



Sakti Kanta Rath

Designation:Associate Professor

Qualification:M.Sc, PhD

Date of Birth: 12.06.1981

Date of Joining:20.06.2018

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Area of Interest

Biotechnology, Ethnopharmacology, Phytochemistry

Courses taught

P.G. Life Sciences, M.Phil. Life Sciences, P.G. Industrial Microbiology, Ph.D. Life Sciences

Career

Associate Professor (2018-present):Rama Devi Women's University, Bhubaneswar

Assistant Professor in Biotechnology (2010-2018): Ravenshaw University, Cuttack

Assistant Professor in Biotechnology (2005-2010): North Orissa University, Baripada

Teaching Experience

18 years

Research Experience

19 years

Administrative/Executive Experience(only prominent/statutory roles including membership of academic council/syndicate/board of studies. Avoid mere membership in committees)

HOD, Dept. of Life Sciences, Rama Devi Women's University (September 2022- Present)
Coordinator, RUSA, Rama Devi Women's University (April 2019-Present)
OIC, Stock and Store Rama Devi Women's University (September 2022-present)

Awards & Honors(including travel support award)

Research Guidance

- ✓ PhD thesis supervised : 03 (Three)
- ✓ M Tech/M.Phil thesis supervised : 08 (Eight)
- ✓ M.Sc thesis supervised : 52(Fifty Two)

Research Grants(All research grants including seed funds)

S. No	Title of the project	Funding Agency	Amount	Sanction year & duration
1	Evaluation of Antimicrobial and Antidiabetic activities of selected parasitic plants of Odisha	Science and Technology Dept., Govt. of Odisha	6.76 Lakhs	2021 (Three Years)

Publications

Patents(Entire list of patents/copyrights etc.)

Patent no.	Patent type	Patent title	Year of filing	Name of Inventor(s)	Status
202031056520	Indian Patent	A field Compatible Biofungal composition for degradation of organophosphate insecticides.	2021	D. Mohapatra, S.K.Rath and P.K.Mohaptra	Filed

Journal publications (Give the entire list of publication in Scopus/SCI-WoS/UGC care only)

1. D. Mohapatra, S. K. Rath & P. K. Mohapatra (2021) Soil Fungi for Bioremediation of Pesticide Toxicants: A Perspective. *Geomicrobiology Journal*. Vol 39 (3-5), 352-372. Taylor and Francis. ISSN- 1521-0529 <https://doi.org/10.1080/01490451.2021.2019855>
2. Shahani Begum, Sakti Kanta Rath & Chandni Charan Rath (2021) Applications of Microbial Communities for the Remediation of Industrial and Mining Toxic Metal Waste: A Review. *Geomicrobiology Journal*. Vol 39 (3-5), 282-293. Taylor and Francis. ISSN- 1521-0529 <https://doi.org/10.1080/01490451.2021.1991054>
3. D. Mohapatra, S.K.Rath and P.K.Mohapatra (2021) Evaluating a preparation of malathion tolerant *Aspergillus niger* MRU01 for accelerated removal of four organophosphorus insecticides. *J. of Chemical technology and Biotechnology*. 96 (6). 1603-1610. IF- 2.587. ISSN: 0268-2575 <https://doi.org/10.1002/jctb.6679>
4. B. Baliyarsingh, A. Mishra and S.K.Rath (2020) Evaluation of insecticidal and repellency activity of leaf extracts of *Andrographis paniculata* against *Tribolium castaneum* (red flour beetle). *Int. Journal of Tropical Insect Science*. 41 (1): 765-773. IF.1.07 ISSN: 1742-7592 <https://doi.org/10.1007/s42690-020-00267-9>
5. S.K.Naik, S.K.Behera, S.K.Rath and J.K.Patro (2020) A comprehensive scientific overview of *Blepharispermum subsessile* DC. (Asteraceae), a conservation concern medicinal plant with promising pharmaceutical potential. *Indian Journal of Traditional Knowledge*. 19 (1). 208-217. **IF-0.731** ISSN: 0975-1068. DOI: [10.56042/ijtk.v19i1.30869](https://doi.org/10.56042/ijtk.v19i1.30869)
6. D. Pani and S. K.Rath. (2020) Lectins: Classification, Properties and Biotechnological Aspects *Sabujima*, 28: 30-34
7. B. Baliyarsingh, A.K. Mishra and S.K.Rath (2020) Preliminary analysis of Insecticidal and antimicrobial potential of *Andrographis paniculata*. *Journal of Advances Microbiology*. 4 (1), 37-44.
8. A.K.Nayak, S.K.Rath, U.Subudhi (2019) Preparation of stable branched DNA Nanistructures: Process of Cooperative Self Assembly. *The Journal of Physical Chemistry B* 123:3591-3597. IF-2.991 1520-6106 doi.org/10.1021/acs.jpcc.9b00353
9. R. Supriya Devi, Sujata R Swain, S.K.Rath, S. Kumar and N.K.Dhal (2019) *Coelogyne fimbriata* Lindl.var *burmanensis* Kumar: a new orchid species from Manipur, India. *Biodiversity* 6: 601-605 ISSN 2490-0362.

10. Sanjeet Kumar, Padma Mahanti, Nihar Ranjan Singh, **Sakti Kanta Rath**, Padan Kumar Jena, Jayanta Kumar Patra. (2017) Antioxidant activity, antibacterial potential and characterization of active fraction of *Dioscorea pentaphylla* L. tuber extract collected from Similipal Biosphere Reserve, Odisha, India. Brazilian Journal of Pharmaceutical Sciences 53 (4):e17006.ISSN- **2175-9790** doi.org/10.1590/s2175-97902017000417006
11. Kumar S, Mahanti P, Rath SK and Patra JK (2017) Qualitative Phytochemical Analysis and Antibacterial Activity of *Dioscorea alata* L.: A Nutraceutical Tuber Crops of Rural Odisha. Journal of Alternative Medical Research. 3(1):122-126. ISSN No. 2470-1017.
12. B.Baliyarsingh and **S.K.Rath** (2018) Plant based natural pesticides. Sabujima 26:12-16. ISSN: 0972-8562.
13. B. Behera, P.Sinha, S. Gouda, **S.K.Rath**, D.P.Barik, P.K.Jena, P.C.Panda, S.K.Naik (2018) Invitro propagation by axillary shoot proliferation, assessment of antioxidant activity and genetic fidelity of micropropagated *Paederia foetida* L. J. of Applied Biology and Biotechnology. 6(2): 41-049 ISSN- 2455-7005 **DOI: 10.7324/JABB.2018.60207**
14. S.K.Rath (2017) Immunomodulatory activity of Medicinal Plants. Sabujima 25:27-32. ISSN:0972-8562
15. D.Mohapatra, S.K.Rath and P.K.Mohapatra.(2016) Biodegradation of insecticides and herbicides by *Aspergillus* species: A review. Plant Science Research. 38: 23-29.ISSN: 0972-8546.
16. P. Murmu, S.Kumar, J.K.Patra, N.R.Singh, S.K.Rath. (2016) Ethnobotanical, Nutritional, Phytochemicval and Antimicrobial studies of *Garcinia xanthochymus* Fruit extracts. British Biotechnology Journal. 13(2):1-11. ISSN:2231-2927. DOI: 10.9734/BBJ/2016/25244
17. D. Mohapatra, N.R.Singh and **S.K.Rath** (2015) Methods for Identification and conservation of Macrofungus: A probable global food. Int. J. of Biological Sciences and Eng. 6(11): 16-23. ISSN 1449-2288
18. D. Pani, **S.K.Rath**, D.Sahu and S.L.Sahu. (2015) Proton induced X-ray emission-based analysis of trace element composition of cotyledon derived in vitro callus culture of *Abrus precatorius* L.: a multimedical wild legume. Journal of Radioanalytical and Nuclear Chemistry.. ISSN 0236-5731. DOI 10.1007/s10967-015-4363-3
19. **S.K. Rath**, J.K. Patra, S. Gouda, S.K. Dutta and H.N. Thatoi (2014) Chemical profiling and evaluation of bioactivity of solvent extracts of *Pterospermum acerifolium* Linn: An ethnomedicinal plant of Similipal Biosphere Reserve. World J. of Pharmacy and pharmaceutical Sciences. 3 (3):1862-1874. ISSN 2278-4357.
20. **S.K.Rath**, J.K.Patra, S.Gouda, H.N.Thatoi and S.K.Dutta (2014) Evaluation of antioxidant potential, phytochemical analysis and chromaographic separation of bark extracts of *Diospyros melanoxylon* Roxb. Journal of Biologically Active Products from Nature. 4 (5 &

21. G. Mohanty, J. Mohanty, S.K.Garnayak, **S.K.Rath** and S.K.Dutta (2013) Use of comet assay in the study of DNA break in blood and gill cells of rohu (*Labeo rohita*) after an exposure to furadan, a carbamate pesticide. Research Journal of Biotechnology. 8(2), 83-89. **IF-0.143** ISSN (on-line): 2278-4535 DOI: [10.1007/s10646-010-0580-2](https://doi.org/10.1007/s10646-010-0580-2)
22. C.K.Chakroborty, S.Shradhanjali, **S.K.Rath**, J.K.Patra, H.N.Thatoi. (2011) Assessment of water quality of Budhabalanga river: A report on catalase activity. Environmental Pollution Control Journal. 14 (2). 69-71. ISSN-0972-1541.
23. **S.K.Rath**, J.K.Patra, N.Mohapatra, G.Mohanty, S.K.Dutta and H.N.Thatoi. "In vitro antibacterial and antioxidant studies of *Croton roxburghii* L., from Similipal Biosphere Reserve". Indian Journal of Microbiology. 51 (3), 363-368, 2011. ISSN-0973-7715. PMID 22754018. **IF-0.97** doi: [10.1007/s12088-011-0133-2](https://doi.org/10.1007/s12088-011-0133-2)
24. **S.K.Rath**, N.Mohapatra, D.Dubey, S.K.Panda, H.N.Thatoi and S.K.Dutta. "Antimicrobial activity of *Diospyros melanoxylon* bark from Similipal Biosphere Reserve, Orissa, India. African Journal of Biotechnology, Vol.8 (9), 1924-1928, 2009. ISSN- 1684-5315. **IF-0.5** doi.org/10.5897/AJB09.076
25. J.K.Patra, A.D.Mohapatra, **S.K.Rath**, N.K.Dhal and H.N.Thatoi. "Screening of antioxidant and antifilarial activity of leaf extracts of *Excoecaria agallocha* L." International Journal of Integrative Biology, Vol.7 (1), 9-15,2009. ISSN-0973-8363.
26. J.K.Patra, T.K.Panigrahi, **S.K.Rath**, N.K.Dhal and H.N.Thatoi. "Phytochemical screening and antimicrobial assessment of leaf extracts of *Excoecaria agallocha* L.: A mangal species of Bhitarkanika, Orissa, India". Advances in Natural and Applied Sciences, Vol. 3(2):241-246, 2009. ISSN- 1995-0748
25. H.N.Thatoi, S.K.Panda, **S.K.Rath** and S.K.Dutta. "Antimicrobial activity and ethnomedicinal uses of some medicinal plants from Similipal Biosphere Reserve, Orissa". Asian Journal of Plant Sciences, Vol.7 (3), 260-267, 2008. ISSN-1682-3974. [10.3923/ajps.2008.260.267](https://doi.org/10.3923/ajps.2008.260.267)
26. J.K.Patra, **S.K.Rath**, K.Jena, V.K.Rathod, H.N.Thatoi. "Evaluation of Antioxidant and Antimicrobial activity of Seaweed (*Sargassum* sp.) Extract: A case study on inhibition of Glutathione-S-Transferase activity". Turkish Journal of Biology, Vol.32, 119-125, 2008. ISSN-1300-0152. **IF-0.9**
27. T.K.Mohanta, J.K.Patra, **S.K.Rath**, D.K.Pal and H.N.Thatoi, "Evaluation of antimicrobial activity and phytochemical screening of oils and nuts of *Semecarpus anacardium* L.f", Scientific Research and Essay, Vol.2 (11). 486-490, November 2007. ISSN-1992-2248.
28. H.N.Thatoi, S.K.Panda, **S.K.Rath** and S.K.Dutta. "Some potential plants of antimicrobial and anticarcinogenic value from Similipal Biosphere Reserve". Similipal Biosphere Reserve. Vol.2 (1&2), 9-13, 2007.

Book/book chapter Publications(entire list of books/book chapters)

1. Sanjeet Kumar, Rajkumari Supriya Devi, Rikina Choudhury, Manisha Mahapatra, Susanta Kumar Biswal, Navneet Kaur, Jamuna Tudu, and Sakti Kanta Rath.(2022) Orchid Diversity, Conservation, and Sustainability in Northeastern India (Eds. James N. Furze · Saeid Eslamian Safanah M. Raafat · Kelly Swing). Earth Systems Protection and sustainability. Vol.1. Pp 111-140. Springer.
2. Shasmita, N.R.Singh, S.K.Rath, S. K.Behera and S.K.Naik (2018).In Vitro Secondary Metabolite Production Through Fungal Elicitation: An Approach for Sustainability. Fungal Nanobionics: Principle and Application. Pp-215-235. Springer
3. S. Behera, **S.K.Rath**, Mohd. S Akhtar, S.K.Naik (2018) Biotechnological intervention through tissue culture in *Hedychium coronarium*: A potential anticancer plant. Anticancer Plants: Natural Products and Biotechnological Implements. Eds: **Akhtar**, Mohd Sayeed, **Swamy**, Mallappa Kumara, Springer (InPress) ISBN:978-981-10-8064-7
4. B. Baliyarsingh, A. Mishra and **S.K.Rath** (2018) Microbial pesticides- Potential Alternative. Advances in Microbial Biotechnology: Current Trends and Future Prospects. Eds: P. Kumar, J.K.Patra and P. Chandra, Apple Academic Press, Taylor and Francis, USA Pp-87-118. ISBN:9781351248914
5. D. Mohapatra, N.R.Singh and **S.K.Rath** (2018) Prospects and application of Azospirillum spp as a natural agricultural biofertilizer. Advances in Microbial Biotechnology: Current Trends and Future Prospects. Eds: P. Kumar, J.K.Patra and P. Chandra, Apple Academic Press, USA (In Press) ISBN:9781351248914
6. Shasmita, N. R. Singh, **S.K. Rath**, Shashikanta Behera and Soumendra Kumar Naik. (2018) In vitro Secondary Metabolite Production Through Fungal Elicitation: An Approach for Sustainability. Fungal Nanobionics - Principles and Applications. Eds: **Prasad Ram**, **Kumar Vivek**, **Kumar Manoj** Springer (InPress) ISBN: 978-981-10-8666-3
7. D Mohapatra, **S.K.Rath** and P.K.Mohapatra. (2018) Bioremediation of insecticides by white rot fungi and its environmental relevance. Mycoremediation and environmental sustainability,Ed: Ram Prasad, Springer (InPress) ISBN:978-3-319-68957-9
8. S. Kumar, P.K.Dash, N.R.Singh, P.K.Jena and **S.K.Rath**. (2017) *Dioscorea bulbifera*: An important medicinal tuberous food of tribal Odisha. Ethnopharmacology, Biodiversity and Conservation. Eds. S.K.Panda and H.K.Sahu., ISBN:978-81-932499-5-6, Kunal Books. 12-26.
9. D.Mohapatra, **S.K.Rath**, N.R.Singh (2017) Anti-glycation agents/products from natural sources: A path unexplored. Natural products in food: Prospects and applications. Eds: Patra. J.K., Rath. S.K. and Jayabalan. R. Studium Press LLC, USA. ISBN:1-62699-074-3. Pp 383-400
10. D. Mohapatra, N.R.Singh and **S.K.Rath** (2017) Recent advances in Natural product from macrofungus: a territory unexplored. Recent Advances in natural products. Ed: Panda S.K. ISBN-1-62699-060-3. Studium Press LLC, USA , Pp-501-522.
11. S. Kumar, **S.K.Rath** and P.K.Jena. Pita Aalu (*Dioscorea bulbifera* L.) of Similipal Biosphere Reserve forest: Diversity and ethnobotanical values with its role in health

- care. Industrial and Environmental Biotechnology. Eds: K.Pramanik and J.K.Patra. 2013. Studium Press LLC USA. Pp.457-465. ISBN: 1-62699-013-1
12. **S.K.Rath**. Methods for evaluation of antioxidant activity of medicinal plants: A brief overview. Advances in Life Sciences. Eds: K.Tayung, B.P. Barik and U.B.Mohapatra. 2012. Studium Press LLC, USA. pp 245-258. ISBN: 1-933699-69-8
13. J.K.Patra, **S.K.Rath** and H.N.Thatoi. Antimicrobial bioactive compound from medicinal plants: An Overview. **Microbial Biotechnology**: Eds: B.B.Mishra and H.N.Thatoi., 2010. APH Publishing House, New Delhi. ISBN-978-81-313- 0849-3.

Participation in Conferences & Seminars (as invited/plenary/chair)

1. **S.K.Rath**. Delivered an Invited Lecture at the 45th Annual Conference of Orissa Botanical Society and National Seminar on Biotechnological Approaches for Mitigating Climate Change organised by Dept. of Botany, UN Auto. College of Science and Technology, Adaspur, Cuttack from 10-11th December, 2022
2. **S.K.Rath**. National Conference on Emerging Trends in Plants Science Research. Ravenshaw University, Odisha. 1-3 March, 2020.
3. S.K.Rath. Bioactive compounds of *Drosera indica* and its toxicity on *Artemia salina*. National Conference on Advances in Life Sciences and Biotechnology. Rama Devi Women's University, Bhubaneswar. 27-28 February, 2020
4. S.K.Rath. Study of ethnomedicinal, bioactive compounds and evaluation of antihelminthic values of *Anabas testudinus* Bloch. National Seminar on Indigenous Knowledge and conservation of Threatened Medicinal Plants. APRF Foundation and Centurion University, Odisha. 30-31 August, 2019
5. S.K.Rath. Carnivorous Plants of Odisha. State Level Seminar on Recent Advances in Biological Sciences for Sustainable Environment. Patamundai College, Odisha, 9th Nov, 2019.
6. S.K.Rath. Selection of efficient protocol for extraction of total protein from *Aspergillus niger*. National seminar on Importance of sacred groves for conservation of medicinal plants and Biodiversity. APRF Foundation and Shree Gopal Jew Trust, Odisha. 7 Jan, 2018.
7. S.K.Rath. Fungus: A potential tool for Bioremediation. Annual seminar talk at Sailabala Womens College, Cuttack. 9th December, 2017
8. S.K.Rath. Comparative phytochemical evaluation of micropropagated and natural *P. foetida* plants. National Seminar on Emerging Trends in Biotechnology and Crop Improvements. Ramadevi Womens University, 21-22 November, 2017
9. S.K.Rath. Ethnomedicinal studies and evaluation of bioactivity potential of selected medicinal plants from Similipal Biosphere Reserve. National Seminar on Biodiversity conservation and Livelihood management in Similipal Biosphere Reserve, Odisha. Centre for Similipal studies, North Orissa University, Baripada. 29-30 March, 2017.

10. S.K.Rath. Extraction, Isolation and Characterization of Bioactive compounds from Plant extracts.UGC sponsored National Seminar on “Current approaches in Life Sciences”. 21-22 March. 2015. M.P.C. Autonomous College

Other information(s)

Proceedings Published

O.Das, **S.K.Rath** and N.R.Singh. “Estimation of crude protein and callogenic analysis in members of Lamiaceae Family”. Proceedings of 37th Annual conference and P. Parija Memorial National Conference on Recent Advances in Plant Biotechnology. Department of Botany, Ravenshaw University, Cuttack. 22-23 December, 2012.

Books

Sanghamitra Acharya, Sanjeet kumar, Sakti Kanta Rath (2019). Indian Giant Squirrel. Ambika Prasad Research Foundation. ISBN:978-81-938861-7-5

Edited Books

Rajkumari Supriya Devi, Sakti Kanta Rath, Sanjeet Kumar (2020). Medico-Biowealth of India Vol-1. ISBN:978-81-945667-4-8

Natural Products in Food. Prospects and Application. Eds: J.K.Patra, S.K.Rath and R. Jayabalan. Studium Press LLC, USA. 2017. ISBN: 1-62690-074-3

Popular/Literary articles

S.K.Rath and D. Pani. Perspectives of Enzyme Technology. Emerging Science.Vol.5(2), 36-38, Feb. 2013.

S.K.Rath. Algae: The next generation fuel. AROMA, BARC, 2012

S.K.Rath. Microarray. Emerging Science. Vol.4 (2), 25-26, February, 2011.

S.K.Rath. Bioterrorism. Emerging Science. Vol.I (8). 23-26, January, 2010.

S.K.Rath. DNA Double helix- The Untold Story. Emerging Science.Vol.II (1). 21-22, July, 2009.

S.K.Rath. Louis Pasteur- A Legendary Scientist. Banani. North Orissa University. 83-85.2007

S.K.Rath. Male preganancy. Vigyan Tarang. Vol.16(1). 30.Sep.2004.
