked at my laboratory for 4 weeks from 18 January 2003 to 25th February 2003 on a collaborative research programme on biological crusts.

3. Prof. Patrizia Albertano, University of Rome, Tor Vergata and Prof. Clara Urzi, Dept. of Microbial Genetics and Molecular Biology, University of Messina, Italy visited and worked at my lab from December 20 to December 31, 2006.

4. Prof. Roberto De Philippis, Dept. Agricultural Biotechnology, University of Florence, Italy visited my lab at Utkal University and worked from April 10 to April 24, 2007.

5. Dr. Elena Lukesova visited our lab at Visva-Bharati for 3 weeks through the exchange visit of scientists through the Academy of Sciences of the Czech Republic.

6. Dr. Lubomir Kovacik, Comenius University, Bratislava, Slovak Republic; 7. Dr. Laura Bruno, University of Rome "Tor Vergata", Roma, Italy and 8. Dr. Roberta Constegri, University of Rome, Italy visited our lab at Visva-Bharati for one week for collaborative research from 14th November to 20th November 2013.

XV. Supervision of Awarded Doctoral thesis:

(24 awarded Ph.D. by Utkal Univ. Odisha, and 3 by Visva-Bharati, Santiniketan, West Bengal under my supervision = Total: 27)

1. Heterotrophic potentialities of several filamentous blue green algae (cyanobacteria) of local rice-fields. (1989-1993) By: A.K. Bastia. (Ph.D. Degree awarded, 24-1-1994).
2. Ecophysiological studies on *Microcystis* sp. of the temple tanks of Puri and Bhubaneswar (1990-1994) By: N. Swain. (Ph. D. degree awarded, 13-2-1995)
3. Ecophysiological studies on epilithic blue-green algae (cyanobacteria) from the Sun temple, Konark (1991-1995) By: Late D.P. Satapathy. (Ph.D. Degree awarded, 11-4-1996)
4. Pesticide tolerance of nitrogen-fixing blue-green algae (cyanobacteria) of local rice fields (1990-1995) By: M.K. Das (Ph. D. degree awarded, 22-1-1997)
5. Toxicity of carbofuran to nitrogen-fixing blue-green algae of local rice fields (1992-1995) By: B. Rath (Ph.D. Degree awarded, 9-12-1997).
6. Tolerance of nitrogen fixing blue-green algae (cyanobacteria) of local rice fields to commercial fertilizers (1994-97) By Amarendra Misra (Ph.D. degree awarded, 9-7-1998)
7. Studies on epilithic cyanobacteria occurring on the temples and their response to various algicides (1994-1998) By Pratima Tripathy (Ph.D. degree awarded, 30-11-1998).
8. Studies on response of nitrogen fixing blue-green algae (cyanobacteria) from rice fields to agrochemicals (1994-1998) By Jayanta Kumar Sahu (Ph.D. degree awarded, 16-10-1999).
9. Ecophysiological studies on epilithic cyanobacteria occurring on the monuments of archeological importance (1994-1998) By Amarpalli Roy (Ph.D. degree awarded, 23-12-1999).
10. Ecophysiological studies on nitrogen fixing cyanobacteria from rice fields of Orissa state (1994-1999) By Hrusikesh Nayak (Ph.D. degree awarded, 31-10-2000).

11. Ecophysiological studies on algae of Chilika lake, east coast of India. (1999-2002) By. JnanendraRath (Ph.D. degree awarded, 10-9-2003).
12. Ecophysiological strategies of cyanobacteria in the crusts at archaeological sites and rice field soils (2000-20002) By BagmiPattanaik (Ph.D. degree awarded ,23-9- 2003).
13. Evaluation of the effect of herbicides on macrophytes of fish ponds with special reference to their impact on aquatic environment. (1999-2002) By Amita Chattopadhyay (Ph.D. degree awarded,21-2- 2004).
14. Bacterial diversity in coastal waters of Orissa, Bay of Bengal (1999=2005) By SashiKanta Dash (Ph.D. degree awarded: 20-6-2006).
15. Growth kinetics and heavy metal precipitation by sulphate reducing bacteria. By. Debjani Mallik Ph.D. degree awarded: 9-10-2007).
16. Ecophysiological studies on drought tolerant cyanobacteria in different soils. By. P. Tripathy (Ph.D. degree awarded on 18-05-2008).
17. Ecological studies on Powai lake of Mumbai with special reference to bloom forming algal populations. By A. Taterao Landge (Ph.D.degree awarded on 30-9-2008).
18. Biodiversity of freshwater algae from eastern India with special emphasis on habitat specific species. By. M. Jena (Ph.D. degree awarded on 12 February 2009).
19. Freshwater Cyanophyta, Euglenophyta and Rhodophyta of Orissa. By. Sachitra Kumar Ratha(Ph.D. degree awarded in March 2010).
20. Diversity of cyanobacteria and micro algae on buildings and cultural monuments and their survival strategies By Lakshmi Kumari Samad, Ph.D. degree awarded on 19th November 2010.
21. Isolation, screening and application of region specific *Rhizobium*, *Azotobacter* and consortium of biofertilizers for various crops By Santosh Kumar Sethi, Ph. D. degree awarded on 9th May 2011.
22. "Screening, isolation and characterization of antioxidant compounds from seaweeds of Chilika lake" By Jyotsna Rani Pradhan: Ph.D. degree by Utkal University, Bhubaneswar awarded on 29th February 2012.
23. "Freshwater algae from Lentic habitats of eastern and north-eastern region of India" By Sudipta Kumar Das: Ph.D. Degree by Utkal University on 14th Feb. 2013

24. "Freshwater algae from Lotic habitats of eastern and north-eastern region of India" By Sukumar Bhakta: Ph.D. degree awarded by Utkal University on 14th November 2014.
25. Biotechnological studies on seaweed liquid fertilizer and its application in agriculture productivity (2010-2014), By Debabrata Mohanty; Ph.D. degree Awarded on 17th July 2015.
26. Study of stress tolerant cyanobacteria colonizing stone monuments and characterization of their antioxidant defense system (2010-2014), By Nitin Keshari; Ph.D. degree Awarded on 25th August 2015.
27. Cyanobacterial diversity in biological soil crusts and characterization of their adaptation to water stress (2010-2014), By Dhanesh Kumar; Ph.D. degree Awarded on 25th August 2015.

XVI. Supervision of Awarded M.Phil. thesis:

(Supervised M.Phil dissertation of 14 students at Utkal University, Bhubaneswar from 1988 to 2008 and were awarded M.Phil. degree by Utkal University).

- i. Studies on the effect of fertilizer factory effluent on the growth of algae, 1988 by Praksah Kumar Tripathy.
- ii. Ultraviolet inactivation and photoreactivation studies in two species of the cyanobacterium *Anabaena* spp., 1989, by Jeetendra Nath Patnaik.
- iii. Ecophysiological studies on the planktonic cyanobacterium *Microcystis aeruginosa* KutzemebElenkin of Bindusagar tank, 1990 By Nibedita Swain.
- iv. Heterotrophic potentiality of several filamentous cyanobacteria, 1991 by Durga Prananna Satpathy.
- v. Toxicity of mercuric chloride and Nickel sulphate on the rice field cyanobacterium *Nostoclinckia* . 1993, by Rtna Chaudhury.
- vi. Effect of different neem products on growth and nitrogen fixation of *Anabaena variabilis* 1994 by Amarendra Mishra.
- vii. Response of several nitrogen fixing cyanobacteria to NaCl stress, 1995, by Hirnmayee Padhi.
- viii. Comparative tolerance of cyanobacteria from different habitats to UV-B irradiation. 1999. by Nibedita Chand.
- ix. Tolerance of cyanobacteria to flyash from NTPC Kanhia, Talcher, 2000 by Pabitra Mohan Mohapatra.
- x. Development of cheap formulated medium and suitable carrier for BGA ,2001 by Arpita Dash.
- xi. Response of cyanobacteria from different habitats to salinity, Ind. J. Microbiol., 2002 by Smar Ranjan Jena
- xii. Cyanobacteria diversity in biological soil crusts and Utkal University campus, Bhubaneswar, 2003, by Johnnita Tirkey.
- xiii. Cyanobacteria in the crust on cave walls and soil surfaces and their adaptation to light and darkness, 2005 by Lakshmi Kumari Samad.
- xiv. Algal diversity of Ansupa lake, Odisha, 2008 by Chandashree Behera.

XVIII. Participation in National and international Conferences/Seminars/Symposia:

(A) International conferences in foreign countries (2016-1993):

1. Invited lecturer in the 20th International Symposium on Cyanophyte research at Innsbruck, Austria, August 28 to September 2, 2016.
2. Invited lecturer in the 15th International Symposium on Photosynthetic Prokaryotes at Tuebingen, **Germany**, August 1 to 6, 2015
3. Invited speech in the International conference on Marine algal Biotechnology at the World Expo Centre, Dalian, **Peoples Republic of China** from 20 to 23, September 2012.
4. Lead lecture on “Cyanobacteriabiofertilizer for rice cultivation in India: method of production and popularization for entrepreneurship development” in the seminar on Cell and molecular Biology and Biotechnology, University of Rome, Tor Vergata, **Italy**, 15-17 June 2011.
5. Participated in the International conference on Taxonomy of Cyanophytes at the University of South Bohemia, **Czech Republic** from 16th to 20th August 2010.
6. Regional Conference on Environment and Biodiversity, SAARC-ECOS, Tribhuban University, Kathamandu, **Nepal**, 7 to 9 March 1994.
7. International conference on Plant Physiology, Kumamoto University, Kumamoto, **Japan**, March 28-31, 1992.
8. Twenty-eighth NIBB conference on Dynamics of thylakoid membraner assembly, Okazaki, **Japan**, February 26-29, 1992.
9. International Botanical conference, Dhaka University, Dhaka, **Bangladesh**, January 10-12, 1991.
10. International conference on Ecology, Simane, For Richer ecological perspectives of brackish water zones, Matsue, **Japan**, September 1-3, 1990.
11. International Conference on Ecology, INTECOL, Yokohama National University, Yokohama, **Japan**, August 23-30, 1990.
12. Ninth International conference on Taxonomy of Cyanophytes, IAC, EAWAG, Dubendorf, **Switzerland**, August 10-17, 1993.

(B) National/International conferences/seminars in India and presentation of research papers/invited lectures/chairing sessions: (16+92 = 108 until retirement in 04/2019)

2019-2015:

1. **Invited lecture** in the National symposium on “Current Trends and future prospectives in Plant Science Research, Centenary celebration of Dept. of Botany, Banaras Hindu University, Varanasi, UP, 1-3 February 2019.
2. **Plenary lecture** in the International conference on Plant Sciences, Dept. Botany, Gauhati University, Assam, 4-6 February 2019.
3. **Invited lecture** under UGC-CAS programme of Botany on “Stress adaptation of sub-aerial cyanobacteria in biofilms” University of Calcutta, Ballyguange Circular Road, Kolkata,. 13 February 2019
4. **Plenary lecture** in the National seminar Prospectives of microalgae: past, present and future, Central Salt and Marine Chemicals Research Institute, Bhavnagar, Gujarat, 20th September 2019.

5.**Invited lecture** in the workshop on “Recent advances in Cryptogamic Botany” at University of Calcutta on 7th February 2018.

6.**Invited lecture** in the International workshop on Biodiversity and climate change at IIT, Kharagpur on 24 to 27 February 2018.

7.**Invited lecture** in the seminar on Climate change: impact on aquatic environment and fish health, 6th Sept. 2017, Central Institute for Freshwater Aquaculture, Bhubaneswar.

8.**Invited lecture** in the annual conference of Indian Botanical Society, 15&16 Sept. 2017, Punjabi University, Patiala, Punjab.

9.**Invited lecture** in the seminar of Hindi Bigyan Sahitya Parishad, Bhabha Atomic Research Centre held in Institute of Agriculture, Visva-Bharati, 17th and 18th Nov. 2017.

10.**Invited lecture** in the National seminar on Emerging Trends in Biotechnology and crop improvement at Rama Devi Womens’ University, Bhubaneswar, 21 & 22 November 2017.

11.**Plenary lecture** on “Use of region specific cyanobacteria and seaweed biomass resources as organic fertilizers for climate resilient agriculture in India and entrepreneurship of the technology in rural areas. In. National conference on marine bioresources of east coast of India and their bioprospecting” Feb. 10-12, F.M. University, 2016.

12.**Invited lecture** on “Need of an Algal culture collection for eastern India for use in Biotechnology research and Innovation”. National conference on Microbial resources and their utilization, Visva-Bharati, Satiniketan, 2016.

13.**Plenary lecture** on “Botany teaching – Past and present and need for a change in syllabus as per the present need”. National Seminar on Advancement in teaching Botany at UG and PG level, Bidhannagar Auto college, Kolkata, West Bengal, 2016.

14.**Chairman of the Inaugural session** on “International conference on The Green planet-past, present and future” and the session 5. Algal taxonomy and biodiversity, University of Calcutta, Dept. Botany, West Bengal, Dec. 21-13, 2016.

15.**Presidential lecture** on “My journey with Cyanobacteria..” in the National conference in life science research for human welfare and 41st Annual conference of Orissa Botanical Society, Sambalpur University, Odisha, 24-25 December 2016.

16.**Invited lecture on** “Cyanobacteria biofertilizer and seaweed liquid fertilizer technology for agriculture-a lab to land approach”. National seminar on “Biotechnology in Sustainable development”, 13 to 14 March 2015, University of Burdwan, West Bengal.

2014:

1. **Invited lecture** on” Freshwater and marine algal resources of eastern India and their sustainable utilization through Bioentrepreneurship”. National Seminar on Cryptogamic Botany 2014: Amazing cryptogams: learning to know. 18-19 December 2014, University of kalyani, West Bengal.

2. **Plenary lecture** in the Symposium on Biotechnology and Stress Biology of Algae and Cyanobacteria, CAS Botany, Banaras Hindu University, Varanasi, 24-26 February 2014.
3. **Invited lecture** on “ Biodeterioration of stone surfaces in Khandagiri cave complex and proposed remedial steps for their conservation. In. National seminar on The heritage site of Khandagiri-Udaigiri twin hills: History, Conservation and Development., November, Bhubaneswar, 2014.

2013:

4. **Plenary lecture** in the International conference on algal biorefinery: a potential source of food, feed, biochemicals, biofuel and biofertilizers, at IIT, Kharagpur; January 10-12, 2013.
5. **Plenary lecture** in the National seminar on Ecology, Environment and Development at Sambalpur University, Sambalpur on 25 to 27 January 2013.
6. **Invited lecture** in the National symposium on Applied Phycology at Punjabi University, Patiala, Punjab on 25th to 26th March 2013.
7. **Invited lecture** in the Brain storming session on Plant Taxonomy at Botanical Survey of India, Howrah on 25th April 2013.
8. **Invited lecture** in the International conference on Conserving Biodiversity for sustainable development at NIT, Rourkella, 16 to 18th August 2013,
9. **Invited lecture** in the DST sponsored national seminar on New Horizons in Biotechnology, Haldia Institute of Technology, Haldia, 30 & 31st August 2013.
10. **Invited lecture** in the national seminar on Cryptogams from curriculum to application. At Department of Botany, University of Calcutta, 25 & 26 November 2013.
11. **Invited lecture** in the workshop on Modern Biotechnology: applications of micro- and nano technology systems at NIT, Durgapur on 11th December 2013.

2012:

12. **Invited lecture** In new Biology section of the 99th Indian Science Congress, on theme “ Innovation in Biological Research for drug discovery and development” KIIT University, Bhubaneswar, 3 to 7 January 2012 and Chaired a session.
13. **Invited lecture** In National seminar on Ecotoxicology and Human health, Dept. Zoology and Botany, Berhampur University, Berhampur, Odisha, 8th and 9th January 2011.
14. **Lead lecture** In National conference on Recent Advances in Algal Biotechnology and M.O.P. Iyengar Quasquicentennial year celebration, CAS Botany, University of Madras, Chennai, 16th and 17th February 2012 and Chaired a session.
15. **Lead lecture** In National seminar on Safe food for all on the occasion of Gurudev's 150th year Birth anniversary, Feb. 21-23, ASEPAN, Institute of Agriculture, Visva-Bharati, Santiniketan.

16. **Invited lecture** in the Golden Jubilee seminar on "Advances in Agricultural Research towards food security and environmental sustenance" 1-3 September 2012, PalliSiksha Bhavana, Visva-Bharati.
17. **Plenary lecture** in the session Biodeterioration and Biodegradation in the International conference on Microbiology "Microbial world- recent innovations and future trends" at KIIT University, Bhubaneswar from 22nd to 25th November 2012.
18. **Invited lecture** in the National seminar on Cryptogams- The key contributors to ecosystem. 7th December 2012 at Dept. Botany, University of Calcutta, Kolkata

2011:

19. **Lead Lecture** in the International conference on Plant Science in the post Genomic era from February 17 to 19, 2011 organized by the School of Life Sciences, Sambalpur University, Orissa.
20. **Key note lecture** -Krishnamurthy Endowment Lecture on "The Journey with phycology, not the arrival matters" in the National conference on Algae and Algal products, Satyabama University, Chennai, 22 to 24 September 2011 and Chaired a session.
21. **Lead lecture** In National seminar and workshop on Present scenario and future prospects of Cryptogamic Botany and 8th P. Chatterjee memorial lecture, Department of Botany, University of Calcutta, Kolkata, 9 to 11 November 2011 and Chaired a session.
22. **Invited lecture** In National symposium on Plant diversity and resources: evolution, analyses, stress and Challenges, In commemoration of PLATINUM Jubilee Celebration of the Botanical Society of Bengal and Birth Centenary celebration of Prof. A.K. Ghosh, Dept. Botany, University of Calcutta, Kolkata, December 20-22, 2011.

2010:

23. **Special lecture** in the International conference on Energy, Environment and Development: from Stockholm to Copenhagen and Beyond, 10 to 12 December 2010 at Sambalpur University, Orissa.

2009:

24. **Special lecture** in the International symposium on Algal Biomass and their utilization, Krishnamurthy Institute of Algology, Chennai, 27th to 30th July 2009.
25. **Lecture** in IXth National Symposium on soil biology and ecology, 21 to 23 November 2009, Institute of Agriculture, Visva-Bharati, and Chaired a session.
26. **Invited lecture** in the Workshop on Cryptogam classroom teaching to field application, Department of Botany, University of Calcutta, Kolkata, 11th December 2009.

2008:

27. **Invited lecture** in the National conference on “Current trends in algal biodiversity and biotechnology” at CAS Boatny, University of Madras on 7th and 8th February 2008 and Chaired a session.
28. **Invited lecture** in the IIT-Chennai & DAAD, Germany 50th year of cooperation cooperation workshop on sustainability at IIT, Chennai, 8-9 Sept. 2008.
29. **Invited lecture** in the Indo-Belgium workshop on Biodeterioration, organised by Archaeological Survey of India at Hotel Trident, Chennai, 18-19 September 2008.

2007:

30. **Invited lecture** in Workshop on freshwater algae, sponsored by AICOPTAX, Min. Env. Forests, Govt. of India, CAS Botany, University of Madras, Chennai, February 22 to 28, 2007.
31. **Invited lecture** in the National symposium on Vistas in Algal research. 22nd and 23rd Sept. 2007., Krishnamurthy Institute of Algology, Chennai and Chairing a session.
32. **Special lecture** in the workshop for interface of research of AICOPTAX-algae project, Dept. Botany, Lucknow University, 27 and 28 September 2007.
33. **Invited lecture** in the national symposium on Recent Advances in Phycology: from molecule to ecosystem. Dept. Botany, Punjab University, Chandigarh, Nov. 14-16, 2007 and Chaired a session.
34. **Invited lecture** in 48th Annual conference of Association of Microbiologists of India: Microbes-Biofactories of the future. IIT, Chennai, 18 to 21 December 2007; **Convener of the session: Bifilms and Biodeterioration** on 20th December 2007.

2006:

35. **Probir Chatterjee memorial lecture** at the Department of Botany, University of Calcutta, West Bengal on 2nd December, 2005.
36. **Oral presentation** in International conference on Phycology: Algae in Biotechnology and Environment, University of Delhi, February 14-15, 2006, Oral presentation.
37. **Invited lecture** in the state level conference on “Organic agriculture- farm to market” at Orissa University of Agriculture and Technology, 19th March 2006.

2005:

38. **Invited lecture** and Chaired a session in the national workshop on upgradation of production of bioinputs in organic farming, Regional Centre for Organic Farming, Nagpur, March 3 - 4, 2005.
39. **Oral presentation** and Chaired a session in National symposium on marine plants and their utilization, Suganthidevasan Marine Research Institute, Tuticorin, Tamilnadu, June 10-12, 2005, Oral presentation and Chaired a session in the Annual

conference of Indian Botanical Society conference at BSI, Dehradun from 24 - 26 October 2005.

2004:

40. **Invited lecture** in National seminar on Microalgal Biotechnology at Bharatidasan University, Tiruchhirapalli from 11 to 13 March 2004 Invited lecture in National colloquium on caves, Jagdalpur, Chattisgarh, May 22-23, 2004.
41. **Invited lecture** in the National symposium on Algal biodiversity at the Centre for Advanced Studies in Botany, University of Madras, Chennai. August 8- 10 2004.
42. **Invited lecture** in the Interactive workshop on biofertilizers at the Centre for conservation and utilization of blue green algae, IARI, New Delhi, November 5 -6, 2004.
43. **Plenary lecture** in the International symposium on Biospeleology at Pt. Ravi Shankar Shukla University, Raipur, November 25 to 29, 2004.
44. **Oral presentation** in International conference of Lake-2004, Bhubaneswar, December 9 to 13, 2004.

2003:

45. **Poster presentation** in 44th Annual conference of Association of Microbiologists of India at Karnatak Agriculture University, Dharwad from 12 to 14 November 2003.

2002:

46. **Oral presentation** in International workshop on Restoration of Chilika lagoon, Chilika Development Authority in collaboration with Wetland International, Asia, January 18-20, 2002.
47. **Oral presentation** in National seminar on plant resource utilisation for backward area development, December 28-29, 2002, Regional Research Laboratory, Bhubaneswar.

2001:

48. **Invited lecture** in Second North Eastern Regional conference on Biofertilizers, Assam Agriculture University, Jorhat, Assam, January 22-24, 2001, Invited lecture.
49. **Oral presentation** in National conference on Plant Biotechnology, Kakatiya University, Warangal, March 2-3, 2001.
50. **Invited lecture** in National seminar on present status of Microbiology and challenges for sustainable development, Dept. Microbiology & Biotechnology, Sagar University, Sagar, MP, March 5-7, 2001, Invited lecture.
51. **Oral presentation** in National workshop on recent developments in Biofertilizers for rice based cropping system, Tamilnadu Agriculture University, Coimbatore, Tamilnadu, August 16-18, 2001.

2000:

52. **Oral presentation** in 40th Annual conference of Association of Microbiologists of India and symposium on Microbiology in the Third Millennium at CIFA, Kausalyaganga from January 22-24, 2000, also organized the national symposium as Joint Organising Secretary.
53. **Oral presentation** in National symposium on Phycology in the New Millennium, CAS Botany, University of Madras, Chennai, March 1-3, 2000.
54. **Oral presentation** in National symposium on seaweeds of India: Biodiversity and Biotechnology, Central Salt and Marine Chemicals Research Institute, Bhavnagar, Gujarat, September 12-14, 2000.
55. **Poster presentation** in 41st Annual conference of Association of Microbiologists of India and Symposium on Microbiotech 2000, Birla Institute of Scientific Research, Jaipur, Rajasthan, November 25-27, 2000, Poster presentation.
56. **Invited lecture** in National seminar on biodeterioration of cultural property, sponsored by National museum and INTACH, New Delhi, April 19-20, 2000.

1999:

57. **Oral presentation** in National symposium on plant Biotechnology, Kakatiya University, Waarangal, June 29-30, 1999.

1998:

58. **Oral presentation** in National conference on modern trends in Plant sciences, Kakatiya University, Waarangal, March 16-17, 1998.
59. **Oral presentation** in International conference on radiation damage: DNA damage, repair and carcinogenesis, Dept. Biochemistry, North Eastern Hill University, Shillong, April 7-10, 1998.
60. **Oral presentation** in International symposium on environmental management in mountainous regions, Gurukul Kangadi University, Haridwar and Govt. College, Rishikesh, October 4-7, 1998.
61. **Oral presentation** in Annual Conference of Indian Botanical Society, Department of Botany, Ujjain University, Ujjain, 24-26 October 1998.
62. **Invited lecture** in the satellite symposium on Microbiology in Archaeology on 7th December 1998 at Belur, Karnatak. In the Dimond Jublee symposia and 39th Annual conference of Association of Microbiologists of India, Mangalore, December 5-7, 1998.

1997:

63. **Oral presentation** in Symposium on algal biology and Biotechnology, CAS Botany, Banaras Hindu University, Varanasi, February 6-8, 1997.
64. **Oral presentation** in National symposium on recent trends in algal research, Dept. Botany, Andhra University, Visakhapatnam, Andhra Pradesh, March 6-8, 1997.
65. **Oral presentation** in National conference on plant biotechnology, Rohelkhad University, Bareilly, UP, December 23-24, 1997.

1996:

66. **Oral presentation** in International symposium on Recent advances in Phycology (Prof. T.V.Desikachary 75th birthday celebration), CAS Botany, University of Madras, July 11-15, 1994.
67. **Oral presentation** in International conference on sustainable agriculture and environment, Haryana Agriculture University & Max Muller Bhawan, Hissar, January 11-13, 1995.
68. **Oral presentation** in International conference on microbial exploitation, CAS Botany, Banaras Hindu University, Varanasi, March 13-15, 1996.
69. **Oral presentation** in National seminar on progress in Ecological research, Sagar University, Sagar, MP, March 16-17, 1996.
70. **Oral presentation** in International symposium on cyanobacterial biotechnology, National facility of Marine cyanobacteria, Bharatidasan University, Tiruchirappalli, Tamilnadu, September 18-22, 1996.

1995:

71. **Oral presentation** in International conference on sustainable agriculture and environment, Haryana Agriculture University & Max Muller Bhawan, Hissar, January 11-13, 1995.

1994:

72. **Oral presentation** in International symposium on Recent advances in Phycology (Prof. T.V.Desikachary 75th birthday celebration), CAS Botany, University of Madras, July 11-15, 1994.

1993:

73. **Oral presentation** in Indo-German conference on Impact of modern agriculture on environment, CCS Haryana Agriculture University, Hissar, December 1-3, 1993.

1992:

74. **Oral presentation** in National symposium on management of microbes in service of mankind, Allahabad University, November 19-21, 1992.

1991:

75. **Oral presentation** in Indian Science Congress, Devi Ahalya University, Indore, 3-7 January 1991.

1990:

76. **Oral presentation** in National symposium on cyanobacterial nitrogen fixation, Indian Agricultural Research Institute, New Delhi, January 29-31, 1990.
77. **Oral presentation** in Seminar on wetland ecology and management, Koeladeo National Park, Bharatpur, Rajasthan, February 23-25, 1990.

1989:

78. **Oral presentation** in Indian Science Congress, Madurai Kamraj University, Madurai, 3-7 January 1989.
79. **Oral presentation** in National seminar on Biofertilizer technology transfer, Marathawada University, Aurangabad, 14-16 October, 1989 .
80. **Oral presentation** in National seminar on Forty years of Freshwater aquaculture in India, Central Institute for Freshwater Aquaculture, Kausalyaganga, November 7 - 9, 1989.
81. **Oral presentation** in International symposium and workshop on biological nitrogen fixation associated with rice production, Central Rice Research Institute, Cuttack, December 28, 1988 to January 1, 1989.

1988:

82. **Oral presentation** in Indian Science Congress, Puna University, Puna, 3-7 January 1988, Oral presentation.
83. **Oral presentation** in Symposium on Progress in Green Vegetation Research and other photosynthetic microorganisms, C.S.Azad Agriculture University, Kanpur, October 29-30, 1988.

1987:

84. **Oral presentation** in Indian Science Congress, Bangalore University, Bangalore, 3-7 January 1987.
85. **Oral presentation** in International symposium on Phycology, MOP Iyengar birth Centenary celebration, Centre for advanced studies in Botany, University of Madras, January 8-13, 1987.
86. **Oral presentation** in International Phycotalk symposium, Centre for Advanced studies in Botany, Banaras Hindu University, Varanasi, December 18-21, 1987.

1986:

87. **Oral presentation** in Indian Science Congress, University of Delhi, Delhi, 3-7 January 1986.
88. **Oral presentation** in National seminar on water pollution- a potential threat to mankind. Dept. Zoology, Sagar University, Sagar, MP, 21-23 February 1986.

1984:

89. **Oral presentation** in National workshop on systems ecology, ecodevelopment and planning, Sagar University, Sagar, Madhya Pradesh, 7 to 17 June 1984.

1983:

90. **Oral presentation** in Sixth All India Botanical conference, Indian Botanical Society, Bhubaneswar, December 28-30, 1983.

1980:

91. **Oral presentation** in Indian Science Congress, Jadavpur University, Calcutta, 3-7 January 1980, Oral presentation

1978:

92. **Oral presentation** in All India symposium on blue green algae and their viruses, Madurai Kamraj University, Madurai, October 26-28, 1978.

XIX. Organising Seminar/ Conference and Rural development Programmes:

1. Joint Organising Secretary of the 40th Annual conference of Association of Microbiologists of India and **symposium on Microbiology in the Third Millennium** at CIFA, Kausalyaganga, Bhubaneswar, January 22-24, 2000.
2. Organising Secretary of the **National seminar on Freshwater algae of India and their Utilization** at Utkal University, Bhubaneswar, 18th to 19th march 2006, sponsored by MOEF, Govt. of India, New Delhi.
3. Organising Secretary of the **National seminar of Diversity and Biotechnology of Cryptogams**, December 3 to 5, 2010 in collaboration with Department of Botany, Visva-Bharati- sponsored by CSIR, New Delhi.
4. Regional **wokshop-cum training programme to farmers and entrepreneurs on organic farming** at Village Maniakati, Dist. Ganjam, Orissa, October 27 and 28, 2010- Organised as Convener.
5. Organised as Convener: **National workshop-cum training to farmers and entrepreneurs on Seaweed liquid fertilizer for pulses and vegetable crops** in collaboration with soil testing lab of Palli Siksha Bhavana at Visva-Bharati from 27 to 28 February 2011 & on organic farming at Village Maniakati, Dist. Ganjam, Orissa.
6. Organized the **National seminar on “Science and Nature: Tagore’s vision and its relevance”** on behalf of the Institute of Science, Visva-Bharati on 12th and 13th February 2011 on the occasion of celebration of 150th year birth anniversary of Gurudev Rabindranath Tagore, the founder of Visva-Bharati.
7. Organized a **seminar cum workshop on “Seaweed liquid fertilizer foe entrepreneurship development”** for farmers, SHGs, NGOs, agriculture officials and students at KVK, Krishi Siksha Bhavana, Sriniketan, Visva-Bharati on 19th and 20th November 2012 and delivered the theme lecture along with training.
8. Organised the **National Conference on Algology and Algal Biotechnology, at Visva-Bharati** sponsored by DBT, DST and CSIR, Govt. of India from 15th to 17th November 2013 with more than 250 participants from across India.