

Laxmi Shankar Rath

Address for Correspondence: Associate Professor & Head, Department of Allied & Applied Science, University of Patanjali, Haridwar-249405, Uttarakhand, India

Permanent Address: Rugudipada, Balangir – 767001, Odisha, India

Phone: 91-6652-234561 **Mobile:** 8763190543/ 8917206348

Emails: <lsrath@rediffmail.com><lsrath@yahoo.co.in><laxmi.shankar@uop.edu.in>

Education :

Ph. D.	2006	Science , Sambalpur University (Thesis title: A theoretical study of structure, organization & functions of proteins associated with photosystem II)
M.Sc.	1983	Chemistry , Sambalpur University (First Class)
B.Sc.	1981	Chemistry, Physics & Mathematics , Sambalpur University (First Class Honors with Distinction)

Research Experience :

Approximately seven years of research experience in the area of Biophysical Chemistry. Also worked as a Research Scientist in the Bioinformatics Research Center of IIIT-Hyderabad. Independently did some developmental research in the western part of Orissa to determine the causes of poverty and its eradication.

Teaching Experience :

More than twenty years of teaching experience to graduate and postgraduate students in the Rajendra (Autonomous) College, Balangir, Orissa; Gangadhar Meher (Autonomous) College, Sambalpur, Orissa; MSIT students of IIIT-Hyderabad, Andhra Pradesh, and BTech students of Chemical Engineering of Jagannath Institute for Technology and Management, Paralakhemundi, Gajapati district, Orissa, India, B.Tech. students of PKA College of Engineering, Bargarh, and GIET-Bhubaneswar, Odisha, India, UG students of Chemistry in RK Samantaray Institute of Science and Technology and UG students of the University of Patanjali, Haridwar.

Research Interests :

Science and Technology Policy, Sustainable Development, Environment & Pollution Control, Biochemistry, etc.

Research awards :

Awarded Prof. R. K. Nanda Award for best researcher in Chemistry in the year 1997 by the Orissa Chemical Society.

Other University, Departmental positions and invited responsibilities:

1. Member Board of studies, M.Sc. and B.Sc. in Bioinformatics in the University of Burdwan, West Bengal
2. Consultant and Head of Bioinformatics Division of the Wiil Academy, Kolkata.
3. Organized Orissa Chemical Society's regional conference in Bolangir, Orissa, India.
4. Resource person in Bioinformatics for the PG Diploma studies in the Gangadhar Meher (Autonomous) College, Sambalpur, Orissa, India.
5. Expert in PGT selection in Chemistry by Navodaya Vidyalaya Samiti.
6. Worked as judge in several science exhibitions and projects in schools and college level
7. Nominated to the District Rural Development Agency, Bolangir as its governing body member and scientific policy expert by the district administration

8. Worked as an advisor on food security studies conducted by CENDERET wing of the Xavier Institute of Management, Bhubaneswar
9. Studied on the problems of poverty and political participation of rural poor in some randomly selected villages of Bargarh, Bolangir and Kalahandi districts sponsored by DFID, United Kingdom.
10. Worked as an Administrator in BPS a senior secondary school for two academic years
11. Presently working as an Associate Professor & Assistant Dean (Academic) in the University of Patanjali and implemented the CBCS system in the curricula as per New Education Policy, 2020 and developed syllabi for MSc Biochemistry and BSc Microbiology.

Research Publications & Papers presented at various Scientific and Technical Conferences, Seminars and Invited Talks:

(A) Published papers:

1. Rath L S , Joshi P N, Raval M K & Biswal U C (1997) "Prediction of structure and organization of chlorophyll a/b binding polypeptides in PS I and II", Indian J Biochem Biophys, 34,341-346.
2. Raval M K & Rath L S (1998) "Prediction of structure of antenna proteins of photosystem II", Indian J Biochem Biophys, 35, 91-96.
3. Rath L S (1999) "Suggestion to alleviate poverty in Bolangir district", Kurukshetra, 47(9), 43-47.
4. Rath L S & Raval M K (2001) "Modeling of a binuclear metal binding site in the photosynthetic reaction center II", Indian J Biochem Biophys, 38, 75-77.
5. Rath L S & Raval M K (2001) "A model for the organization of the chlorophyll-protein complex of photosystem II and its photochemical efficiency and excitation migration", Indian J Biochem Biophys, 38, 153-158.
6. Rath L S & Raval M K (2004) "Comparative modeling of tetramanganese cluster of *Chateosporadium globosum*", Indian J Biochem Biophys, 41, 258-262.
7. Rath L S (2006) "Ayurinformatics- application of Bioinformatics in the Ayurvedic system of medicine", IEEE Computer Society Journal, ICIT '06 (Saraju P. Mohanty, Anirudha Sahoo (Eds.)), pp 21-25.
8. Rath L S (2021) "Introduction of YOGA in the curriculum of Higher Education in India", International Journal of Physical Education Sports Management and Yogic Sciences, 11(4), 14-17.
9. Rath L S (2021), "Integrative Medicine- A New and Emerging Discipline in the Treatment of Chronic Diseases", Indian Journal of Integrative Medicine, Sep-Oct 2021, 44-46.

(B) Invited talks:

1. Rath L S & Raval M K (1993), "A computer program for peptide design: Molekuls", 7th Annual Conference of Orissa Chemical Society.
2. Rath L S & Raval M K (1994), "Structural characteristics of transit peptides of chloroplastic proteins", 8th Annual Conference of Orissa Chemical Society.
3. Rath L S & Raval M K (1996), "Conformation and organization of chlorophyll molecule in the light harvesting proteins", 9th Annual Conference of Orissa Chemical Society.
4. Rath L S, Joshi P N, Raval M K & Biswal U C (1997) "Structure and organization of chlorophyll a/b binding proteins binding proteins in thylakoid membrane" 10th Annual Conference of Orissa Chemical Society.
5. Rath L S & Raval M K (1997), "Prediction of structure of antenna proteins in photosystem II" 11th Annual Conference of Orissa Chemical Society.
6. Rath L S & Raval M K (1998), "A theoretical model of antenna proteins of photosystem II" National Symposium on Radiation and Molecular Biophysics held at Bhabha Atomic Research Centre and Tata Institute of Fundamental Research, Bombay.
7. Rath L S, Dash P K & Raval M K (1999) "Theoretical modeling of dimeric photosystem II in thylakoid" National Symposium on Radiation and Photochemistry held in Sambalpur University, Orissa.
8. Rath L S, Dash P K, Raval M K, Ramakrishnan C & Balaram P (1999), "A Computer modeling of metal binding site in D1 protein of the photosynthetic reaction center II", 13th International Biophysics Congress held at New Delhi, and was published in J Biosci, 14, 167.
9. Rath L S & Raval M K (1999) "Modeling of binuclear meta binding site in the C-terminal luminal loop of the D1 protein of photosynthetic reaction center II" 13th International Biophysics Congress Satellite Symposium in Structural Biology and Molecular Recognition, held at Saha Institute of Nuclear Physics, Calcutta.
10. Rath L S & Raval M K (2000) "Prediction of transmembrane alpha-helices in D1/D2 heterodimer of photosystem II" 14th Annual Conference of Orissa Chemical Society.

11. Rath L S & Raval M K (2001) "Exciton migration and photochemical efficiency in a dimeric PS II model" National Symposium in Biophysics held at Indian Institute of Chemical Biology Calcutta.
12. Rath L S, Dash P K, Raval M K, Ramakrishnan C & Balaram P (2002) "Homology modeling of manganese and calcium binding sites in D1 protein of photosynthetic reaction centre II" in the Discussion Meeting on Structural Biology and Symposium on Biophysics, January,21-23,2002 held at the Department of Crystallography & Biophysics of the University of Madras, India.
13. Rath L S & Raval M K (2002) "Mechanism of photosynthetic oxidation of water : A theoretical approach" in the Discussion Meeting on Structural Biology and Symposium on Biophysics, January,21-23,2002 held at the Department of Crystallography & Biophysics of the University of Madras, India.
14. Rath L S (2003) "Modeling the structure of human 15-lipoxygenase and docking studies", presented in February,20-25 in the Indian Biophysical Society's symposium at Indian Institute of Technology, Roorkee.
15. Rath L S, Ramadevi S & Tajne S (2003) "Modeling of tetramanganese cluster of D1 protein of photosystem II" presented in February, 20-25 in the Indian Biophysical Society's symposium at Indian Institute of Technology, Roorkee, India.
16. Rath L S (2005) "Application of Bioinformatics in the Ayurvedic system of medicine" presented in the 2nd International Conference of ISAH and international seminar on chronic diseases and its management by complementary and alternative medicine held in the Institute of Medical Sciences, Banares Hindu University, Varanasi, India, jointly organized by the Institute of Medical Sciences, Banares Hindu University, India and the School of Medicine, University of Connecticut, USA.
17. Rath L S (2006) "Living in harmony with nature can avoid many disasters" presented in the National Conference on the Technology for Disaster Mitigation, held on 27 & 28 January, 2006 at Jagannath Institute for Technology and Management, Paralakhemundi, Orissa, India.
18. Rath L S (2009) "New methodologies in science teaching in schools and colleges" presented in the National conference on recent trends in Chemical Sciences & Technology held on 19 & 20 December, 2009 at NIT-Rourkela, India.
19. Rath L S (2010) "Towards developing a sustainable environmental policy in India" presented in the National seminar on industrialization induced environmental crisis and its cure held on 28 & 29 December 2010 at Berhampur University, India.
20. Rath L S (2021) "Intellectual Property Rights: Need, prospects, awareness and challenges in herbal medicine sector" presented in the national seminar held in 14 March 2021 at PRI, Haridwar, India.
21. Rath L S (2022) "Light Harvesting Materials for Sustainable Energy" in the workshop for Faculty Development Program held during 3-4 March 2022 at National Institute of Technology, Warangal, India.

Subjects taught to the Students:

MSIT (Master of Science in Information Technology) in IIIT-Hyderabad: Comparative modeling of proteins.

PGDBI (Postgraduate Diploma in Bioinformatics) in Gangadhar Meher (Autonomous) College, Sambalpur, Orissa, India: Protein and its structure, Comparative modeling of proteins

M.Sc. in Chemistry in Rajendra College, Bolangir, Orissa, India: Atomic Structure, Quantum Chemistry, Proteins and its structure

B.Sc. Honours in Chemistry in Rajendra College: General Chemistry, Organic Chemistry, and Biochemistry & Environmental Pollution

B.Tech. (Chemical Engineering) in Jagannath Institute of Technology and Management, Paralakhemundi, Gajapati District, Orissa, India: Environmental Chemistry & Pollution Control, Applied Biochemistry, Biotechnology, etc

B.Tech. (all disciplines) in PKA College of Engineering, Bargarh, Odisha, India: Environmental Engineering & General Chemistry

BSc (Honours) (Biological Science) & BSc (Yoga Science) in the University of Patanjali, Haridwar, India: Environmental Science, Biodiversity, Chemistry, Biochemistry and Biophysics.

Faculty Development Programs (FDP):

1. Participated in the FDP on Holistic Development and Outcome based Innovative Teaching" held from 14 to 20 February 2022 by Om Sterling Global University, Hisar, Haryana, India.
2. Participated in FDP on Yoga Science held from 19 June to 02 July 2022 organized by the University of Patanjali, Haridwar, India

Contributions made for the popularization of Science & Technology:

1. Aired a popular series of talks in “Yuvavani” of AIR, Bolangir in Information Technology and Biotechnology.
2. Wrote several articles in local language in local newspapers for the popularization of science with special emphasis on environment, pollution, Biotechnology, etc.

Membership of professional societies:

Life Member, Orissa Chemical Society

Member, Indian Biophysical Society

References :

1. Dr. M. K. Raval,
Professor (Retd)
Department of Chemistry,
G M College (Autonomous)
Sambalpur, Orissa, INDIA.
Res: Front of Mission Field
Balangir-767001, Odisha.
Email: mraval@yahoo.com
Mobile: 9437110137

2. Professor B.C.Tripathy,
Professor,
School of Life Science,
Jawaharlal Nehru University,
New Delhi, India
Email:
bctripathy@mail.jnu.ac.in
Mobile: 9818104924

3. Dr Abhimnyu Mishra
Principal (Retd)
Rajendra College (Auto)
Res:-Behind Civil Court
Balangir-767001
Odisha, india
Email:
abhimanyubgr@rediffmail.com
Mobile:9437528155