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- **AREA OF SPECIALIZATION AND RESEARCH INTEREST:** FTIR Spectroscopy of Coal/Shale/Minerals/Rocks, Coal Geology, Hyperspectral Remote Sensing and Exploration, Image Processing and Spatial Data Analysis, Aerosols and Climate Change, Geostatistics & GIS
- **PUBLICATIONS:** Refereed Journal Articles (42), Proceedings, Newsletters, Reports (9), Book Chapters (3), PATENTS: 7 (1 USA, 6 India).
- **RESEARCH - CITATION INDICES:**
(Google Scholar) **h-index = 30, i10-index = 41, Citations: 3535.**

Total Number of Journal Publications in Entire Career (According to Web of Science - WoS): 42

Number of Publications as Sole Guide/Principal Guide of PhD students in current position (According to Web of Science, WoS)

No. of Publications in Q1 Journals	No. of Publications in Q2 Journals
4	5

Public Researcher Profiles:

Authors Portals/IDs	Link/Number
IRINS	https://iitism.irins.org/profile/97640
ORCID	https://orcid.org/0000-0001-7371-2322
Web of Science ResearcherID	https://www.webofscience.com/wos/author/rid/B-5650-2008
Sci-profiles	https://sciprofiles.com/profile/1889572
Scopus	https://www.scopus.com/authid/detail.uri?authorId=11739169500
Google Scholar	https://scholar.google.co.in/citations?user=HiIq7UAAAAJ

List of Publications:

Refereed Journal Articles (Web of Science – WoS - Published)

1. Mishra, S., Prasad, A. K., Vinod, A., Shukla, A., Mukherjee, S., Purkait, B., Varma, A. K., & Sarkar, B. C. (2025). A multi-model approach for estimation of ash yield in coal using Fourier transform infrared spectroscopy. Scientific Reports, 15(1), 13786. <https://doi.org/10.1038/s41598-025-98071-3>. (WoS Citations: NA, ImpactFactor: 3.8)
2. Vinod, A., Prasad, A.K., Mishra, S. et al. A novel multi-model estimation of phosphorus in coal and its ash using FTIR spectroscopy. Scientific Reports, 14, 13785 (2024). <https://doi.org/10.1038/s41598-024-63672-x> (WoS Citations: 5, ImpactFactor: 3.8)
3. Nayak, S.; Vinod, A.; Prasad, A.K. (2023). Spatial Characteristics and Temporal Trend of Urban Heat Island Effect over Major Cities in India Using Long-Term Space-Based MODIS Land Surface Temperature Observations (2000–2023). Appl. Sci., 13, 13323. <https://doi.org/10.3390/app132413323>. (WoS Citations: 3, ImpactFactor: 2.818)

4. Desinayak, N.; Prasad, A.K.; Vinod, A.; Mishra, S.; Shukla, A.; Nayak, S. (2023). Rise in MidTropospheric Temperature Trend (MSU/AMSU 1978–2022) over the Tibet and Eastern Himalayas. *Appl. Sci.*, 13, 9088. <https://doi.org/10.3390/app13169088> (WoS Citations: 1, ImpactFactor: 2.818)
5. Mishra, S.; Prasad, A.K.; Shukla, A.; Vinod, A.; Preety, K.; Varma, A.K. (2023). Estimation of Carbon Content in High-Ash Coal Using Mid-Infrared Fourier-Transform Infrared Spectroscopy. *Minerals*, 13, 938. <https://doi.org/10.3390/min13070938>. (WoS Citations: 11, ImpactFactor: 2.5)
6. Shukla, A., Prasad, A.K., Mishra, S., Vinod, A., & Varma, A.K. (2023). Rapid Estimation of Sulfur Content in High-Ash Indian Coal Using Mid-Infrared FTIR Data. *Minerals*, 13(5), 634. MDPI AG. Retrieved from <http://dx.doi.org/10.3390/min13050634>. (WoS Citations: 12, ImpactFactor: 2.5)
7. Ghosh, S., Philip, G., Prasad, A. K., Syed, T.H., & Mohanty, S.P. (2023). Towards Quantifying the relative tectonic activity in the Trans-Yamuna segment of the NW Himalaya. *Geocarto International*. <https://doi.org/10.1080/10106049.2022.2155712> (WoS Citations: 4, ImpactFactor: 3.45)
8. Mohammad, A., Prasad, A.K., Wetsah, K., Azad, M., Aryan, V., & El-Askary, H. (2022). Titaniferous-Vanadiferous, Magnetite-Ilmenite Mineralization in a Mafic Suite within the Chhotanagpur Gneissic Complex, Bihar, India. *Minerals*, 12(7), 860. <https://doi.org/10.3390/min12070860> (WoS Citations: 1, ImpactFactor: 2.818)
9. Desinayak, N., Prasad, A.K., El-Askary, H., Kafatos, M., & Asrar, G. R. (2022). Snow cover variability and trend over the Hindu Kush Himalayan region using MODIS and SRTM data. *Annales Geophysicae*, 40(1), 67–82. <https://doi.org/10.5194/angeo-40-67-2022> (WoS Citations: 18, ImpactFactor: 2.19)
10. Preety, K., Prasad, A.K., Varma, A. K., & El-Askary, H. (2022). Accuracy Assessment, Comparative Performance, and Enhancement of Public Domain Digital Elevation Models (ASTER 30 m, SRTM 30 m, CARTOSAT 30 m, SRTM 90 m, MERIT 90 m, and TanDEM-X 90 m) Using DGPS. *Remote Sensing*, 14(6), 1334. <https://doi.org/10.3390/rs14061334> (WoS Citations: 25, ImpactFactor: 5.349)
11. El-Askary, H., Park S. K., M-H Ahn, Prasad, A.K., and Kafatos, M. (2015), On the Detection and Monitoring of the Transport of an Asian Dust Storm Using Multi-sensor Satellite Remote Sensing, *Journal of Environmental Informatics*, doi:10.3808/jei.201500306. (WoS Citations: 18, ImpactFactor: 3.773)
12. Park, S., El-Askary, H. , Sabbah, I., Kwak, H., Prasad, A. K., W-K Lee, and Kafatos, M. (2015), Studying air pollutants origin and associated meteorological parameters over Seoul from 2000 to 2009, *Advances in Meteorology*, Article ID 704178, pp. 1-2. <https://doi.org/10.1155/2015/704178>. (WoD Citations: 11, ImpactFactor: 1.348)
13. Kim, So-Ra, A.K. Prasad, H. El-Askary, W-K Lee, D-A Kwak, S-Ho Lee, and M Kafatos (2014), Application of the Savitzky-Golay filter to land cover classification using temporal MODIS vegetation indexes, *Photogrammetric Engineering & Remote Sensing*, 80(5), 675-685, <https://doi.org/10.14358/PERS.80.7.675>. (WoS Citations: 33, ImpactFactor: 1.80).
14. Sprigg, W. A. , S. Nickovic, J. N. Galgiani, G. Pejanovic, S. Petkovic, M. Vujadinovic, A. Vukovic, M. Dacic, S. DiBiase, A. K. Prasad, and H. El-Askary (2014), Regional dust storm modeling for health services: The case of valley fever, *Aeolian Research*, 14, 53–73. <http://dx.doi.org/10.1016/j.aeolia.2014.03.001>, (WoS Citations:69, ImpactFactor: 2.520).
15. Vukovic, A., M. Vujadinovic, G. Pejanovic, , J. Andric, M. R. Kumjian, V. Djurdjevic, M. Dacic, , A. K. Prasad, H. M. El-Askary, B. C. Paris, S. Petkovic, S. Nickovic, and W. A. Sprigg (2014), Numerical simulation of "An American Haboob", *Atmos. Chem. Phys.*, 14, 3211– 3230, 2014, www.atmos-chem-phys.net/14/3211/2014/; doi:10.5194/acp-14-3211-2014, (WoS Citations: 49, ImpactFactor: 5.510).
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17. Kumar, S., Singh A.K., A.K. Prasad, and R.P. Singh (2013), Variability of GPS derived water vapor and comparison with MODIS data over the Indo-Gangetic plains, *Physics and Chemistry of the Earth*, 55-57, 11-18, (doi:10.1016/j.pce.2010.03.040). (WoS Citations: 26, ImpactFactor: 0.917).
18. Kaskaoutis, D. G., A.K. Prasad, P.G. Kosmopoulos, P.R. Sinha, S. K. Kharol, P. Gupta, H. M. El-Askary, and M. Kafatos (2012), Synergistic use of remote sensing and modeling for tracing dust storms in the Mediterranean, *Advances in Meteorology*, , 14pp, doi:10.1155/2012/861026, (WoS Citations: 27, ImpactFactor: 1.239).

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20. Prasad, A.K., R. P. Singh, and M. Kafatos (2011), Influence of coal-based thermal power plants on the spatial-temporal variability of tropospheric NO₂ column over India, Environmental Monitoring and Assessment, DOI 10.1007/s10661-011-2087-6. (WoS Citations: 44, ImpactFactor: 1.436).
21. Prasad, A. K., H.M. El-Askary, and M. Kafatos (2010), Implications of high altitude desert dust transport from Western Sahara to Nile Delta during biomass burning season, Environmental Pollution, 158, 3385-3391. <https://doi.org/10.1016/j.envpol.2010.07.035>. (WoS Citations: 36, ImpactFactor: 3.395).
22. Prasad, A.K., R.P. Singh (2010), Chlorophyll, calcite, and suspended sediment concentrations in the Bay of Bengal and the Arabian Sea at the river mouths, Advances in Space Research, 45, 61– 69. <https://doi.org/10.1016/j.asr.2009.07.027>. (WoS Citations: 19, ImpactFactor: 1.076).
23. Prasad, A.K., and R. P. Singh (2009), Validation of MODIS Terra, AIRS, NCEP/DOE AMIP-II Reanalysis-2, and AERONET Sun photometer derived integrated precipitable water vapor using ground-based GPS receivers over India, Journal of Geophysical Research, 114, D05107, doi:10.1029/2008JD011230. (WoS Citations: 132, ImpactFactor: 3.303).
24. Prasad, A.K., K.-H.S. Yang, H.M. El-Askary, and M. Kafatos (2009), Melting of major Glaciers in the western Himalayas: evidence of climatic changes from long term MSU derived tropospheric temperature trend (1979-2008), Ann. Geophys., 27, 4505-4519. doi:10.5194/angeo27-4505-2009. (WoS Citations: 93, ImpactFactor: 1.620).
25. Singh, R. P., A.K. Prasad, V.K. Kayetha, and M. Kafatos (2008), Enhancement of oceanic parameters associated with dust storms using satellite data, Journal of Geophysical Research, 113, C11008, doi:10.1029/2008JC004815. (WoS Citations: 78, ImpactFactor: 3.303).
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27. Prasad, A.K., and R.P. Singh (2007), Changes in aerosol parameters during major dust storm events (2001-2005) over the Indo-Gangetic basin using AERONET and MODIS data, Journal of Geophysical Research, 112 (D9), D09208, doi: 10.1029/2006JD007778. (WoS Citations: 194, ImpactFactor: 3.303).
28. Bhattacharjee, P.S., A.K. Prasad, M. Kafatos, and R.P. Singh (2007), Influence of A Dust Storm on Carbon Monoxide and Water Vapor over Indo-Gangetic Plains, Journal of Geophysical Research, 112, D18203, doi:10.1029/2007JD008469. (WoS Citations: 41, ImpactFactor: 3.303).
29. Prasad, A.K., S. Sarkar, and R.P. Singh (2007), Inter-annual variability of vegetation cover and rainfall over India, Advances in Space Research, 39, 79–87, doi:10.1016/j.asr.2006.02.026. (WoS Citations: 33, ImpactFactor: 1.076).
30. Prasad, A.K. and R.P. Singh (2007), Features of hurricane Katrina using multi sensor data, International Journal of Remote Sensing, 28 (21), 4709-4713. DOI: 10.1080/01431160500522668. (WoS Citations: 2, ImpactFactor: 1.188).
31. Prasad, A.K. and R.P. Singh (2007), Comparison of MISR-MODIS aerosol optical depth over the Indo-Gangetic basin during the winter and summer seasons (2000-2005), Remote Sensing of Environment, 107, 109-119, doi:10.1016/j.rse.2006.09.026. (WoS Citations: 168, ImpactFactor: 3.954).
32. Kayetha, V.K., Senthilkumar J., A.K. Prasad, G. Cervone and R.P. Singh (2007), Effect of dust storm on ocean color and snow parameters, Photonirvachak - Journal of the Indian Society of Remote Sensing, 35(1). <https://doi.org/10.1007/BF02991828>. (WoS Citations: 28, ImpactFactor: 0.29).
33. Singh, R.P., G. Cervone, M. Kafatos, A.K. Prasad, A.K. Sahoo, D. Sun, D.L. Tang and R. Yang (2007), Multi-sensor Studies of the Sumatra Earthquake and Tsunami of 26 December 2004, International Journal of Remote Sensing, 28 (13-14), 2885-2896 (12), doi: 10.1080/01431160701237405. (WoS Citations: 46, ImpactFactor: 1.188).
34. Prasad, A.K., R.P. Singh, V. Tare and M. Kafatos (2006), Use of vegetation index and meteorological parameters for prediction of crop yield in India, International J. Remote Sensing, 28 (23), 5207 – 5235, doi: 10.1080/01431160601105843. (WoS Citations: 56, ImpactFactor: 1.188).

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36. Prasad, A.K., R.P. Singh and A. Singh (2006), Seasonal climatology of aerosol optical depth over Indian subcontinent: trend and departures in recent years, *International Journal of Remote Sensing*, 27(12), 2323–2329, doi: 10.1080/01431160500043665. (WoS Citations: 46, ImpactFactor: 1.188).
37. Prasad, A.K., K. Vinay Kumar, S. Singh and R.P. Singh (2006), Potentiality of multi-sensor satellite data in mapping flood hazard, *Photonirvachak-Journal of the Indian Society of Remote Sensing*, 34 (3): 219-231. <https://doi.org/10.1007/BF02990651>. (WoS Citations: 14, ImpactFactor: 0.29).
38. Prasad, A.K., L. Chai, R.P. Singh and M. Kafatos (2005), Crop yield estimation model for Iowa using remote sensing and surface parameters, *International Journal of Applied Earth Observation and Geoinformation*, 8 (1), 26-33, doi:10.1016/j.jag.2005.06.002. (WoS Citations: 299, ImpactFactor: 1.744).
39. Prasad, A.K. and R.P. Singh (2005), Extreme rainfall event of July 25-27, 2005 over Mumbai, west coast, India, *Photonirvachak-Journal of the Indian Society of Remote Sensing*, 33 (3), 365-370. <https://doi.org/10.1007/BF02990007>. (WoS Citations: 19, ImpactFactor: 0.29).
40. Prasad, A. K., Singh, R. P., & Singh, A. (2004). Variability of aerosol optical depth over Indian subcontinent using modis data. *Journal of the Indian Society of Remote Sensing*, 32(4), 313–316. <https://doi.org/10.1007/bf03030855>. (WoS Citations: NA, ImpactFactor: 2.2).
41. Kumar, S., Singh, A. K., Prasad, A. K., & Singh, R. P. (2013). Variability of GPS derived water vapor and comparison with MODIS data over the Indo-Gangetic plains. *Physics and Chemistry of the Earth, Parts A/B/C*, 55, 11-18. (WoS Citations: 26, ImpactFactor: 4.1).
42. Kumar, S., Singh, A. K., Prasad, A. K., & Singh, R. P. (2009). Annual variability of water vapor from GPS and MODIS data over the Indo-Gangetic Plains. *J. Ind. Geophys. Union*, 13(1), 17-23. (WoS Citations: 15, ImpactFactor: 0.2).

Other Web of Science (WoS) and Scopus Publications

1. Prasad, A. K., & Singh, R. P. (2007). Changes in Himalayan snow and glacier cover between 1972 and 2000. *Eos, Transactions American Geophysical Union*, 88(33), 326–326. <https://doi.org/10.1029/2007eo330002>.
2. Anup K Prasad, Singh, R. P., Shatrughan Singh, , Dip, & S Nanda. (2007). GPS and satellite meteorology for understanding monsoon dynamics over the Indian sub-continent. <https://doi.org/10.13140/2.1.2548.3203>.
3. " Prasad, A.K., L. Chai, R.P. Singh and M. Kafatos (2005), Effect of the growing population on the air pollution, climatic variability and hydrological regime of the Ganga basin, India, International symposium on regional hydrological impacts of climatic variability and change with an emphasis on less developed countries.
4. Singh, S., Prasad, A.K. (2018). Delineation of Regional Scale Gold Prospective Zones within the North Singhbhum Mobile Belt, Eastern India: An Integrated Approach Through Geospatial Technologies. In: Sarda, N., Acharya, P., Sen, S. (eds) *Geospatial Infrastructure, Applications and Technologies: India Case Studies*. Springer, Singapore. https://doi.org/10.1007/978-981-13-2330-0_30.
5. Prasad, A. K., Singh, R. P., Singh, A., & Kafatos, M. (2005, May). Seasonal variability of aerosol optical depth over Indian subcontinent. In *International Workshop on the Analysis of Multi-Temporal Remote Sensing Images, 2005*. (pp. 35-38). IEEE.

Proceedings and Newsletters

1. Kafatos, M., **A. K. Prasad**, H. M. El-Askary and D. G. Kaskaoutis (2012), Correlation, vertical distribution and column integrated characteristics of aerosols during winter-time dust storms over the Mediterranean region, 26th International Laser Radar Conference (ILRC 26).
2. **Prasad, A.K.**, R.P. Singh, S. Singh and D.S. Nanda (2007), GPS and Satellite Meteorology for Understanding monsoon dynamics over the Indian sub-continent, *IAHS Red Book Series*, 313, 3339. *Citations: 5*.
3. **Prasad, A.K.** and R.P. Singh (2006), Population Dynamics and Increasing Pollution: Its Impact on the Climatic Conditions Over the Indo-Gangetic Basin, *Proceedings of the 6th International Symposium on Advanced Environmental Monitoring*, June 27-30, 2006, Heidelberg, Germany.

4. Chaturvedi, P., **A.K. Prasad** and Singh, R.P. (2006), Comparison of chlorophyll concentration in the Bay of Bengal and the Arabian Sea using IRS-P4 Ocean Color Monitor, and MODIS Aqua, Proceedings ISRS 2006 PORSEC, at Bexco, Busan, Korea, November 2-4.
5. **Prasad, A.K.**, R.P. Singh, A. Singh, and M. Kafatos (2005), Seasonal Variability of Aerosol Optical Depth over Indian Subcontinent, *Analysis of Multi-Temporal Remote Sensing Images, 2005 International Workshop, IEEE*, pp.35- 38. Citations: 6.
6. **Prasad, A.K.** and R.P. Singh (2005), Seasonal, Inter-Annual Variability of Aerosol Optical Depth over the Indo-Gangetic basin and circulation pattern of wind, in *Proceedings of the 4th Asian Aerosol Conference, IASTA Bulletin*, vol. 17 (1 & 2).
7. **Prasad, A.K.**, R.P. Singh, M. Kafatos and A. Singh (2005), Effect of the growing population on the air pollution, climatic variability and hydrological regime of the Ganga basin, India. In: *Regional Hydrological Impacts of Climatic Change-Impact Assessment and Decision Making* (ed. by T. Wagener, S. Franks, H. V. Gupta, E. Boegh, L. Bastidas, C. Nobre & C. D. O. Galvao), IAHS Press, Wallingford, UK., IAHS Publ. 295., 139-146.
8. Singh, R.P., **A.K. Prasad**, S.S. Chauhan, S. Singh (2005), Country Report: Impact of growing urbanization and air pollution on the regional climate over India, *IAUC Newsletter, International Association for Urban Climate*, Issue No. 14, Dec. 2005 (<http://www.urbanclimate.org/IAUC014.pdf>).

Book Chapters

1. **Prasad A.K.**, H. El-Askary, G.R. Asrar, M. Kafatos and A. Jaswal (2011), "Melting of Major Glaciers in Himalayas: role of desert dust and anthropogenic aerosols" In: *Planet Earth 2011 - Global Warming Challenges and Opportunities for Policy and Practice*, InTECH open access publisher. ISBN 978-953-307-733-8. Available from: <http://www.intechopen.com/articles/show/title/melting-of-major-glaciers-in-himalayas-role-of-desert-dust-and-anthropogenic-aerosols>. Citations: 2.
2. El-Askary H., **Prasad A.K.**, Kallos G., El-Raey M., and Kafatos M. (2011), Analyzing Black Cloud Dynamics over Cairo, Nile Delta Region and Alexandria using Aerosols and Water Vapor Data In: *Air Quality - Models and Applications*, InTECH open access publisher ISBN 978-953307-307-1. Citations: 1
3. **Prasad, A.K.**, Mishra, S., Vinod, A., Shukla, A., Purkait, B., Mukherjee, S., Varma, A.K., and Sarkar, B.C. (2025) A novel machine learning approach to rapid estimation of coal quality parameters using mid-infrared FTIR spectroscopy, IN Editors: Sinha, A., Bhabesh Chandra Sarkar, B.C., Mandal, P.K., IN *Springer Proceedings in Earth and Environmental Sciences, Innovative & Responsible Mining for Inclusive Growth - Proceedings, 11th Asian Mining Congress, Kolkata, West Bengal, India, October 30-31, 2025* (accepted).

Book:

1. Prasad, A.K., and Sarkar, B.C. (2024). *Geological, Structural, Geochemical, Hyperspectral, and Geostatistical Modeling for Mineral Exploration*, Minerals, MDPI (Edited). ISSN 2075-163X.

Technical reports:

1. 1. W.A. Sprigg, J.N. Galgiani, S. Nickovic, G. Pejanovic, M. Vujadinovic, A. Vukovic, **A. Prasad**, S. Petkovic, H. El-Askary, R. Gaddi, Z. Janjic, D. Pappagianis, N. Sarafoglou, M. Kafatos, M. Bruck and M.-J. Ferng: *Airborne Dust Models: A Tool in Environmental Health Tracking*; final report, Centers for Disease Control and Prevention - CDC, Atlanta, GA, 180 pp., 2012.

Patents:

1. US Patent number: US7702597 (Granted). Title "Crop Yield Prediction Crop yield prediction using piecewise linear regression with a break point and weather and, agricultural parameters". R. P. Singh, **Anup K Prasad**, Vinod Tare and Menas Kafatos. Date of Issue: Apr 20, 2010. Citations: 36
2. Indian Patent Application: Title: "Multi-model method and system of estimation of **ash yield in coal** using mid-infrared Fourier transform infrared spectroscopy", No. 202431065336, Published 06.09.2024. In the name of Indian Institute of Technology (Indian School of Mines), Dhanbad. Inventors: **Anup Krishna**

Prasad, Sameeksha Mishra, Arya Vinod, Anubhav Shukla, Shailayee Mukherjee, Bitan Purkait, Atul Kumar Varma, Bhabesh Chandra Sarkar.

3. Indian Patent Application: Title: "A method of multi-model estimation of **carbon in coal** using mid-infrared Fourier transform infrared spectroscopy", No. 202431076911, Published 18/10/2024. In the name of Indian Institute of Technology (Indian School of Mines), Dhanbad. Inventors: **Anup Krishna Prasad**, Sameeksha Mishra, Arya Vinod, Anubhav Shukla, Bitan Purkait, Shailayee Mukherjee, Atul Kumar Varma, Bhabesh Chandra Sarkar.
4. Indian Patent Application: Title: "A novel multi-model method of estimation of the **gross calorific value (GCV) in coal** using mid-infrared fourier transform infrared spectroscopy", No. 202531012376, Published 28/02/2025. In the name of Indian Institute of Technology (Indian School of Mines), Dhanbad. Inventors: **Anup Krishna Prasad**, Arya Vinod, Sameeksha Mishra, Bitan Purkait, Anubhav Shukla, Shailayee Mukherjee, Bhabesh Chandra Sarkar, Atul Kumar Varma.
5. Indian Patent Application: Title: "A method for rapid estimation of **phosphorus content in coal and ash** using mid-infrared Fourier transform spectroscopy and application of machine learning techniques", No. 202531033924, Published 11/04/2025. In the name of Indian Institute of Technology (Indian School of Mines), Dhanbad. Inventors: **Anup Krishna Prasad**, Arya Vinod, Sameeksha Mishra, Bitan Purkait, Shailayee Mukherjee, Anubhav Shukla, Nirasindhu Desinayak, Bhabesh Chandra Sarkar, Atul Kumar Varma.
6. Indian Patent Application: Title: "A system and method for the rapid estimation of soil **vanadium content** using mid-infrared FTIR spectral data analysis and a multi-model machine learning framework", No. 202531078724, Published 29/08/2025. In the name of Indian Institute of Technology (Indian School of Mines), Dhanbad. Inventors: **Anup Krishna Prasad**, Rachna Rakesh, Bitan Purkait, Shailayee Mukherjee, Arya Vinod, Sandhya Sonker, Tathastu Das, Ayesha Nayak, Suren Nayak, Nirasindhu Desinayak, Ashish Panda, Ashmeer Mohammad, Bhabesh Chandra Sarkar, Atul Kumar Varma, Akella Satya Venkatesh.
7. Indian Patent Application: Title: "A method and system for the rapid estimation of **chromium content** in soil using mid-infrared FTIR spectral data analysis and a multi-model machine learning framework", No. 202531074870, Published 15/08/2025. In the name of Indian Institute of Technology (Indian School of Mines), Dhanbad. Inventors: **Anup Krishna Prasad**, Bitan Purkait, Shailayee Mukherjee, Arya Vinod, Rachna Rakesh, Ayesha Nayak, Tathastu Das, Sandhya Sonker, Bhabesh Chandra Sarkar, Atul Kumar Varma

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