

Dr. Binaya Kumar Pattnaik

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Affiliation and Corresponding Address

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Specialisation

- Environmental Chemistry
- Hydrogeochemistry
- Geochemistry of Soil and Sediment
- Metal Contamination of Water, Soil and Sediment
- Soil Enzymatic Activities
- Rain Water Chemistry

Orcid ID

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Web of Science ResearcherID

[P-9367-2018](#)

Scopus Author ID

[57190283774](#)

Vidwan ID

[Vidwan-ID : 271182](#)

Membership

Member of *International Society for Energy Environment and Sustainability* (ISEES)

Publications

Theses (2)

- [1] **Binaya Kumar Pattnaik**, “A Study on drainage morphometry of Hatti river valley in Mahanadi Basin, Odisha using Geographical Information System”, **M.Tech Thesis** (Under the supervision of Dr.S.K. Pattanayak, Sambalpur University), 2012.
- [2] **Binaya Kumar Pattnaik**, “Geochemistry of Water, Soil and Sediment with Special Reference to Hexavalent Chromium at the Sukinda Ultramafic Complex, India”, **Ph.D. Thesis** (Under the supervision of Dr. Sk. Md. Equeenuddin, NIT, Rourkela), 2017.

SCI Journals (3)

- [3] Binaya Kumar Pattnaik, Sk. Md. Equeenuddin. **2016**. “Potentially toxic metal contamination and enzyme activities in soil around chromite mines at Sukinda Ultramafic Complex, India”. *Journal of Geochemical Exploration*. 168, 127-136.

Elsevier, doi.org/10.1016/j.gexplo.2016.06.011. [Impact Factor – 3.472]. Number of Citation – 22. ISSN: 0375-6742

- [4] Sk. Md. Equeenuddin, **Binaya Kumar Pattnaik**.2017. “Assessment of heavy metal contamination in sediment at Sukinda Ultramafic Complex using HAADF STEM.” *Chemosphere*.185, 309-320. Elsevier, doi.org/10.1016/j.chemosphere.2017.06.131. [Impact Factor – 5.108]. Number of Citation-6. ISSN: 0045-6535
- [5] Sk. Md. Equeenuddin, **Binaya Kumar Pattnaik**.2020. “ Hydrogeochemical evolution of hexavalent chromium in the sukinda ultramafic complex in eastern part of India” . *Geochemistry*.80,125633. Elsevier, doi.org/10.1016/j.chemer.2020.125633. [Impact Factor – 2.364]. ISSN: 0009-2819
- [6] Moulick, D., Samanta, S., Sarkar, S., Mukherjee, A., **Pattnaik, B.K.**, Saha, S., Awasthi, J.P., Bhowmick, S., Ghosh, D., Samal, A.C., Mahanta, S., Mazumder, M.K., Choudhury, S., Bramhachari, K., Biswas, J.K., Santra, S.C., 2021. Arsenic contamination, impact and mitigation strategies in rice agro-environment: An inclusive insight. *Science of The Total Environment*. 800, 149477. Elsevier <https://doi.org/https://doi.org/10.1016/j.scitotenv.2021.149477> [Impact Factor- 7.963]

SCOPUS Journals (1)

- [7] Binaya Kumar Pattnaik, SanjayaPattnayak, ChandanSahu, **2019**. “Study of Drainage Morphometry of Hatti River Valley In Mahanadi Basin, Odisha Using Geographical Information System”. *Pollution Research*. 38, S100 – S107. EM International. ISSN: 0257-8050

Conferences (3)

- [8] **Binaya Kumar Pattnaik***,Sk. Md. Equeenuddin, Fakira Bastia. **2015**, “Hexavalent chromium contamination in Sukinda valley Odisha”, In: International conference on water: from pollution to purification, January 23-26, School of Environmental Sciences, Mahatma Gandhi University, Kottayam, Kerala, India. (Poster Presentation)
- [9] Sk. Md. Equeenuddin*, **Binaya Kumar Pattnaik**. **2019**. “Occurrence of hexavalent chromium in Sukinda ultramafic complex”. In: **Goldschmidt2019**: organised by the European Association of Geochemistry and the Geochemical Society, August 18-23, **Barcelona International Convention Centre, Barcelona, Spain**. (Poster Presentation)
<https://goldschmidtabstracts.info/abstracts/abstractView?id=2019003301>
- [10] **Binaya Kumar Pattnaik***,Sk. Md. Equeenuddin, Fakira Bastia. **2019**, “Metal Contamination of Soil and its impact on Soil Enzymatic Activities around Chromite Mines at the Sukinda Ultramafic Complex, India”, In: International conference on Sustainable Energy and Environmental Challenges (IV SEEC), November 27- 29, CSIR- National Environmental Engineering Research Institute (CSIR-NEERI), Nagpur, Maharashtra, India. (Oral Presentation).

Employments

Position	Department	Organization	Duration
Senior Research Fellow	Department of Soil Chemistry	Central Rice Research Institute, Cuttack, Orissa	25 th July 2011 – 10 th October 2012 (1 year 2 months 15 days)
Research Assistant	Department of Mining Engineering	National Institute of Technology, Rourkela	1 st April 2017 to 30 th June 2017 (3 months)
Assistant Professor	Symbiosis Institute of Geoinformatics, Pune	Symbiosis International Deemed University, Pune	Currently working since 24 th May 2018

Academic Qualifications

Degree	Subject	Year of passing	Board / Institute	University Name	Score
Ph.D.	Earth & Atmospheric Sciences	2017	National Institute of Technology Rourkela	National Institute of Technology Rourkela	Awarded
M. Tech	Environmental Science & Engineering	2012	Dept. of Environmental Sciences	Sambalpur University	77%
M. Sc.	Environmental Science	2010	Dept. of Environmental Sciences	Sambalpur University	78%
B.Sc. (Hons)	Environmental Pollution & Toxicology	2008	Govt. Autonomous College, Bhawanipatna	Sambalpur University	82% (Honours with Distinction)
Higher Secondary (10+2 level)	Science	2005	Govt. Junior College, Bhawanipatna	CHSE, Orissa	49%
HSC (10 th level)	General	2003	SaraswatiSishu/VidyaMandir, Bhawanipatna	BSE, Orissa	87%

Awards and Recognition

- Best presentation award from Dept. of Earth & Atmospheric Sciences in RSW 2017 at NIT, Rourkela.
- Best presentation award from Dept. of Earth & Atmospheric Sciences in RSW 2016 at NIT, Rourkela.
- Received MHRD (Govt. of India) Scholarship for Ph.D. from November 2012 to November 2017.

Seminars and Conferences Attended

- Poster presentation on “Hexavalent chromium contamination in Sukinda valley Odisha” at International conference on water: from pollution to purification, January 23-26. School of Environmental Sciences, Mahatma Gandhi University, Kottayam, Kerala, India
- Participated in International Conference on Frontier in Chemical Engineering-2013 from Dec 9-10, organised by Dept. of Chemical Engineering, NIT, Rourkela.
- Participated in “Seminar on prevention and control of dust pollution” in 2 Dec 2013 at Dept. Mining Engineering, NIT, Rourkela in collaboration with State Pollution Control Board, Odisha.
- Participated in “UGC Sponsored National Seminar in Nature, Environment & Society” from 11 Nov to 12 Nov 2013, organised by The Department of Sociology & Zoology, Neelashaila Mahavidyalaya, Jagda, Rourkela.

Laboratory Expertise

- Water, Soil and Sediment Sampling Techniques
- Water Quality Analysis
- Rainwater Sampling and Analysis
- Study of Soil and Sediment Chemical Properties
- Study of Soil Microbial Activities
- Geochemical Study of Soil and Sediment
- CO₂ and CH₄ gas Sampling Technique from Rice Field
- Air Sample Collection from soil and Analysis
- Digital Elevation Modelling by GIS software (Arc GIS v10)
- Drainage Morphometry Study of River Basin by GIS Software (Geomedia Professional)

Instruments Expertise

- Ion Chromatograph (Model- Metrohm Basic IC Plus)
- Tangential Flow Filtration
- Microwave Digestion
- Double Beam UV/VIS Spectrophotometer
- High Volume Sampler, Respirable Dust Sampler
- Flame Photometer
- Centrifuge Machine
- Ph, Eh, EC, Fluoride, Chloride Electrode (Thermoscientific Orion Electrode)

Instruments Familiar with

- XRD
- Scanning Electron Microscope
- Field Emission Scanning Electron Microscope
- High Resolution Transmission Electron Microscope
- Petrology Microscope
- HAADF-STEM

Research Assistantship

- “Chemical Characteristics of Rain Water at Rourkela”. **M.Sc. thesis**. Chandan Kumar Mohapatra, under the supervision of Dr. Sk. Md. Equeenuddin, NIT, Rourkela. 2016-2017.
- “Geochemical Characteristics of Ground Water and River Water in Rourkela”. **M.Sc. thesis**. Bibek Chatterjee and PallaviPraharaj, under the supervision of Dr. Sk. Md. Equeenuddin, NIT, Rourkela 2015-2016.
- “Role of Algae in Discharge from Malanjkhanda Copper Mine”. **B. Tech thesis**. Kedar Chandra Bisoi and Chandan Kumar Barik, under the supervision of Dr. Sk. Md. Equeenuddin, NIT, Rourkela. 2015.
- “Geochemistry of tailings at Malanjkhanda copper mine, Madhya Pradesh”. **B. Techthesis**. SubhashisSahu and SumitKumarBasantay, under the supervision of Dr. Sk. Md. Equeenuddin, NIT, Rourkela2014.
- “Acid Base Accounting of Mine Waste”. **B. Techthesis**. Indrajeet Singh and Rahul Anand Nag, under the supervision of Dr. Sk. Md. Equeenuddin, NIT, Rourkela. 2014.

Professional Training

- TEQIP sponsored training programme on “Aesthetics of Scientific Documentation” at NIT, Rourkela from 16th July 2014 to 17th July 2014.
- Training course on “Remote Sensing and GIS Application for Ground Water Studies” at Rajiv Gandhi National Ground Water Training and Research Institute, Raipur from 9th Sep 2013 to 13th Sep 2013.
- National workshop on “Environmental Impact Assessment: Issues, Challenges, and Policy Implications in India (EIA-2012) at IIT, Bhubaneswar from 9th June to 10th June 2012.
- Training programme on “Introduction to ArcGIS Desktop 10” by ESRI, India from 5th Dec 2012 to 6th Dec 2012.

PhD Guidance

1. PhD student name- **Praful N.K.**. Year of enrolment- 2021, Topic- *Development of process methodology to enhance the efficiency of waste water treatment plant of dairy industry*. University- **Symbiosis International (Deemed University), Pune**

References

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Relationship: Chairman, Doctoral Scrutiny
Committee |
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Personal details

Date & Place of Birth: 14th December 1987, Bhawanipatna, Odisha, India

Nationality: Indian

Father's name: Mr. Gokulananda Pattnaik

Category: General

Mother's name: Mrs. Manjubala Pattnaik

Gender: Male

Languages known: English, Hindi, Odiya, Sambalpuri

Blood group: O^{+ve}

I declare that all information furnished above are true to the best of my knowledge.



Place: Pune, India

(Binaya Kumar Pattnaik)

Date: 02/05/2022