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Scientist 'E'

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Educational Qualification:	M.Sc(Chemistry), Ph.D(Chemistry)
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Current Scientific Responsibilities:	Looking after Popularisation of Science programmes and Science Communication activities: Chhattisgarh Young Scientist Congress, National Children Science Congress, Western India Science Fair, National Science Seminar, Science Quiz Competition, Science Exhibition, Community Science Club, Popular Science Book Corner, Science Park, Mathematical Olympiad, National Science Day, National Mathematics Day, Mobile Science Lab, Mobile Planetarium, Science and Society Programme
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Research Publication:

1. Joyce Vanisha Das, K. N. Ramachandran and V. K. Gupta. "Extractive spectrophotometric determination of Dimethoate with molybdate and Methylene Blue by a flotation-dissolution method" Analyst (U.K.), 1994; 119: 1387 - 1390
2. J.V. Das, K. N. Ramachandran and V. K. Gupta. "A sensitive spectrophotometric method for the determination of Dimethyl Sulfate (DMS) in the environment" Microchemical Journal (U.S.A.), 1994; 50: 51 - 56.
3. J. V. Das, V. K. Gupta. "A new sensitive extraction and spectrophotometric determination of Pentachlorophenol (PCP) using Crystal Violet" Chemia Analityczna (Poland), 1994; 39: 693 - 698.
4. Joyce Vanisha Das, K. N. Ramachandran and V. K. Gupta. "A spectrophotometric determination of Baygon and Carbaryl in air" Fresenius Journal of Analytical Chemistry (West Germany), 1994; 348: 840 - 841.
5. Joyce Vanisha Das and V. K. Gupta. "A new and sensitive method for the spectrophotometric determination of Ethion in environmental and biological samples" Fresenius Journal of Analytical Chemistry (West Germany), 1995; 352: 395 - 396.

6. J.V. Das and V.K.Gupta. "A sensitive spectrophotometric determination of Zineb (dithiocarbamate fungicide) by the Ethylene Blue method" *ChemiaAnalytyczna* (Poland), 1995; 40: 85 – 92.
7. Joyce Vanisha Das and V.K.Gupta. "Spectrophotometric determination of Atrazine (2-chloro-4-ethylamino-6-isopropylamino-S-triazine) using p-Aminobenzoic acid and its application" *Journal of Indian Chemical Society*, 1995; 72: 765 - 766.
8. J.V. Das and V.K.Gupta. "A new sensitive method for the spectrophotometric determination of Fenthion in environmental and biological samples" *Fresenius Journal of Analytical Chemistry*, 1996; 352(3): 395 - 396, DOI: 10.1007/BF00322241
9. Joyce Vanisha Das and V.K.Gupta. "Extractive spectrophotometric method using crystal violet for the determination of methoxyethyl mercury chloride (fungicide) in environmental and biological samples" *Indian J. Environmental Health* (India), 1997; 39 (4): 265 – 273.
10. M.K.Rai, Joyce Vanisha Das and V.K.Gupta. "A sensitive determination of paraquat by spectrophotometry" *Talanta* (U.S.A.), 1997; 45: 343-348.
11. Joyce Vanisha Das and V. K. Gupta. "A sensitive colorimetric method determination of Ascorbic Acid in food, pharmaceuticals and biological samples" *ChemiaAnalytyczna* (Warsaw), 1998; 43: 85 – 92.
12. M. K. Rai, J.V. Das and V.K.Gupta. "A new solid sorbent system for rapid monitoring of paraquat and diquat" *Intern.J.Envi. Anal. Chem.* (U.K.), 1998; 69 (3): 207 - 215.
13. O. Agrawal, J.V. Das and V.K.Gupta. "Spectrophotometric determination of Isoproturon using p-aminoacetophenone and its application in environmental and biological samples" *Talanta* (U.S.A.), 1998; 46: 501-505.
14. Ritu Kesari, Joyce V. Das and V. K. Gupta. "A new reagent system for the Analysis of carbofuran and its application in environmental samples" *J.IndianChem.Soc.* (India), 1998; 75: 181 - 182.
15. E. K. Janghel, J. K. Rai, M. K. Rai and V.K.Gupta. "New analytical technique for the simultaneous determination of aromatic amines in environmental samples" *Journal of Scientific & Industrial Research* (India), 2005; 64: 594 – 597.
16. E. K. Janghel, J. K. Rai, M. K. Rai and V.K.Gupta. "A New and highly Sensitive Spectrophotometric determination of Monocrotophos in Environmental and Biological Samples" *Journal of Chinese Chemical Society* (China), 2006; 53: 343 – 347.
17. E. K. Janghel, J. K. Rai, M. K. Rai and V.K.Gupta. "A new solid sorbent system for rapid monitoring of nicotine" *Journal of Indian Chemical Society*, 2005; 82 (11): 1032 – 1034.
18. E. K. Janghel, V. K. Gupta, M. K. Rai and J. K. Rai. "Micro determination of ascorbic acid using Methyl Viologen", *Talanta*, 2007; 72 (3): 1013-1016. <https://doi.org/10.1016/j.talanta.2006.12.041>.
19. E. K. Janghel, M. K. Rai, J. K. Rai and V. K. Gupta. "Trace Spectrophotometric Determination of Dichlorvos using Diphenylsemicarbazide (DPC) in

Environmental Samples” Journal of Chinese Chemical Society (China), 2007; 54: 345 – 350.

20. E. K. Janghel, J. K. Rai, M. K. Rai and V.K.Gupta. “A new sensitive spectrophotometric determination of cypermethrin insecticide in environmental and biological Samples” Journal of the Brazillian Chemical Society, (Brazil), 2007; 18:590 – 595.
21. Etesh K. Janghel, J.K. Rai, S. Khan, M. K. Rai and V. K. Gupta. “TLC-spectrophotometric separation and trace determination of monocrotophos and dichlorvos in enviromental and biological samples” Journal of Environmental Health, (India),2007; 49 (2): 133 – 141.
22. V. Patel, M.K. Rai and J. K. Rai. “A new spectrophotometric method for the determination of baygon in environmental and biological sample” Recent Research in Science and Technology, 2013; 5(2): 01 – 03.
23. R. Khatoon, M.K.Rai and J.K. Rai. “Low cost spectrophotometric determination of paraquat in environmental and biological sample” Recent Research in Science and Technology, 2013; 5 (2): 04 – 06.
24. Vindhiya Patel, M. K. Rai, Prashant Mundeja and J.K. Rai. “Sensitive spectrophotometric determination of chloropyriphos in different environmental and biological sample” International Journal of Science and Research, 2014; 3 (7): 1545 – 1550.
25. Khatoon Raisa, K. Rai Manish, Patel Vindhiya and Rai Joyce. “A New Sensitive Spectrophotometric Determination of Butachlor” Journal of Chemical Society of Pakistan, 2015; 36 (6): 1059 - 1063
26. Kalpana Wani, M. K. Rai, Raisa Khatoon and J. K. Rai. “A new spectrophotometric determination of endosulfan and its application” International Journal of Science and Research, 2014; 3 (6): 202 – 205.
27. Mamta Nirmal, M. K. Rai, Vindhiya Patel, J. K. Rai. “A new spectrophotometric method for the determination of isoprothiolane in environmental sample” International Journal of Science and Research, 2014; 3(5): 1820 – 1822.
28. V. Patel, M. K. Rai, R. Khatoon, M. Nirmal and J.K. Rai. “An extractive spectrophotometric method for the determination of propargite in various environmental and biological sample” International Journal for Research in Applied Science and Engineering Technology, 2014; 2 (7): 248 – 253.
29. Mamta Nirmal, Raisa Khatoon, M.K. Rai and J. K. Rai. “Sensitive spectrophotometric determination of deltamethrin using leuco malachite green in environmental samples” Asian Journal of Chemistry, 2016; 28 (4): 703 - 706 .
30. Vindhya Patel, Raisa Khatoon, Mamta Nirmal, Kalpana Wani, Manish Rai and Joyce Rai. “Flotation -Dissolution Based Spectrophotometric Determination of Ethion”, Asian Journal of Chemistry, 2016; 28 (15): 957-959,
31. Prashant Mundeja, Deepak Kumarsahu, Manish Kumar Rai and J. K. Rai. “A selective spectrophotometric determination of metsulfuron methyl with 4-amino azobenzene in various environmental samples” Journal of Applicable Chemistry, 2017; 6: 1130 – 1138.

32. Deepak Kumarsahu, J.K. Rai, Chhayabhatt and M. K. Rai. "UV-Visible Spectrophotometric determination of lambda-cyhalothrin insecticide in vegetables, soil and water samples" Journal of Ravishankar University-B, 2018; 31 (1): 1 – 9.
33. Prashant Mundeja, Kalpana Wani, Deepak Kumarsahu, M. K. Rai and J.K. Rai. "Analytical studies for the determination of dicofol pesticide with p-nitroaniline reagent" International Journal of Research in Chemistry and Environment, 2018; 8 (1): 26 – 30.
34. Rakesh Singh Dhundhel, Jyoti Goswami, M. K. Rai and J. K. Rai. "An extractive method for the determination of pymetrozine in various samples of Bilaspur area" Egyptian Journal of Biological Pest Control, 2019. (**Communicated**)
35. Jyoti Goswami, Chhaya Bhatt, Kalpana Wani, Ajay Kumar Sahu, Deepak Kumar Sahu, Manish Rai, J. K. Rai and Thakur Vikaram Singh. "An extractive spectrophotometric method for the determination of pymetrozine in various ecological samples of Bilaspur District(C.G)" Journal of Ravishankar University Part-B (Science), 2020; 33(1): 1-9.
36. Ajay kumar Sahu, Shraddha Ganesh Pandeya, Vindhya Patela, Raisa Khatoona, Mamta Nirmala, Kalpana Wania. Deepak Kumar Sahu, Chhaya Bhatta, M. K. Rai and J.K. Rai. "A Spectrophotometric Determination of Myclobutanil and Its Application" Journal of Ravishankar University –B, 2019; 31 (1): 27– 31.
37. Harshita Sharma, Chhaya Bhatt, Kalpana Wani, Ajay Kumar Sahu, Jyoti Goswami. Deepak Kumar Sahu, Geetanjali Deshlehre, Sagar Kumar Rajak, Abhishek Nanda, M.K. Rai and J. K. Rai. "Flotation-Dissolution-Spectrophotometric Determination of Phorate in Various Environmental Samples" Journal of Ravishankar University Part-B (Science), 2020; 33(1): 1-3.
38. Chhaya Bhatt, Kalpana Wani, Ajay Kumar Sahu, Jyoti Goswami, Deepak Kumar Sahu, M.K. Rai and J.K. Rai. "Spectrophotometric determination of metribuzin herbicide with Aniline using Various Agricultural and Environmental Sample" International Journal of Agricultural and Environmental Information Systems, 2020. (**Communicated**).
39. Deepak Kumar Sahu, Chhaya Bhatt, J.K. Rai, Manish K. Rai, Ajay Kumar Sahu, Jyoti Goswami, Thakur Vikram Singh, Mamta Nirmal, Kalpana Wani and Prashant Mundeja. "Determination of Fenpyroximate acaricide in vegetables, soil and water samples using UV-Visible spectroscopy" Asian Journal of Chemistry, 2020; 32(8):1991-1995.
40. Deepak Kumar Sahu, J.K. Rai, Manish K. Rai, Mamta Nirmal, Kalpana Wani, Reshma, Manoj Kumar Banjare, Shraddha Ganesh Pandey and Prashant Mundeja. "Detection of Flonicamid Insecticide in Vegetables Samples by UV-Visible Spectrophotometer and FTIR" Research in Chemistry, Elsevier, 2020; 2:100059.
41. Kamlesh Shrivastava, Tushar Kant, Sanyukta Patel, Rama Devi, Nohar Singh Dahariya, Shams Pervez, Manas Kanti Deb, Manish K. Rai, and Joyce Rai. "Inkjet-printed paper-based colorimetric sensor coupled with smartphone for determination of mercury (Hg²⁺)." Journal of Hazardous Materials, 2021; 414:125440.

Awards:

1. **Award of Senior Research Fellowship**, Council of Scientific and Industrial Research, New Delhi-20th July 1995 - July 1997.
2. **Young Scientist Award** at the 13th Annual Indian Council of Chemist, University of Jammu -October 24-26, 1994 for best Research paper presentation on 'A sensitive spectrophotometric determination of Zineb (a dithiocarbamate fungicide) by the Ethylene Blue method', Abstr. No. Anal. Ao-3.10.
3. **Young Scientist Award** at XIth M.P. Young Scientist Congress (M. P Council of Science and Technology, Bhopal) at Rani Durgawati University, Jabalpur-February 28th to March 1st1996 for best Research paper presentation on 'A highly sensitive spectrophotometric method for the microdetermination of Fenthion in environmental and biological samples', Abstr. No. Chem.CH-20.