

RAVINDRA SINGH THAKUR

(PhD: Chemical Sciences)

(POSTDOCTORAL SCHOLAR)

THE OHIO STATE UNIVERSITY,
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EDUCATION

PhD Chemical Sciences,	2016-2023
Academy of Scientific and Innovative Research, Ghaziabad (U.P.), India, CSIR-Indian Institute of Toxicology Research, Lucknow (U.P.), India, “Screening of Environmental Contaminants in Water & Food, and Metabolic Perturbation in <i>Danio Rerio</i> after Exposure to Atrazine and Chloramphenicol” Supervisor: Dr. Devendra K Patel	
MSc Forensic Science,	2014-2016
Dr. Harisingh Gour University, Sagar (M.P.), India “Assessment of adverse health effects in pesticide exposed agricultural workers” Supervisor: Dr. Rajesh S Yadav	
BSc Chemistry, Physics, Forensic Science,	2011-2014
Dr. Harisingh Gour University, Sagar (M.P.), India	

HONORS AND AWARDS

Best Poster Award	2016
National Seminar on Role of Forensic Science in Disaster Victim Identification in Indian Perspective , Bundelkhand University, Jhansi	
Junior Research Fellowship	2016-2018
University Grants Commission, Ministry of Human Resource Development, GOI UGC-NET, Forensic Science (UGC-Ref. No.: 3291/(OBC) (NET-JUNE 2015)	
Senior Research Fellowship	2018-2021
University Grants Commission, Ministry of Human Resource Development, GOI UGC-NET, Forensic Science (UGC-Ref. No.: 3291/(OBC) (NET-JUNE 2015)	
Postdoctoral Fellowship	2023-Present
The Ohio State University, Columbus, Ohio, USA	

PROJECTS

Smoking Machine Adaptor Design Project for ENDS, Cigars, and Heated Tobacco Products (UC2)	
Funding: FDA CTP (UC2FD007229)	2023-Present
(Postdoctoral Scholar; MPI: Brinkman M. C./Wagener T. L.)	
Comprehensive Chemical Characterization of Oral Nicotine Pouches	
Funding: NIH TCORS (TCORS Center: The Ohio State University)	
The Ohio State University Tobacco Center of Regulatory Science (OSU-TCORS)	2024-Present
(Principal Investigator; PI: Thakur R. S.)	

RESEARCH EXPERIENCE

The Ohio State University, Columbus, Ohio, USA	2023-Present
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Post Doctoral Scholar, Public Health/ Division of Epidemiology

CSIR-Indian Institute of Toxicology Research, Lucknow (U.P.), India
Senior Research Fellow, Analytical Chemistry Laboratory,
Regulatory Toxicology Group

2018 to 2021

CSIR-Indian Institute of Toxicology Research, Lucknow (U.P.), India
Junior Research Fellow, Analytical Chemistry Laboratory,
Regulatory Toxicology Group

2016 to 2018

SKILLS

- Targeted and untargeted analysis of xenobiotics, Metabolomics
- AAS, ICP-MS, Mass Spectrometry, Liquid & Gas Chromatography techniques (HPLC, GC, LC-MS/MS, GC-MS/MS, LC-HRMS)
- LLE, SPE, Soxhlet, QuEChERS, ASE, DLLME and other Microextraction
- Method development & validation, Instrument handling & calibration
- MS office, Google sheets, Data analysis and Statistical Software (SPSS and Statistica and Google data studio)

TEACHING EXPERIENCE

Teerthanker Mahaveer University, Moradabad (U.P.), India
Assistant Professor, Department of Forensic Science

Sep-2022 to Sep-2023

NITTE (Deemed to be University), Mangalore, India
Guest Faculty, NITTE University Centre for Science Education & Research

Oct 2021 to Jan 2022

PUBLICATIONS

Journal Publications

Misra, U. K., Sarkar, G. G., Upadhyaya, V., Bhatt, A., Tripathi, A., & **Thakur, R. S.** (2023). Acute Colonic Pseudo-obstruction (Ogilvie's Syndrome) in Thalamic Hemorrhage. *Journal of Comprehensive Clinical Practice*, 17(2), 42-44.

Garg, R., Mahato, H., Choudhury, U., **Thakur, R. S.**, Debnath, P., Ansari, N. G., Sane, V. A. & Sane, A. P. (2023). The tomato EAR-motif repressor, SIERF36, accelerates growth transitions and reduces plant life cycle by regulating GA levels and responses. *Plant Biotechnology Journal*, 22(4), 848-862.

Gaur, V. K., Tripathi, V., Gupta, P., **Thakur, R. S.**, Kaur, I., Regar, R. K., Srivastava, P.K. & Manickam, N. (2023). Holistic approach to waste mobil oil bioremediation: Valorizing waste through biosurfactant production for soil restoration. *Journal of Environmental Management*, 348, 119207.

Singh, S., **Thakur, R. S.**, & Manickam, N. (2023). Insights into molecular mechanism of plasticizer biodegradation in *Dietzia kunjamensis* IITR165 and *Brucella intermedia* IITR166 isolated from a solid waste dumpsite. *Journal of Applied Microbiology*, 1xad231.

Saini, S., Rani, L., Shukla, N., **Thakur, R. S.**, Patel, D. K., Ansari, M. S., Banerjee, M. & Gautam, N. K. (2023). Hsp27 over expression protect against cadmium induced nephrotoxicity in *Drosophila melanogaster*. *Comparative Biochemistry and Physiology Part C: Toxicology & Pharmacology*, 109716.

Tripathi, V., Gaur, V. K., **Thakur, R. S.**, Patel, D. K., & Manickam, N. (2023). Assessing the half-life and degradation kinetics of aliphatic and aromatic hydrocarbons by bacteria isolated from crude oil contaminated soil. *Chemosphere*, 139264.

- Gupta, N., **Thakur, R. S.**, & Patel, D. K. (2023). Detection, quantification and degradation kinetic for five benzodiazepines using VAUS-ME-SFO/LC-MS/MS method for water, alcoholic and non-alcoholic beverages. *Talanta*, 124572.
- Kanwar, N., **Thakur, R. S.**, Saran, R. P., & Purohit, A. (2023). Contraceptive efficacy and antioxidant potential of *Leptadenia reticulata* bark extracts in male albino rats. *Journal of Experimental Biology and Agricultural Sciences*, 11(2), 359–370.
- Moin, N., **Thakur, R. S.**, Singh, S., Patel, D. K., & Satish, A. (2023). β -triketone herbicide exposure cause tyrosine and fat accumulation in *Caenorhabditis elegans*. *Chemosphere*, 138353.
- Kalita, J., Tripathi, A., Jadhav, M., **Thakur, R. S.**, & Patel, D. K. (2023). “A Study of Dopaminergic Pathway in Neurologic Wilson Disease with Movement Disorder”. *Molecular Neurobiology*, 1-11.
- Regar, R. K., Singh, D., Gaur, V. K., **Thakur, R. S.**, & Manickam, N. (2023). “Functional genomic analysis of an efficient indole degrading bacteria strain *Alcaligenes faecalis* ITR89 and its biodegradation characteristics”. *Environmental Science and Pollution Research*, 1-12.
- Singh, I., **Thakur, R. S.**, Shukla, Y., & Patel, D. K. (2023). “Quantification of Bisphenol A in Swiss albino mice following topical exposure”. *Journal of Hazardous Materials Advances*, 9, 100207.
- Kumar, A., Das, T., **Thakur, R. S.**, Fatima, Z., Prasad, S., Ansari, N. G., & Patel, D. K. (2022). “Synthesis of Biomass-Derived Activated Carbons and Their Immobilization on Alginate Gels for the Simultaneous Removal of Cr (VI), Cd (II), Pb (II), As (III), and Hg (II) from Water”. *ACS omega*, 7(46), 41997-42011.
- Rani, L., Saini, S., **Thakur, R.S.**, Patel, D.K., Chowdhuri, D.K. and Gautam, N.K. (2022). “Single and combined effect of Bisphenol A with high sucrose diet on the diabetic and renal tubular dysfunction phenotypes in *Drosophila melanogaster*”. *Environmental Toxicology and Pharmacology*, p.103977.
- Yadav, P., Singh, R., Gupta, N., Kumar, S., **Thakur, R. S.**, Khan, A. H., Ansari N. G. & Patel, D. K. (2022). “Modified DLLME-SFO approach for evaluation of multiclass agrochemicals and its associated risk assessment: Soil, *Saccharum officinarum* and Jaggery”. *Food Chemistry Advances*, 100032.
- Kushwaha, A. S., **Thakur, R. S.**, Patel, D. K. & Kumar, M. (2022). “Impact of arsenic on phosphate solubilization, acquisition and poly-phosphate accumulation in endophytic fungus *Serendipita indica*”. *Microbiological Research*, 259: 127014.
- Gupta, N., **Thakur, R. S.**, Kumar, S., Satyanarayana, G. N. V., Yadav, P., Tripathi, S., Ansari N. G. & Patel, D. K. (2022). “Modified DLLME–GC-TQMS determination of pesticide residues in Gomti River, Lucknow, India: ecological risk assessment and multivariate statistical approach”. *Environmental Science and Pollution Research*, 1-18.
- Lugun, O., Singh, J., **Thakur, R. S.**, & Pandey, A. K. (2022). “Cobalt oxide (Co₃O₄) nanoparticles induced genotoxicity in Chinese hamster lung fibroblast (V79) cells through modulation of reactive oxygen species”. *Mutagenesis*, geac005.
- Gaur, V. K., Gupta, P., Tripathi, V., **Thakur, R. S.**, Regar, R. K., Patel, D. K., & Manickam, N. (2022). “Valorization of agro-industrial waste for rhamnolipid production, its role in crude oil solubilization and resensitizing bacterial pathogens”. *Environmental Technology & Innovation*, 25: 102108.
- Thakur, R. S.**, Kumar, A., Lugun, O., Ansari, N. G., Prasad, S., Das, T., Gupta, N. & Patel, D. K. (2021). “Evaluation of heavy metal contaminants in prepared noodles: source allocation and health risk assessment”. *Environmental Science and Pollution Research*, 1-12.

Verma J., Jha R. R., Gupta N., **Thakur R. S.**, Ansari N. G., Patel D. K. (2021). “QuEChERS based analysis of multiple pesticides and phthalates in packaged food products”. *Microchemical Journal*, 171:106882.

Raj A., Yadav A., Arya S., Kumar S., Rawat A. P., **Thakur R. S.**, Patel D. K., Bahadur L, Pandey A. (2021). “Preparation, characterization and agri applications of biochar produced by pyrolysis of sewage sludge at different temperatures”. *Science of The Total Environment*, 795: 148722.

Tripathi A, **Thakur R. S.**, Kalita J., Patel D. K., Misra U.K. (2021). “Is Cerebral salt wasting related to sympathetic dysregulation in Tuberculous meningitis?” *Neuroscience Letters*, 747:135671.

Nagar Y., **Thakur R. S.**, Parveen T., Patel D. K., Ram K. P., Satish A. (2020). “Toxicity assessment of parabens in *Caenorhabditis elegans*”. *Chemosphere*, 246: 125730.

Kori R. K., **Thakur R. S.**, Kumar R, Yadav R. S. (2018). “Assessment of Adverse Health Effects Among Chronic Pesticide-Exposed Farm Workers in Sagar District of Madhya Pradesh, India”. *International Journal of Nutrition, Pharmacology, Neurological Diseases*, 8(4), 153.

Asati A., Satyanarayana G.N.V., Panchal S., **Thakur R. S.**, Patel D. K. (2017). “Ionic liquid-based vortex assisted liquid–liquid microextraction combined with liquid chromatography mass spectrometry for the determination of bisphenols in thermal papers with the aid of response surface methodology”. *Journal of Chromatography A*, 1509, 35–42.

Book Chapters

Jha R. R., **Thakur R. S.**, Jain R. “Dispersive Liquid-Liquid Microextraction and its variants”, CRC Press, 2021, 1.

आदित्य कुमार, रविन्द्र सिंह ठाकुर, त्रिपर्णा दास एवं देवेन्द्र कुमार पटेल “पॉलीसाईक्लिक एरोमैटिक हाइड्रोकार्बन की विषाक्तता एवं विश्लेषण”, *विषविज्ञान संदेश*, 2020, 33, 36-40.

नित्या दुबे, रविन्द्र सिंह ठाकुर एवं देवेन्द्र कुमार पटेल “पौधों पर भारी धातुओं के प्रभाव”, *विषविज्ञान संदेश*, 2019, 31, 47-50.

रविन्द्र सिंह ठाकुर, एवं देवेन्द्र कुमार पटेल “फल पकाने वाले रसायनों की विषाक्तता”, *विषविज्ञान अनुसंधान के नये आयाम*, 2018, 1, 103-109.

Conference Proceedings

(Oral Presentation)

Thakur R. S., Wilson C. W., Adeniji A., Fleshman C., Sloan R., Mehta T., Tackett A. P., Roberts M., Hellani A., Wagener T. L., Brinkman M. C. “Young users titrate their nicotine intake from nicotine salt e-cigarettes to obtain cigarette-like levels”, the Society for Research on Nicotine & Tobacco (SRNT) 2024 Annual Meeting, held at Edinburgh International Conference Center in Edinburgh, Scotland from 20th to 23rd March 2024.

Thakur R. S., Satyanarayana G.N.V., Kumar A., Srivastava P., Patel D. K. “Analysis of xenobiotics residue in different matrices using gas chromatography - tandem mass spectrometry”, *International Conference on Chemical Sciences: National and Global Prospective*, held at Lucknow Christian College, Lucknow from 29th to 31st October 2018.

Thakur R. S., Asati A., Nagar Y., Satyanarayana G.N.V., Satish A., Patel D. K. “Microextraction based approach for analysis of Parabens using Design of experiment”, National Seminar on Paradigm Shift in chemical sciences, held at Lucknow Christian College, Lucknow from 8th to 9th November 2017.

Thakur R. S., Asati A., Patel D. K. “Analytical Approaches to Determine Geographical Sources of Illicit Drugs”, National Conference on Forensic science at the service of Mankind, held at Lucknow University, Lucknow from 23rd to 24th March 2017.

(Poster Presentation / Abstract)

Thakur R. S., Wilson C. W., Hellani A., Fleshman C., Wagener T. L., Brinkman M. C. “The impact of sugar profile on furan emissions from hookah”, the Society for Research on Nicotine & Tobacco (SRNT) 2024 Annual Meeting, held at Edinburgh International Conference Center in Edinburgh, Scotland from 20th to 23rd March 2024.

Gaur, V.K., Gupta, P., Tripathi, V., **Thakur, R. S.**, Manickam, N. “Waste derived biosurfactant production from *Planococcus okeanokoites* IITR52 and its bactericidal potential against gastrointestinal and oral pathogens”, International Conference on Biotechnology for Sustainable Agriculture, Environment and Health (BSAEH-2021) held at Jaipur Rajasthan, India from 4th to 8th April 2021.

Tripathi V., Gaur V. K., **Thakur R. S.**, Manickam N. “Biodesulfurization of dibenzothiophene and simultaneous production of biosurfactant from a bacterial strain IITR112” Microbial World: Recent Developments in Health, Agriculture and Environmental Sciences being organized jointly by The Energy and resources Institute, held at University of Delhi and IARI under the aegis of Association of Microbiologists of India and Indian Network for Soil Contamination and Research from 3rd to 5th February, 2021.

Thakur R. S., Kumar A., Das T., Prasad S., Patel D. K. “Health risk assessment of instant noodles commonly consumed in Lucknow, India”, AcSIR Gyantarang 2020, held at CSIR-NEIST, Jorhat from 23rd to 25th January 2020.

Kumar A., **Thakur R. S.**, Das T., Patel D. K. “Analysis of Polycyclic Aromatic Hydrocarbons in instant noodles from streets of Lucknow and its health risk assessment”, 5th International Toxicology Conclave, held at CSIR-IITR, Lucknow from 5th to 6th December 2019.

Kumar R., **Thakur R. S.**, Kori R. K., Yadav R. S. “Adverse health effect of pesticides in exposed individuals”, National Conference on Future perspective of Forensic Science in India, held at Bundelkhand University, Jhansi from 9th to 10th March 2017.

Thakur R. S. “DNA: An Inevitable Tool in Mass Disaster Investigation”, National Seminar on Role of Forensic Science in Disaster Victim Identification in Indian Perspective, held at Bundelkhand University, Jhansi from 18th to 19th March 2016.

Thakur R. S., Vinayak V., Joshi K. B. “Gold Nanoparticles: Implementation in Optical Sensing and Cancer Diagnosis”, National Symposium on Horizons of Light in Molecules, Materials and Daily Life, held at DHSGU Sagar, from 18th to 19th December 2015.

Thakur R. S., Kumar R., Kori R. K., Yadav R. S. “Assessment of adverse health effects in pesticide exposed Agricultural workers: A questionnaire based study”, 35th Annual Conference of Society of Toxicology (India) 2015 Challenges and Opportunities in Toxicology Research, Education and Product Safety Assessments, held at Hyderabad from 19th to 21st November 2015.

INVITED LECTURES

Virtual Workshop, “Instrumental Techniques: A Reflection of the Multi-disciplinary Nature of Forensics” organized by Government Holkar Science College, Indore (M.P.) on 3rd to 10th October 2022.

Institution’s Innovation Council (MHRD Initiative), “Recent Advancements in Liquid Chromatography” organized by Teerthanker Mahaveer University, Moradabad (U.P.) on 15th June 2021.

National Online Lecture Series, “New Technology and Instrumentation in Criminalistics” organized by Government Holkar Science College, Indore (M.P.) on 23rd to 26th April 2020.

PEER REVIEWER

Bioresource Technology, Elsevier, *ISSN: 0960-8524*

Food Chemistry Advances, Elsevier, *ISSN: 2772-753X*

PROFESSIONAL TRAINING

Seminar or Workshop

Workshop on Importance of NABL Accreditation in Laboratory Management System of Testing Laboratories held at CSIR-IITR, Lucknow on 27th February 2023.

Faculty Development Program on ICT training organized at Teerthanker Mahaveer University, Moradabad on 25th February 2023.

Faculty Development Program on Management of Stress at OSL for Higher Proficiency organized at Teerthanker Mahaveer University, Moradabad on 29th October 2022.

Faculty Development Program on Concepts and Implementation of Outcome Based Education organized at Teerthanker Mahaveer University, Moradabad on 14th to 15th September 2022.

Refresher Course on ISO/IEC 17025:2017 General Requirements for the Competence of Testing & Calibration Laboratories organized at CSIR-IITR, Lucknow on 4th July 2022.

Workshop on Creating Effective Dashboards conducted by Mr. Jatan Shah (Microsoft Certified Trainer), on 6th to 11th April 2021.

Advanced Excel Workshop conducted by Mr. Jatan Shah (Microsoft Certified Trainer), on 4th April 2021.

Training course on Quality Management System for Research and Regulatory Laboratories held at CSIR-IITR, Lucknow on 22nd February 2021.

Training Workshop on Metabolomics by Mass Spectrometry: A Basic course held at C-CAMP, Bangalore from 31st July to 2nd August 2019.

Training Workshop on Intensive hands-on workshop on Fundamentals of Mass Spectrometry-based Metabolomics held at Yenepoya University, Mangalore from 18th to 20th September 2017.

Science and Technology Sensitization Program held at CSIR-NBRI, Lucknow from 27th to 28th October 2017.

Author Workshop on 26th July 2017 held at Tagore Library, Lucknow University, Lucknow organized by Springer Nature.

Training Workshop on Understanding Gender held at DHSGU, Sagar from 28th to 29th January 2016.

Attended training program on Advances in PCR Techniques and its application from 29th to 31st October 2015 at CEBT, MPCST Bhopal.

Global Initiative of Academic Networks (GIAN) Courses,

Substance of Abuse: Pre and Postnatal Exposure: Pharmacological Effects and Analytical Methods of Detection held at DHSGU, Sagar from 5th to 11th September 2016.

Chemometrics and Liquid Chromatographic Method Development held at DHSGU, Sagar from 6th to 11th June 2016

Cancer Biology held at DHSGU, Sagar from 31st January to 5th February 2016.

PROFESSIONAL AFFILIATIONS

Lifetime member, Forensic Science Development Society, (LT/53), India.

Member, Tobacco Regulatory Science, Bethesda, Maryland, USA.

Member, Best Practices (originally Benchmarking and Publications) for Non-Targeted Analysis (BP4NTA) working group.

Student/Trainee Member, Society for Research on Nicotine & Tobacco, Madison, Wisconsin, USA.

Member, Gender Champions 2015-2016 at Dr. Harisingh Gour Central University, Sagar (M.P.), India.

Sessional Member, The Indian Science Congress Association 2015-2016 (Membership No.: SLM1654), India.