

DATA SHEET FOR RESEARCH SCHOLARS



1. Name of the Scholar: PRATIK KUMAR DASH
2. Gender: Male
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9. Funding Agency: DST-INSPIRE
10. Date of commencement of Fellowship:
11. Period of Fellowship: Five Years

Title of Research Work: Fluoride Sources and Pathways in the Alumina Smelter Region and their Risk for Vegetation and Human Health: A Model Study in Hirakud, Odisha

12. Name of the Guide: Prof. (Dr.) Sanjaya Kumar Pattanayak
13. Registration Number: 02-ENVSC-06.02.2023
14. A Brief Abstract of your Research Work (Within 200 words):

Fluoride is an essential micronutrient and possesses both beneficial and detrimental effects on human health through the consumption of dietary intakes. The fluoride contamination of soil and water can be both geogenic and anthropogenic and therefore requires a model investigation in a fluoride contaminated area. The Hirakud township and its neighborhood areas surrounding the Hindalco Aluminium Industrial area is a suitable site for model investigation to unveil the contributions of Fluoride ions from Geogenic and Anthropogenic sources and to understand the pathways to human body system and its adverse impacts. The present study proposes study of mineral and elemental matrices in the rocks, soils, particulate matters hosting fluoride ions and their leaching to groundwater and surface water and entry into the vegetation and human body. The AAS, ICPMS, SEM-EDAX and FTIR will be used in this investigation for studies from different aspects. Risk on humans and vegetation will be ascertained from field observations. The study will serve as a model for investigation in other areas where there is postulation/observation of Fluoride pollution from Aluminium industry.

15. Status of Research Work:

- a) Writing the Synopsis
- b) Review of Literature
- c) Data Collection
- d) Data Analysis
- e) Writing the Draft Thesis

16. Do you have your profile in the following research networks?

- a) Google Scholar
- b) Research Gate
- c) Academia

17. Do you access the following e-resources subscribed by the university

- a) E-sodh Sindhu from INFLIBNET
- b) ProQuest

18. Number of Papers published in referred journals with ISSN: 1573-2959

19. Mention any two of your best publications in APA standard:

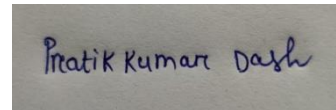
- a) Dash, P. K., Sahu, C., Basti, S., & Sahu, S. K. (2023). Altitude governs the air pollution tolerance and heavy metal accumulation in plants. *Environmental Monitoring and Assessment*, 195(9), 1-16.



Countersigned by the Research Supervisor



Countersigned by Head



Signature of the Candidate