CURRICULUM VITAE

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Honorary Assistant Professor,
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Present and past employment

2024 onwards	Scientist-E	Birbal Sahni Institute of Palaeosciences, Lucknow
2021-2024	Scientist-D	Birbal Sahni Institute of Palaeosciences, Lucknow
2017-2020	Scientist-C	Birbal Sahni Institute of Palaeosciences, Lucknow
2013-2016	Scientist-B	Birbal Sahni Institute of Palaeosciences, Lucknow
2012-2013	Research Associate	Wadia Institute of Himalayan Geology, Dehradun
2011-2012	Project Associate,	National Institute of Oceanography, Goa
2001-2006	Lecturer (Contract)	National Institute of Technology, Raipur

Educational Qualifications

Qualification	College/ Board	Year	Division
Ph. D. (Stable isotope geochemistry and paleoclimate)	Indian Institute of Technology Kharagpur, India	2011	-
M. Tech. (Applied Geology)	Government Engineering College Raipur Pt. R.S.U. Raipur, CG, India	2000	1st Division
B.Sc.	Government P.G. College Balaghat, Rani Durgavati University. Jabalpur, MP, India	1997	1st Division
S.S.C	M.P. Board Bhopal, India	1994	1st Division

NPDF guidance

Sl No.	Name of Student	Year of completion/on-going	University/ Institute
1.	Dr. Divya Kumari Mishra	2019 to 2021	BSIP

Ph.D. students supervised-completed & on-going

SNo	Name of Student	Year of Award/ on-going	Title of thesis	University/ Institute	Supervisor / co-supervisor
1.	Ms. Priyanka Pathak	2025 onwards	Reconstruction of Indian Summer Monsoon rainfall during the late Quaternary from the Eastern Ganga plain: forcing factors and its implication to C_3-C_4 vegetation change	KSKV Kachchh University, Bhuj	Supervisor
2.	Ms Korobi Saikia	2023 onwards	Holocene climate variability and its impact on the C_3/C_4 plant communities in the western margin of the Bengal Basin: phytolith based evidences	BSIP (AcSIR)	Supervisor

3.	Mr. Mohd Ikram	2022 onwards	Reconstruction of vegetation succession, climate change and human habitation imprints on lacustrine system in the Ganga plain during late Pleistocene-Holocene period	BSIP (AcSIR)	Co-supervisor
4.	Ms Sneha M. Mathew	2020 onwards	Paleocene–Eocene records of palaeohydrological and palaeoenvironmental changes from the lignite fields of Rajasthan, India	BSIP (AcSIR)	Co-supervisor

Summer internship

S.no.	Name of student	Title	Affiliation	Year
1	Mr. Amit Gupta	Basic for stable Isotope analysis	Depart. of Earth Sciences, HNB Garhwal University	2018
2	Ms. Sumaiyah Farooqui	Forensic Application of pollen and $\delta^{13}C$ values (carbon isotopes) study in honey	Amity Institute of Biotechnology, Lucknow	2019
3	Mr. Abhinav Prakash Srivastava	Paleoenvironment and Paleoclimatic interpretation of end Cretaceoaus Lameta Formation, Jabalpur, Madhya Pradesh on basis of Carbon and Oxygen Stable Isotope study	Department of Geology, Lucknow University	2020
4	Ms. Kritika Mishra	Climatic and vegetation interpretation with the help of stable isotopes	Department of Geology, Lucknow University	2020
5	Ms. Anuska Mukherjee	Delineating environmental signature encoded in Gastropod shell using stable isotope as a proxy	Department of Geology, Lucknow University	2022
6	Ms. Prasansha Singh	Stable carbon isotope ratio ($\delta^{13}C$ values) as a proxy to identify vegetation pattern (C_3 and C_4 vegetation) in the Ganga plain	Department of Chemistry, Lucknow University	2023
7	Ms. Siddhi Shukla	Stable isotope signature ($\delta^{18}O$ and $\delta^{13}C$ values) encoded in the gastropod as a proxy for seasonality	Department of Chemistry, Lucknow University	2024
8	Ms. Naincy Vishwkarma	Tracing vegetation pattern in the Ganga Plain	Department of Chemistry, Lucknow University	2024
9	Mr. Neelesh Raj	Oxygen ($\delta^{18}O$ values) and carbon isotope ratios ($\delta^{13}C$ values) in terrestrial gastropod shells to track hydrological and carbon cycle	Department of Chemistry at National P.G. College Lucknow	2024
10	Mr. Bhaskar	Stable carbon isotope ratios ($\delta^{13}C$ values) as a tracer to identify vegetation pattern (C_3 vs C_4 vegetation) in the Ganga Plain	Department of Chemistry at National P.G. College Lucknow	2024
11	Mr. Utkarsh Ojha	Tracing hydrological and carbon cycle using modern Gastropod	Department of Geology, Lucknow University	2024

Research Experience

1. Scientific

a. Paleoclimatic and paleovegetation reconstruction using stable isotope of oxygen and carbon in soil carbonate and carbon isotope ratio of organic matter associated with soil/sediments (SOM) and fatty acid in the Late Quaternary sediments.
b. Spatio-temporal change in the Ganga sedimentation using strontium isotope ratio of soil carbonate and strontium and neodymium isotope ratio of paleosols.
c. Preservation of carbon isotope ratio in organic matter in paleosols and soil carbonate.

2. Technical

a. **Mass spectrometry** - Working on stable isotope geochemistry since 2006.

(i) **Continuous Flow Isotope ratio Mass Spectrometer (CFIRMS):** With the help of Finnigan Delta^{Plus}XP and DeltaVPlus CFIRMS coupled with Gas Bench II, I have analyzed large number of carbonate samples (soil carbonate, Speleothem and Foraminifera) and water samples (rain water, ground water and river water) including inter-laboratory calibration based on standards like NBS and Z-Carrara and VSMOW at Indian Institute of Technology Kharagpur (IITKGP) and Wadia Institute of Himalayan Geology (WIHG). Also, measured large number samples of organic matter associated with soil and carbonate nodules, peat deposits, coal samples and graphite using Elemental Analyzer including standardization using IAEA cellulose standard at IITKGP, WIHG and National Institute of Oceanography Goa. I am also well versed with the measurement of sulfur isotope ratios of sulfide ore minerals and carbon isotope ratio of fatty acid and n-alkanes. Experienced in routine operation and maintenance of **MAT 253 and Delta Q CFIRMS and peripherals parts like Gas Bench and Elemental Analyzer.**

(ii) **Thermal Ionization Mass Spectrometer (TIMS):** I have used **TIMS** (TRITON, Thermo-Finnigan) to analyze strontium isotope ratio in soil carbonate and strontium and neodymium isotope ratio in sediments of the Ganga Plain to understand spatio-temporal change in Ganga sedimentation at Pondicherry University.

(iii) **Gas Chromatography Mass Spectrometer (GCMS):** With the help of GCMS (Shimadzu) I have identify different organic compound like fatty acid and alkanes separated from the ocean core sediments at NIO Goa.

b. **Compound specific analysis** - Performed compound specific analysis on the sediments of the Ganga Plain, India at Marine Chemistry and Geochemistry Laboratory, Woods Hole Oceanographic Institute under guidance of **Dr. Timothy Eglinton** and **Dr. Valier Galy**. At WHOI, I have separated fatty acid, alkanes and alcohol from the sediments of the Ganga Plain, India and analyzed stable carbon isotopic compositions of the fatty acids with the help of Hewlett Packard 6890 gas chromatography coupled with isotope ratio mass spectrometer.

c. **Phytolith Separation** - Developed skill to separate phytolith from plant leaf samples of the Ganga Plain, India.

d. **Field experiences** - Carried out extensive field work in the Ganga Plain, India.

3. Teaching experience

a. **Lecturer (contract basis) -** National Institute of Technology Raipur (CG)
Duration - From March 2001 to April 2006
Role/Responsibility -

i. Conducted lectures of following subjects
M.Tech. (Hydrology & Petrology)
BE Civil (Engineering Geology)
BE Mining (Mining Geology)

ii. Provided consultancies to different organization related with Exploration and Mining on behalf of National institute of Technology Raipur, India.

iii. Conducted training for M.Tech students on Field Mapping in various parts of the Chhattisgarh state, India.

b. **Assistant Professor (contract basis) -** Government P.G. College Balaghat, India
Duration - Aug 2000 to Nov 2000
Role/Responsibility -

i. Conducted lectures of M.Sc. & B.Sc. (General Geology & Petrology).

ii. Organized the Geological Excursion Tour for P.G. Course.

Publications

1. Mandal, S., Chakraborty, A., Singh, A., Agarwal, S. and Banerjee, S., 2026. Palaeoenvironmental and Palaeoclimatic Implications of Authigenic Al-Glauconite: Example From the Jurassic Neo-Tethys, Spiti Himalaya, India. *Geological Journal*.
2. Verma, S., Phartiyal, B., Agrawal, S., Morthekai, P., Manoj, M.C., Chandra, R., Sahu, L.N., Sagwal, S., Kumar, P. and Maurya, A.S., 2026. Coupled role of Westerlies and Indian Summer Monsoon in the climatic variability of Kashmir Valley, NW India during the Late Quaternary. *Palaeogeography, Palaeoclimatology, Palaeoecology*, p.113670.
3. Kumar, M., Agrawal, S., Sarangi, V., Farooqui, A., Singh, P., Ali, S.N., Morthekai, P., Tripathi, D., Kumar, A., Khan, S. and Sharma, A. (2025) Plant phenotypic adjustments in response to changes in atmospheric pCO2: insights from $\delta^{13}C$ values and stomatal index in C_3 plant leaves. *Isotopes in environmental and health studies*, 61(6), pp.600-616.
4. Mathew, S.M., Agrawal, S., Manoj, M.C., Sanyal, P., Rahi, I.C., Parmar, S., Prasad, V., Sharma, A. and Naik, A.S., 2025. Unearthing the PETM in the Indian tropics: n-alkane and bulk carbon isotope records from the Barmer Basin. *Palaeogeography, Palaeoclimatology, Palaeoecology*, p.113336.
5. Mukhopadhyay, S., Sen, A., Baldermann, A., Pal, D., Grengg, C., Samanta, P., Bose, S., Sengupta, P. and Agrawal, S., 2025. Biological control on iron phyllosilicate authigenesis and Archean ocean chemistry.
6. Verma, D., Govil, P., Agrawal, S., Morthekai, P., Kumar, B. and Khan, H., 2025. Late Quaternary productivity and hydrographic variability in the upper water column of the Agulhas Return Current region as inferred from planktic foraminifera. Quaternary International, 740, p.109894.
7. Deori, N., Verma, P., Agrawal, S., Thakkar, M.G. and Patel, J.M., 2025. Response of tropical rainforest to warming during Middle Eocene Climate Optimum (MECO): Evidence from palynological record from the Bartonian deposits of Kutch Basin, Western India. *Evolving Earth*, p.100065.
8. Sen, A., Mukhopadhyay, S., Stüeken, E.E., Samanta, P., Sarkar, S., Bose, S., Agrawal, S. and Kumar, A., 2025. Evolving marine sedimentation, redox stratification, and biogeochemical cycling in mid-to low-latitudinal non-frozen waters during late Neoproterozoic global-scale climatic transitions. *Precambrian Research*, *417*, p.107661.
9. Kumar, B., Govil, P., Agrawal, S., Kumar, P., Verma, D. and Khan, H., 2025. Western equatorial Indian Ocean surface hydrographic variations inferred from isotopic record of planktic foraminifera Globigerinoides ruber during last~ 412,000 years. *Journal of Earth System Science*, *134*(1), p.58.
10. Kumar, K., Sharma, A. and Agrawal, S., 2025. High-resolution Indian summer monsoon (ISM) records during the last 1400 yrs BP from the Mahi river basin, Mainland Gujarat, India. *Journal of Sedimentary Environments*, pp.1-13.
11. Trivedi, A., Agrawal, S., Sharma, A., Ali, S.N., Manoj, M.C., Nag, A., Misra, S. and Kawsar, M., 2024. Climatic Oscillations and Dynastic Trends: A Multiproxy analysis of the past two millennia in the Indian Subcontinent. Catena, 246, p.108424.
12. Trivedi, A., Ali, S.N., Manoj, M.C., Agrawal, S., Sharma, A., Phartiyal, B., Kumar, K., Tiwari, A., Morthekai, P., Thakur, B. and Farooqui, A., 2024. Characterization of biotic and abiotic signatures of modern lake sediments of western India, and its palaeo-environmental implications. Quaternary International, 708, pp.36-57.
13. Mehra, S.B., Agrawal, S., Sathe, V., Costa, A.G. and Chauhan, P.R., 2024. Stable isotope analysis of Late Pleistocene mammalian teeth from western, central, and north-central India and the associated Palaeolithic archaeology of the Indian Subcontinent. Quaternary Environments and Humans, p.100033.
14. Singh, P., Sarangi, V., Bhushan, R., Ali, S.N., Agrawal, S., Tiwari, P., Kawsar, M., Agnihotri, R., Sanyal, P., Kumar, K. and Thakur, B., 2024. Presence and implications of petrogenic organic carbon in High Himalayan Crystalline lake sediment. Radiocarbon, pp.1-23.
15. Srivastava, G., Bhatia, H., Verma, P., Singh, Y.P., Agrawal, S., Utescher, T. and Mehrotra, R.C., 2024. A transient shift in equatorial hydrology and vegetation during the Eocene Thermal Maximum 2. Geoscience Frontiers, 15(5), p.101838.
16. Ansari, M.A., Ansari, A.H., Mishra, R., Arif, M., Jena, P.S., Dabhi, A., Bhushan, R., Singh, D.P., Maurya, A.S., Das, P.K. and Rahi, I.C., 2024. Centennial-millennial scale global climate-linked

monsoonal and non-monsoonal changes in the eastern Arabian Sea during the last 42,800 years. Marine Geology, 472, p.107307.
17. Kumar, B., Govil, P., Agrawal, S., Kumar, P., Verma, D. and Khan, H., 2024. Surface hydrodynamic variations and their forcing mechanisms over the past~ 412,000 years from the western equatorial Indian Ocean.
18. Sehrawat, J.S., Agrawal, S., Kenney, A.P., Grimes, V. and Rai, N., 2024. Use of strontium isotope ratios in potential geolocation of Ajnala skeletal remains: a forensic archeological study. International Journal of Legal Medicine, 138(2), pp.615-626.
19. Khan, H., Govil, P., Panchang, R., Agrawal, S., Kumar, P., Kumar, B. and Verma, D., 2024. Abrupt intensification of AMOC and monsoonal winds during mid-MIS4 (Heinrich Event 6) in the western Arabian Sea. Global and Planetary Change, p.104398.
20. Uddandam, PR., Agnihotri, P., Agrawal, S., Singh, H., (2023). Early Eocene biotic assemblage from the sedimentary deposits of the Tarkeshwar Lignite Mine, Gujarat and its palaeoenvironmental implications. Journal of Palaeosciences 72, 127–139 https://doi.org/10.54991/jop.2023.1864
21. Nag, D., Phartiyal, B., Agrawal, S., Kumar, P., Sharma, R., Kumar, K., Sharma, A. and Joshi, M., 2023. Westerly-monsoon variations since the last deglaciation from semi-arid Ladakh region, Trans Himalaya, India. *Palaeogeography, Palaeoclimatology, Palaeoecology*, *618*, p.111515.
22. Tripathi, S., Thakur, B., Sharma, A., Phartiyal, B., Basumatary, S.K., Ghosh, R., Kumar, K., Manoj, M.C., Agrawal, S., Farooqui, A. and Tiwari, P., 2023. Modern biotic and abiotic analogues from the surface soil of Ganga-Ghaghara-Gandak interfluves of the Central Ganga Plain (CGP), India: Implications for the palaeoecological reconstructions. *Catena*, *224*, p.106975.
23. Khan, H., Govil, P., Panchang, R., Agrawal, S., Kumar, P., Kumar, B. and Verma, D., 2023. Surface and thermocline ocean circulation intensity changes in the western Arabian Sea during~ 172 kyr. *Quaternary Science Reviews*, *311*, p.108133.
24. Joshi, P., Phartiyal, B., Joshi, M., Agrawal, S., Kumar, P. and Sharma, R., 2023. Reconstruction of landscape and climate of the largest drainage basin in the Ladakh Range, NW Trans Himalaya during the last 7000 years. *Catena*, *223*, p.106907.
25. Ghosh, R., Saikia, K., Biswas, O., Agrawal, S., Morthekai, P., Arif, M., Phartiyal, B., Sharma, A., Singh, N., Paruya, D.K. and Maharana, P., 2023. Last 10 millennial history of Indian summer monsoon in the Bengal region–a multi-proxy reconstruction from a lacustrine archive. *Palaeogeography, Palaeoclimatology, Palaeoecology*, *609*, p.111308.
26. Phartiyal, B., Ali, S.N., Sharma, A., Aagrawal, S., Nag, D., Tiwari, P., Kumar, M., Morthekai, P., Govil, P., Thakur, B. and Bhushan, R., 2022. Palaeoclimatic variability during last eight millennia from a morainal lake in Zanskar, northwest Himalaya, India. *Journal of Palaeosciences*, *71*, pp.75-88.
27. Sehrawat, J.S., Agrawal, S., Sankhyan, D., Singh, M., Kumar, S., Prakash, S., Rajpal, R., Chaubey, G., Thangaraj, K. and Rai, N., 2022. Pinpointing the Geographic Origin of 165-Year-Old Human Skeletal Remains Found in Punjab, India: Evidence From Mitochondrial DNA and Stable Isotope Analysis. *Frontiers in Genetics*, *13*.
28. Mishra, D.K., Hackley, P.C., Jubb, A.M., Sanders, M.M., Agrawal, S. and Varma, A.K., 2022. Maturation study of vitrinite in carbonaceous shales and coals: Insights from hydrous pyrolysis. *International Journal of Coal Geology*, p.104044.
29. Khan, H., Govil, P., Panchang, R., Kumar, P. and Agrawal, S., 2022. Surface hydrographic variations in the western Arabian Sea through the last 172 kyr. *Geo-Marine Letters*, *42*(2), pp.1-8.
30. Kumar, M., Saikia, K., Agrawal, S., Ghosh, R., Ali, S.N., Arif, M., Singh, D.S., Sharma, A., Phartiyal, B. and Bajpai, S., 2022. Climatic control on the C_3 and C_4 plant abundance during the late Pleistocene–Holocene in the northern Gangetic Plain, India. *Palaeogeography, Palaeoclimatology, Palaeoecology*, p.110890.
31. Roy, I., Ranhotra, P.S., Tomar, N., Shekhar, M., Agrawal, S., Bhattacharyya, A., Kumar, P., Patil, S.K. and Sharma, R., 2022. Reconstruction of the Late Holocene climate variability from the Summer Monsoon dominant Bhagirathi valley, western Himalaya. *Journal of Asian Earth Sciences*, p.105080.
32. Aggarwal, N., Mathews, R.P., Ansari, A.H., Thakur, B. and Agrawal, S., 2022. Palaeoenvironmental reconstruction for the Permian (lower Gondwana) succession of the Godavari

Valley Coalfield in southern India based on a combined palynofacies, carbon isotope, and biomarker study. *Journal of Palaeogeography*.

33. Govil, P., Mazumder, A., Agrawal, S., Azharuddin, S., Mishra, R., Khan, H., Kumar,B., Verma, D., 2022. Abrupt changes in the southwest monsoon during Mid-Late Holocene in the western Bay of Bengal, Journal of Asian Earth Sciences.
34. Azharuddin, S., Govil, P., Singh, A.D., Mishra, R., Agrawal, S., 2022. Mid-Holocene intensification of the oxygen minimum zone in the northeastern Arabian Sea, Journal of Asian Earth Sciences.
35. Kar, R., Mishra, K., Quamar, M.F., Mohanty, R.B., Agrawal, S., Tripathi, S. and Mishra, A.K., 2022. A high-altitude calibration set of modern biotic proxies from the Western Himalaya, India: Pollen–vegetation relation, anthropogenic and palaeoclimatic implications. *CATENA*, *211*, p.106011.
36. Mahajan, S., Sathe, V., Rai, N., Agrawal, S. and Chakraborty, S., 2022. Human tooth enamel carbon and oxygen stable isotope dataset from Chalcolithic Inamgaon (India). *Data in Brief*, p.107711.
37. Sarangi, V., **Agrawal, S**. and Sanyal, P., 2021. The disparity in the abundance of C_4 plants estimated using the carbon isotopic composition of paleosol components. Palaeogeography, Palaeoclimatology, Palaeoecology, 561, p.110168.
38. Mishra, D.K., Varma, A.K., Mendhe, V.A., Agrawal, S., Singh, B.D. and Hackley, P.C., 2021. Organo-Facies and Mineral Effects on Sorption Capacity of Low-Maturity Permian Barakar Shales from the Auranga Basin, Jharkhand, India. *Energy & Fuels*, *35*(9), pp.7717-7737.
39. Biswas, O., Ghosh, R., **Agrawal, S.,** Morthekai, P., Paruya, D. K., Mukherjee, B., Bera, M., Bera, S. 2021. A comprehensive calibrated phytolith based climatic index from the Himalaya and its application in palaeotemperature reconstruction. Science of The Total Environment, 750, 142280.
40. Tripathi, D., Kotlia, B.S., Tiwari, M., Pokharia, A.K., **Agrawal, S.,** Kumar, P., Long, T., Paulramasamy, M., Thakur, B., Pal, J. and Singh Mahar, K., 2021. New evidence of mid-to late-Holocene vegetation and climate change from a Neolithic settlement in western fringe of Central Ganga Plain: Implications for Neolithic to Historic phases. The Holocene, p.0959683620972770.
41. Misra, S., Bhattacharya, S., Mishra, P.K., Misra, K.G., **Agrawal, S.** and Anoop, A., 2020. Vegetational responses to monsoon variability during Late Holocene: Inferences based on carbon isotope and pollen record from the sedimentary sequence in Dzukou valley, NE India. Catena, 194, p.104697.
42. Ali, S.N., **Agrawal, S.,** Quamar, M.F., Dubey, J., Chauhan, N., Bisht, P., Pandey, P., Arif, M., Shekhar, M. and Morthekai, P., 2020. Climate variability in the central Himalaya during the last 15 kyr: Evidance of precipitation variability from multiproxy studies. Journal of Palaeontological Society of India, 65(1), pp.36-54.
43. Ali, S.N., **Agrawal, S**., Sharma, A., Phartiyal, B., Morthekai, P., Govil, P., Bhushan, R., Farooqui, S., Jena, P.S. and Shivam, A. 2020. Holocene hydroclimatic variability in the Zanskar Valley, Northwestern Himalaya, India. Quaternary Research, pp.1-17.
44. Ali, S.N., Sharma, A., **Agrawal, S**., MG, Y., RA, J., Dubey, J. and Morthekai, P., 2020. Oxygen and deuterium isotope characteristics of Teesta river catchment from Sikkim Himalaya, India: Implications of different moisture sources. Geochemical Journal, 54(5), pp.327-336.
45. Mathews, R.P., Chetia, R., **Agrawal, S**., Singh, B.D., Singh, P.K., Singh, V.P. and Singh, A., 2020. Early Palaeogene Climate Variability Based on n-alkane and Stable Carbon Isotopic Composition Evidenced from the Barsingsar Lignite-bearing Sequence of Rajasthan. Journal of the Geological Society of India, 95(3), pp.255-262.
46. Mathews, R.P., Pillai, S.S.K., Manoj, M.C. and **Agrawal, S**., 2020. Palaeoenvironmental reconstruction and evidence of marine influence in Permian coal-bearing sequence from Lalmatia Coal mine (Rajmahal Basin), Jharkhand, India: A multi-proxy approach. International Journal of Coal Geology, p.103485.
47. Pillai, S.S.K., Mathews, R.P., Murthy, S., Goswami, S., **Agrawal, S**., Sahoo, M., Singh, R.K., 2020. Palaeofloral Investigation Based on Morphotaxonomy, Palynomorphs, Biomarkers and Stable Isotope from Lalmatia Coal Mine of Rajmahal Lower Gondwana Basin, Godda District, Jharkhand: An Inclusive Empirical Study. Journal of the Geological Society of India, 96 (1), pp.43-57.

48. Chakraborty, A., Chosh, A.K. and **Agrawal, S.,** 2020. First record of Ditrupa gracillima (Annelida, Polychaeta) from the late Pliocene of Andaman and Nicobar Basin: insights on the ultrastructure, stable isotopic signature and distribution pattern. Micropaleontology, 66(6), pp.491-501.
49. Prasad, V., Uddandam, P.R., **Agrawal, S**., Bajpai, S., Singh, I.B., Mishra, A.K., Sharma, A., Kumar, M. and Verma, P., 2020. Biostratigraphy, palaeoenvironment and sea level changes during pre-collisional (Palaeocene) phase of the Indian plate: palynological evidence from Akli Formation in Giral Lignite Mine, Barmer Basin, Rajasthan, Western India. Episodes.
50. Ansari, A.H., Ahmad, S., Govil, P., **Agrawal, S**. and Mathews, R.P., 2020. Mo-Ni and organic carbon isotope signatures of the mid-late Mesoproterozoic oxygenation. Journal of Asian Earth Sciences, 191, p.104201.
51. Dubey, J., Thakur, B., **Agrawal, S**., Sharma, A., Morthekai, P., Srivastava, V. and Ali, S.N., 2020. Diversity of diatom and carbon isotope characterization of soil organic matter in extreme climate, Sikkim Himalaya, India. Current Science, 119(4), pp.649-660.
52. Ansari, A.H., Pandey, S.K., Kumar, K., **Agrawal, S.,** Ahmad, S. and Shekhar, M., 2020. Palaeoredox link with the late Neoproterozoic–early Cambrian Bilara carbonate deposition, Marwar Supergroup, India. Carbonates and Evaporites, 35(2), pp.1-13.
53. Aggarwal, N., **Agrawal, S.,** Thakur, B. (2019). Palynofloral, palynofacies and carbon isotope of Permian coal deposits from the Godavari Valley Coal field, South India: Insights into the age, palaeovegetation and palaeoclimate. International Journal of Coal Geology, 241, 103285.
54. Kumar, A., Sanyal, P., **Agrawal, S.** (2019). Spatial distribution of $\delta^{18}O$ values in river water in the Ganga River Basin: Insight into the hydrological processes. Journal of Hydrology 571, 225-234.
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56. Ansari, A., Pandey, S.K., Sharma, M., **Agrawal, S.,** Kumar, Y. 2018. Carbon and oxygen isotope stratigraphy of the Ediacaran Bilara Group, Marwar Supergroup, India: Evidence for high amplitude carbon isotopic negative excursions. Precambrian Research. 308, 75-91.
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Academic Projects

1. **M.Tech Final Year (2000)**
   Title of Dissertation-*"Ore Geology, Exploration, Environmental Control at Malanjkhand Copper Mines, Distt. Balaghat, MP, India."*
   The Training Imparted on-
   - Ore Geology
   - Exploration, Sampling and its Techniques, Face Mapping and Correlation, Core Logging Synthesis and Analysis of Exploration Data.
   - Preparation of Geological Section & Plans.
   - Ore Reserve Estimation by Various Method like Transverse – Cross Section & Level Plans.
   - Quality Control
   - Ore Beneficiation
2. **M.Tech Final Year (2001):** Field Training Experience on Geological Mapping
   Title*: Techniques of Geological Mapping around Sonakhan & Rajadevri, Sonakhan Green Stone Belt Distt.-Raipur, India.*
3. **M.Tech Second Year (1999):** Geological Excursion Tour around Bastar, Balaghat & Jabalpur Region. The study includes field observation of various sites i.e. Tokapal Kimberlite Field, Narli Tin Deposit, Distt. Bastar, Bailadilla Iron Ore Project, NMDC, Distt. Dantewara, Malanjkhand Copper Project, Manganese Ore India Limited, Distt. Balaghat, Lameta Ghat, Barghi Dam Jabalpur, India.
4. **M. Tech First Year (1998):** Field Experience on Geological Mapping
   Title: ***The Geological Field Training Camp of Some Part of Area around Mahasamund, India.***

Extra Curricular Activities

1. Working as **COVID19 frontline** worker during pandemic time.
2. **Organized three days pre-conference tour (International Conference on Asian Current Research on Fluid Inclusions, ACROFI-2) in and around Malanjkhand copper mines,**

Balaghat MP on the behalf of department of Geology and Geophysics, Indian Institute of Technology Kharagpur.

3. Worked as Organizing Committee Member in the "**International Conference on Asian Current Research on Fluid Inclusions (ACROFI-2)"** from 12-14 November 2008 at Indian Institute of Technology, Kharagpur, India.
4. Worked as Organizing Committee Member in the **"National Workshop on Computer Application in Mineral Exploration, Mining & Water Resource Management"** (23-24 March, 2001) at Govt. Engg. College Raipur India.
5. Worked as Organizing Committee Member in the **"International Conference on Diamond and Gemstone,** from 9th February to 15th February 2002 at Raipur, India.

Achievements

1. Beneficiary of Merit Scholarship for 3 consecutive years in M.P. Board Technical Education, India in M.Tech (Applied Geology).
2. Gold Medalist in Pt. Ravi Shankar Shukla University, Raipur, India (2000) for M.Tech. Degree in Applied Geology.
3. Beneficiary of Wood Hole Oceanographic Institute Mary Sears Visitor award.