

MUKESH KUMAR SINGH

Scientist (OPCW)

Institute of Pesticide Formulation Technology
Sec-20, On NH-8, Udyog Vihar, Gurugram, Haryana,

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PERSONAL: Male; Married; Indian National; Born 09 August 1981



ACADEMIC QUALIFICATION:

| | | | |
|---------------------------------------|------|-------------------------------|------------------------------|
| Intermediate | 1999 | (BIEC Patna) | First Class (67% Marks) |
| B.Sc (Honours) Chemistry | 2002 | (LNMU Darbhanga) | First Class (65% Marks) |
| M.Sc. Agrochemical & Pest Management. | 2007 | (Delhi University) | First Class (60% Marks) |
| Ph.D(Chemistry) | 2013 | (Kolhan University, Chaibasa) | Registered but not completed |

PROFESSIONAL EXPERIENCE

Research experiences:-14 years

Teaching experience: 4 years

- Teaching Post graduate diploma in analytical chemistry programme (PGDAC) as an Academic Counselor at IGNOU from March 2015 to December 2019.

JOB EXPERIENCE:

- **Scientist**, Organization for the Prohibition of Chemical Weapons (OPCW) at Institute of Pesticide Formulation Technology, Gurugram, Department of Chemicals & Petro-Chemicals, **Ministry of Chemicals and Fertilizers**, Government of India, from 2nd March 2012 to till date.
- Worked as a **Research Associate (RA)** in Ministry of Agriculture and Corporation funded project entitled “**Monitoring of pesticide residue at a national level**” at Division of Agricultural Chemicals, Indian Agricultural Research Institute, New Delhi, India from 12th August 2011 to 1st March 2012.
- Worked as a **Senior Research Fellow (SRF)** in Ministry of Chemicals and Fertilizer sponsored project entitled “**Studies on pesticide formulation from Basil and Turmeric oil for household and Agricultural purposes**” at Institute of Pesticide Formulation Technology, Gurugram, Haryana, India from 11th June 2010 to 11th Aug 2011
- Worked as a **Junior Research Fellow (JRF)** in DBT funded project entitled “**Chemo-enzymatic synthesis of environmental friendly amphiphilic co-polymer for the crop**”

protection”

at Division of Agricultural Chemicals, Indian Agricultural Research Institute, New Delhi , India from 2nd Feb 09 to 14th May 2010

- Worked as an **R&D Scientific Officer** (Organic Synthesis and Analytical Development) at **Bharat Rasayan Limited**, 2 km, Stone, Madina Mokhra Road, Mokhra, Maham (Rohtak, Haryana) India from 13th August 2007 to 31st December 2008.

PUBLICATION:

1. N. A. Shakil, Manish K. Singh, Jitendra Kumar, M. Sathiyendiran, Gaurav Kumar, **Mukesh K. Singh**, Ravi Prakash Pandey, Alka Pandey, V. S. Parmar.(**2010**) Microwave synthesis and antifungal evaluations of some chalcones and their derived diaryl-cyclohexenones. *Journal of Environment Science and Health, Part B*, 45: 6, 524 - 530.
2. Jitendra kumar, Najam A. Shakil, Manish K. Singh, Pankaj, **Mukesh K. Singh**, Alka Pandey, Ravi P. Pandey.(**2010**) Development of controlled release formulations of Azadirachtin-A employing poly (ethylene glycol) based amphiphilic co-polymers *Journal of Environment Science and Health, Part B*, 45: 4, 310 - 314.
3. Najam A Shakil, Alka Pandey, Manish K. Singh, Jitendra Kumar, Satish K. Awasthi, Pankaj, Chitra Srivastava, **Mukesh K. Singh** and Ravi P. Pandey.(**2010**) Synthesis and bioefficacy evaluation of new 3-substituted-3,4-dihydro-1,3-benzoxazines. *Journal of Environmental Sciences and Health, Part B*, 45: 2, 108 - 115.
4. Najam Akhtar Shakil, **Mukesh K. Singh**, Alka Pandey, Jitendra Kumar, Pankaj, Virinder S. Parmar, Manish K. Singh, Ravi P. Pandey and Arthur C. Watterson. (**2010**) Development of Poly (ethylene glycol) based Amphiphilic copolymers for controlled release delivery of Carbofuran. *Journal of Macromol. Sci., Pure & Appl. Chem., Part A*, 47:3, 241 – 247.
5. Pankaj, Najam Akhtar Shakil, Jitendra Kumar, **Mukesh K. Singh** and Khajan Singh. (**2012**) Bioefficacy evaluation of controlled release formulations based on amphiphilic nano-polymer of carbofuran against *Meloidogyne incognita* infecting Tomato. *Journal of Environmental Sciences and Health, Part B*, 47:6, 520-528.
6. Prasant kaushik, Najam Akhtar Shakil, Jitendra kumar, **Mukesh K. Singh**, Manish K. Singh and Shiv kumar Yadav. (**2012**) Development of controlled release formulation of Thiram employing amphiphilic polymer and their bioefficacy evaluation in seed quality enhancement studies. *Journal of Environmental Sciences and Health Part B*, 48:8, 677-685.
7. L. K. Thakur, Sunita Roy, Rajmani Prajapati, **Mukesh K. Singh** S. K. Raza, B. D. Mangave, Alka Singh and Sanjay Jha. (**2014**) Development and evaluation of environmental user Friendly Turmeric oil Emulsifiable concentrate formulations for

post harvest quality and life in Rose Cv. poison. *International Journal of Recent Scientific Research*, 5:1, 178-185.

8. L. K. Thakur, Sunita Roy, Rajmani Prajapati, **Mukesh K. Singh**, S. K. Raza. (2014) Development and evaluation of Basil oil Emulsifiable concentrate *African Journal of Science and Research*, 3:1, 06-09.
9. L .K. Thakur, **Mukesh K. Singh**, Kuldeep Ravivanshi, Savita Yadav, S. K. Raza. (2014) Solubilization of Eugenol and Methyl eugenol in single and mixed micellar solution and their evaluation. *Journal of Multidisciplinary Scientific Research*, 2: 4, 04-08.
10. K. K. Krishnani, V. Kathiravan, N. A. Shakil, Manish Kumar Singh, M. P. Brahmane, K. K. Meena, Biplab Sarkar, K. Choudhary, **Mukesh Kumar Singh**, Jitendra Kumar.(2015) Bactericidal activity of Nanopolymers against shrimp pathogenic bacterium *Vibrio harveyi*, *Proc. National Academy of Sciences India, Section B, Biological Science* .
11. Sudeep Mishra, Mahesh K Saini, **M.K. Singh**, S. Alam, L. K. Thakur, S. K. Raza, Shibendhu Mukharjee.(2015) Method development and validation for identification of 2-phenyl phenol in Ciapton 10L by GC –MS. *World Journal of Pharmacy and Pharmaceutical Sciences*, 4 : 12, 783-789.
12. Sudeep Mishra, Vinod Deotale, Mangesh Pandey, Mahesh K Saini, **M.K. Singh**, S. Alam , B. S. Sehrawat, L. K. Thakur, S.K.Raza.(2016) GC-MS Analysis of multiclass pesticide residue found in farmland water of Haryana districts, *World Journal of Pharmaceutical Research*, 5 :8 744-752.
13. Sudeep Mishra, Vinod Deotale, Mahesh K Saini, **M.K. Singh**, Mangesh Pandey , S. Alam, L. K. Thakur, B. S. Sehrawat, S. K. Raza.(2017) Monitoring of multiclass pesticide residues in farmland soil from different district of Haryana by GC-MS. *Agriculture Research Journal*, 54 :1 47-52
14. Sudeep mishra, Neelam Richhariya, Akriti agarwal, Lalitesh k. Thakur, **Mukesh k. Singh**, Rachana Rani (2017) Method Validation for Determination of 23 Organophosphorus Pesticide Residues In Chilli By Gas Chromatography. *World Journal of Pharmaceutical Research*, 6:6 1183-1197.
15. Ranju Sharma, Arpana kumari, Ngangbam Sarat Singh, **Mukesh Kumar Singh**, Saurabh Dubey, Nusrat Iqbal, P.K.Patanjali (2019) Development and stability enhancement of neem oil based microemulsion formulation using botanical synergist, *Journal of Molecular Liquids*, 296, 112012.
16. Sudeep Mishra, **Mukesh K Singh**, Mahesh K Saini, Vikash, Samsul Alam, B S Sehrawat and Lalitesh K Thakur,(2019) Pesticide Residues in Vegetable, Soil and Water Samples Collected from Some Districts of Haryana, *Agriculture Research Journal*, 56 (2), 261-266.
17. Sudeep Mishra, Mahesh K Saini, **Mukesh K Singh**, Samsul Alam, Lalitesh K Thakur, Jitendra Kumar,(2021) Residual and health risk assessment of pesticides in commonly consumed vegetables of Panipat, Haryana, India *International Journal of Pharm Tech Research*, 14(1), 74-89.

18. Sudeep Mishra, Samsul Alam*, Mahesh Kumar Saini, **Mukesh Kumar Singh**, Akriti Agarwal and Lalitesh Kumar Thakur, Persistence behaviour of fipronil 80%WG on grapes. Agricultural Research Journal, PAU 58(2),340-343, April 2021
19. Sudeep Mishra, **Mukesh K. Singh**, Mahesh K. Saini, Mangesh A. Pande, Vinod D. Doetale, Samsul Alam, Vivek Ahluwalia, B. S. Sherawat, Lalitesh K. Thakur, Evaluation of Pesticide Residues in Vegetables from the Eight Districts of Haryana State (Northern India), International Journal of Agricultural Sciences and Veterinary Medicine 2021, Vol 9,28
20. **Sudeep Mishra**, Mahesh K Saini, **Mukesh K Singh**, Samsul Alam, Lalitesh K Thakur, Jitendra Kumar, Residual Contamination of Pesticides in Irrigation Water of Some of the Districts of Haryana, India, International Journal of Agricultural Sciences and Veterinary Medicine 2022,10(1),1-7
21. **Sudeep Mishra**, Mahesh K Saini, **Mukesh K Singh**, Samsul Alam, Lalitesh K Thakur, Jitendra Kumar, “Monitoring of pesticide residue in soil samples from agricultural field of Haryana, India,” , International Journal of Agricultural Sciences and Veterinary Medicine 2022,10(2),1
22. Smirti Kala, Chetan Jawle, Mukesh kumar, Nisha Sogan ,Himmat Singh, Gaurav Shukla, Amrisha Agrawal, L. Thakur, Jitendra Kumar “Pomegranate Resembling Design of Starch Sago Beads Encapsulated Nano Pyriproxifen ,Enabling Slow Release and Improved Bioactivity” Journal of ACS Applied Materials And Interfaces (Accepted)
23. **Sudeep Mishra**, Mahesh K Saini, Mukesh K Singh, Samsul Alam, Lalitesh K Thakur, Jitendra Kumar, “Seasonal Status of Pesticides Residue in Irrigation Water of Some Districts of Haryana, India Journal of Water Research.(Communicated)

ABSTRACT AND PAPER PRESENTATION:

- Najam Akhtar Shakil, Jitendra Kumar, **Mukesh K. Singh**, Alka Pandey, Manish Kumar Singh, Ravi Kumar Pandey, Pankaj and A. K. Dikshit. Nanoscience for ensuring food security: development of amphiphilic nanopolymers for controlled release delivery of pesticides. Poster presentation in International Conference on Materials for the Millennium Matcon- 11th-13th January 2010 at Kochi, Kerala, India.
- L.K.Thakur, **Mukesh K. Singh**, Kuldeep Ravivanshi and Savita Yadav. Solubilization of some insect attractants in single and mixed micellar solution and their physico-chemicals studies poster presentation in 15th ISCB International Conference 4th -7th February 2011 at Rajkot, Gujarat, India.
- L.K.Thakur, Sunita Roy and **Mukesh K. Singh** Development of Environmental Friendly Emulsifiable concentrate from Basil Oil and its physio chemicals studies poster presentation in 15th ISCB International Conference , 4th -7th February 2011 at Rajkot, Gujarat, India

- L.K.Thakur, Sunita Roy and **Mukesh K. Singh** Development of Environmental Friendly Emulsifiable concentrate from Turmeric oil and its physio chemical studies poster presentation in 3rd ISC International Conference 11th - 15th June 2011 at Bangkok
- L.K.Thakur, Najam Akhtar Shakil, **Mukesh K. Singh**. Antifungal evaluation of water based microemulsion of Eugenol and Methyl Eugenol against *Rhizoctonia solani* and *Sclerotium rolfsii* poster presentation in IUPAC Sponsored 2nd International Conference on Agrochemicals protecting crops health and natural environment role of chemistry and sustainable agriculture 15th-18th Feb 2012 at IARI, New Delhi-12, India
- **Mukesh Kr. Singh**, Manish kr. Singh, N. A. Shakil, Jitendra Kumar and Shiv Kr. Yadav. Effect of nanoencapsulated Thiram on seed quality enhancement of soybean seed poster presentation in IUPAC Sponsored 2nd International Conference on Agrochemicals protecting crops health and natural environment role of chemistry and sustainable agriculture 15th-18th Feb 2012 at IARI, New Delhi-12, India.
- Prashant Kaushik, N. A. Shakil, Jitendra Kumar and **M. K. Singh** functionalized amphiphilic polymers of potential pesticide delivery system of Thiram poster presentation in IUPAC Sponsored 2nd International Conference on Agrochemicals protecting crops health and natural environment role of chemistry and sustainable agriculture 15th-18th Feb 2012 at IARI, New Delhi-12,India
- **Mukesh K. Singh**, Sudeep Mishra, Ompal Singh, L. K. Thakur and S. K. Raza. Analysis of pesticide residue in water from different sources in Delhi and NCR region 7th-9th December, 2012 at BCKV Kalyani, Kolkata, India
- S. Mishra, M. K. Saini, V. D. Deotale, **M. K. Singh**, M. Pande, S. Alam, L. K. Thakur, S. K. Raza and S. B. Sehrawat. Monitoring of multiclass pesticide in farmland soil from different district of Haryana by Gas chromatography mass spectroscopy, National Conference on Green Technique, 11-12 July, 2014 at Department of chemistry Mewar University Chittorgardh , Rajsthan, India
- **M. K. Singh** N. A. Shakil, S. K. Raza, L. K. Thakur. Antifungal evaluation of water based insect attractant microemulsions against *R.solani* and *S.rolfsii* December 15-17th, December, 2014. in 33rd Annual Conference Indian Council of Chemists at Indian School of Mines Dhanbad, India
- Sudeep Mishra, Vinod Deotale, Mahesh K Saini, **M. K. Singh**, Mangesh Pande, S. Alam, L. K. Thakur, B. S. Sehrawat, S. K. Raza. Analysis of multiclass pesticide residues in farmland water samples from different district of Haryana by Gas Chromatography and mass spectrometry in National Conference on Interdisciplinary Approaches in Chemical Science IACS-2015, on 16th December 2015, at Jamia Milia University, Delhi, India
- **Mukesh K. Singh**, Mahesh K Saini, Vinod D Deotale, Mangesh A Pande, Sudeep Mishra, Samsul Alam, L. K. Thakur and S. K. Raza. Method development and validation for the residue studies of Difenconazole 25% EC in Chilli and Siol in the

3rd International IUPAC Conference on Agrochemicals Protecting Crops and Natural Environment 6th -9th April, 2016, New Delhi, India

- Mahesh K Saini, Vinod D Deotale, Mangesh A Pande, **Mukesh K. Singh**, Sudeep Mishra, Samsul Alam, L. K. Thakur and S. K. Raza Determination of persistence and dissipation behaviour of Azoxystrobin residues in grapes berries and field soil by LC-MS/MS. in 3rd International IUPAC Conference on Agrochemicals Protecting Crops, and Natural Environment 6th -9th April, 2016, New Delhi, India
- Sudeep Mishra, Mahesh K Saini, Vinod D Deotale, Mangesh A Pande, **Mukesh K. Singh**, Samsul Alam, L. K. Thakur and S. K. Raza. Residual fate and dissipation of Fipronil 80% WG in grapes berries and field soil. in the 3rd International IUPAC Conference on Agrochemicals Protecting Crops, and Natural Environment 6th -9th April, 2016, New Delhi, India (*first prize winner in poster presentation*)
- **Mukesh Kumar Singh**, Sudeep Mishra, Neelam Richarya, Samsul Alam, Lalitesh K.Thakur, P.K. Patanjali. Method Development and Validation for Pesticide Residues in Chilli by GC-ECD and GC-MS, Biophysika-2017, March 16th, 2017, Jamia Milia Islamia, New Delhi.
- Thakur, L.K., Devi, R., Agarwal, A., **Singh, M. K.**, Rajmani, Kumar, J. Development of environmental friendly microemulsion from plant oils, plant extracts and their quality parameters. Invited Lecture in IUPAC sponsored 4th International Conference on “Agrochemical Protecting Crops Health and Natural Environment-Discovery and Development of Synthesis and Natural Products for Health and Pest Management” 7-10th Jan 2020, New Delhi. India. p51.
- Saini, M.K., Alam, S., **Singh, M.K.**, Mishra, S., Thakur, L.K., Kumar, J. Modified QuECHERS based approach for the analysis and estimation of the Gibberellic acid (GA-3) residues in chilli and its soil using LC-MS/MS. Oral presentation in IUPAC sponsored 4th International Conference on “Agrochemical Protecting Crops Health and Natural Environment-Discovery and Development of Synthesis and Natural Products for Health and Pest Management” 7-10th Jan 2020, New Delhi. India. p108
- Mishra, S., **Singh, M.K.**, Saini, M.K., Ahluwalia, A., Alam, S., Thakur, L.K., Kumar, J. Evaluation of pesticides residues in vegetables of 8 districts of Haryana. Oral presentation in IUPAC sponsored 4th International Conference on “Agrochemical Protecting Crops Health and Natural Environment-Discovery and Development of Synthesis and Natural Products for Health and Pest Management” 7-10th Jan 2020, New Delhi. India. p 113.
- **Singh, M.K.**, Ahluwalia, V., Agarwal, A., Sharma, N., Mishra, S., Saini, M.K., Alam, S., Thakur, L.K., Kumar, J. Method development and validation for residue analysis of eighty one pesticides by LC- ESI –MS/MS triple quadruple in tomato. Oral Presentation in IUPAC sponsored 4th International Conference on “Agrochemical

Protecting Crops Health and Natural Environment-Discovery and Development of Synthesis and Natural Products for Health and Pest Management” 7-10th Jan 2020, New Delhi. India. p109.

- Ahluwalia, V., **Singh, M.K.**, Kumari, A., Mishra, S., Saini, M. K., Alam, S., Thakur, L.K., Kumar, J. Liquid chromatography tandem mass spectroscopy method for simultaneous determination of eighty one pesticides in coriander. Abstracted in IUPAC sponsored 4th International Conference on “Agrochemical Protecting Crops Health and Natural Environment-Discovery and Development of Synthesis and Natural Products for Health and Pest Management” 7-10th Jan 2020, New Delhi. India. p144.
- Biswas, S., **Singh, M.K.**, Goel, K., Alam, S., Agarwal, A., Ahluwalia, V., Thakur, L.K., Kumar, J. Validation of an analytical method for 68 pesticides in spices (Cumin and Kalonji) using liquid chromatography tandem mass spectrometry. Abstracted in IUPAC sponsored 4th International Conference on “Agrochemical Protecting Crops Health and Natural Environment-Discovery and Development of Synthesis and Natural Products for Health and Pest Management” 7-10th Jan 2020, New Delhi. India. p154
- Ahluwalia, V., **Singh, M. K.**, Mishra, S., Saini, M.K., Alam, S., Thakur, L.K., Kumar, J. Development and validation of LC-MS/MS method for simultaneous determination of eighty one pesticides in rice. Abstracted in IUPAC sponsored 4th International Conference on “Agrochemical Protecting Crops Health and Natural Environment-Discovery and Development of Synthesis and Natural Products for Health and Pest Management” 7-10th Jan 2020, New Delhi. India. p163.
- Goel, K., Biswas, S., Ahluwalia, V., **Singh, M.K.**, Jha, P., Alam, S., Thakur, L.K., Kumar, J. Analysis of 68 pesticides in Fenugreek using liquid chromatography tandem mass spectrometry. Abstracted in IUPAC sponsored 4th International Conference on “Agrochemical Protecting Crops Health and Natural Environment-Discovery and Development of Synthesis and Natural Products for Health and Pest Management” 7-10th Jan 2020, New Delhi. India. p141.
- Anil Kumar Verma, **Mukesh Kumar Singh**, L.K. Thakur, Jitendra Kumar, Method development and validation for quantification of Pyriproxyfen Sodium and Quinalphos ethyl mixed in mixed microemulsion by RP- HPLC. Abstracted in IUPAC sponsored 4th International Conference on “Agrochemical Protecting Crops Health and Natural Environment-Discovery and Development of Synthesis and Natural Products for Health and Pest Management” 7-10th Jan 2020, New Delhi. India. p166
- Anil Kumar Verma, **Mukesh Kumar Singh**, L.K. Thakur, Jitendra Kumar, Method development and validation for quantification of Bispyrifen sodium and Pyrazosulfuran ethyl mixed in mixed microemulsion by RP- HPLC. Abstracted in IUPAC sponsored 4th International Conference on “Agrochemical Protecting Crops Health and Natural Environment-Discovery and Development of Synthesis and

Natural Products for Health and Pest Management” 7-10th Jan 2020, New Delhi. India. p168

- **Mukesh Kumar Singh**, Rajmani Prajapati, L.K. Thakur, Jitendra Kumar , antifungal activities evaluation of various plant extracts against soil borne plant pathogenic fungi Abstracted in IUPAC sponsored 4th International Conference on “Agrochemical Protecting Crops Health and Natural Environment-Discovery and Development of Synthesis and Natural Products for Health and Pest Management” 7-10th Jan 2020, New Delhi. India. p167

PATENT:

N. A. Shakil, J. Kumar, **M. K. Singh**, K. M. Loha, T. Adak, P. Kaushik, A. Roy chowdhury, D. J. Sarkar and Pankaj. (2012) Development of slow release nano formulations of bioactive molecules and there of method of preparation. Indian Patent Application 257/ DEL/2012

FELLOWSHIP:-

International Six months (1ST Sep 2017 - 28th Feb 2018) fellowship as a synthetic fellow at **VERIFIN, Finland under the OPCW (Organization for the Prohibition of Chemical Weapon) fellowship programme 2017, The Hauge, the Netherland.**
Title-Synthesis of valine adduct of Nitrogen Mustard (NH-3)

AWARD:-

- First prize in poster presentation the 3rd International IUPAC Conference on Agrochemicals Protecting Crops, and Natural Environment 6th -9th April, 2016, New Delhi, India.
- First prize in speech deabate against corruption at IPFT Gurugram
- 3rd Prize in NIBANDH ,LORI, and other pratiyogita many times at IPFT Gurugram
- 2nd Second Prize in Desh Bhakti Geet Organised at IPFT

JOB PROFILE:

- **Deputy quality manager in NABL** at Analytical Division , IPFT
- **Study director, Deputy study director & study personnel in GLP** in Analytical Division , IPFT
- Preparation of Technical SOP for the determination of pesticides physio -chemical parameters / Multiresidue analysis /A.I. content related as per OECD/CIPAC/WHO/FAO/SANTE guidelines.
- Preparation of technical SOP for the all minor and major equipment related to the study and their operation calibration and maintenance,
- Preparation of study plan, study schedule study report.
- Arrangement of Study related chemicals, glassware, equipment etc.
- Incorporate QA comments related to study plan and schedule and report in the study.
- Performing the study, recording the raw data sheet, calculation of results, preparation of study report and submission for final report and archive in GLP facility.
- Method development and validation for pesticide residue analysis by LC MS QTOF (HRMS),

- Molecular mass determination and their probable structural determination by LC MS QTOF (HRMS) of unknown molecule.
- Multi residue method development and validation of pesticides by TSQ Quantum Access LC MS/ MS
- Internal calibration of UV, FTIR, GC,HPLC,GC MS ,GC MS MS , LC MS MS,LC MS QTOF and others sophisticated major/minor equipment's.
- OPCW PT sample preparation and Qualitative analysis of CWC related from different matrices like Soil, Water, Organic, metal sheet, sanitizer etc. using GC (NPD,FPD) and GC-MS and their report preparation.
- Synthesis of derivatives of CWC related chemicals via Silylation, Methylation and Thiolation
- Extraction of complicated sample matrix via silica SAX/ SCX clean up procedure.
- Synthesis of precursors, degradation products and by products of scheduled chemical
- Identification and confirmation of compounds, mainly by gas , liquid chromatography and Gas chromatography - mass spectroscopy
- Qualitative and quantitative analysis of pesticides formulation as well as Technical using GC, HPLC, FTIR, NMR, UV and Classical methods.
- Multi Pesticide Residue analysis from Food, Grains, Vegetables, Soil, Water etc. using GC and GC-MS/MS and LC MS/MS.
- Maintenance of Instruments and other assignment (calibration, testing, record maintenance) as per NABL/GLP requirement.
- Participate in PT and ILC programme for the evaluation of laboratory quality assessment.
- Generation of pesticides residues data of field trial crops samples from different Industry sponsored projects and their report preparation
- Method development for the analysis of pesticides formulation, Technical, pesticide residues.
- To provide training on qualitative and qualitative analysis of pesticides and their formulations to trainee from Indian pesticide industries and abroad.
- To provide training on pesticide residue analysis to trainee from Indian pesticide Industries and abroad.
- To take theory as well as practical classes to the trainees during the Skill development programme organised by the division.
- Developments of synthetic pesticide and Bio- pesticide conventional as well as new generation formulation(GEL, Microemulsion, Emulcifiable concentrate) and Their Physio- chemical and Bio-efficacy studies.
- Extraction, Isolation and Bio efficacy of plants extracts and their development of Nano-formulation/new generation formulation
- Bio-efficacy evaluation (Antifungal), Seed coating & Encapsulation of bioactive molecules
- Synthesis, isolation, purification and structural elucidation of organic compound by PREP HPLC-MS, LC-QTOF-MS, FTIR, NMR.
- Process development of Agrochemicals (tech), Intermediates and Pharmaceuticals Intermediates
- Search literature through Sci-Finder and Chemical abstracts.
- Taking synthesis batch through mili gram to scale up.
- Pilot Plant Operation.
- Autoclave reaction (High Pressure)

SEMINAR & CONFERENCE,WORKSHOP ATTENDED

- Attended Sensitization work shop on GLP at NPC, New Delhi on March 4, 2021
- Attended workshop on Column chemistries and sample preparation conducted on 6th February 2020 at waters India Pvt. Limited.
- Oral presentation in the 4th International IUPAC Conference on Agrochemicals Protecting Crops and Natural Environment from 7th -10th January, 2020, at NASC complex, New Delhi, India
- The **International workshop on Analysis of Chemical Warfare Agents to mark the 20th Anniversary of the CWC** from 11th -13th December 2017 in hotel Katajanokka, **Helsinki, Finland**
- Participated at Sensitization workshop on LGP (Good Lab Practices) from 17-18th May 2018, at National Productivity Council (NPC) Delhi.
- Participated in Indo-US workshop on security of Dual use Agrochemicals, Improving Security at Vulnerable location in the agrochemical Supply Chain 2017 on 1st August 2017 at NASC Complex, Delhi, India
- Oral presentation in Biophysika-2017, March 16th, 2017, Jamia Milia Islamia, New Delhi
- Participated orientation program for academic counsellors, on during 21st -22nd October 2016 at MCI, Sec-8, Dwarka Delhi
- Participated at Sensitization workshop on LGP (Good Lab Practices) from 17-18th October 2016, at India Habitat Centre Delhi.
- Two days workshop on“ Analytical Techniques in Food Safety from 14th -15th July 2016 at Institute of Pesticide Formulation Technology (IPFT), Gurugram
- Oral presentation in the 3rd International IUPAC Conference on Agrochemicals Protecting Crops and Natural Environment from 6th -9th April, 2016, at NASC complex, New Delhi, India.
- Participated at sensitization workshop on LGP (Good Lab Practices) on 29th January 2016 at IIHMR, Dwarka, Delhi.
- Participated at sensitization workshop on LGP (Good Lab Practices) from 11-12th September 2014, at INSA Delhi
- Attended awareness program on Reference material producer (RMP) on 26th may 2014 organized by NABL at India Habitat Centre, Delhi.
- Paper presentation in International symposium on food security dilemma plant health and climate change issue from 7th -9th December 2012 at BCKV Kalyani ,west Bengal
- Certificate of participation in seminar on solutions from research to process conducted by Cole-Parmer.
- 2nd International Conference on Agrochemicals protecting crops health and natural environment role of chemistry and sustainable agriculture 15th-18th Feb 2012 at IARI, New Delhi-12, India.
- International Conference on Materials for the Millennium Matcon- 11th-13th January 2010 at Kochi, Kerala, India.

- Paper presented in 15th ISCB international conference 4th - 7th February 2011 at Rajkot, Gujarat, India.
- 1st International conference on Agrochemicals protecting crops health and natural environment role of chemistry and sustainable agriculture 8th-11th January 2008 at IARI, New Delhi-12, India.
- Inter college Quiz completion on AIDS 30th -1st December 2008, University of Delhi-07 , New Delhi, India
- Workshop on “Substance Abuse” 10th -11th September 2008, University of Delhi-07. New Delhi, India

ANALYTICAL SKILLS:

- LC MS Q-TOF, LC- ICP MS, NMR, GC-MS, GC-MS/MS, LC-MS/MS, GC, HPLC, DSC-TGA, FTIR, UV,,PREP LCMS,PPEP HPLC etc.
- Polarimeter, Karl –Fischer Titrator, Melting point apparatus, Flash point apparatus, pH meter, Pycnometer, Bulk density Apparatus, Viscometer, Dustinometer, Attrition resistance tester, sieve shaker, ICP-MS sample disaster and all other laboratory minor equipment's.

ACADEMIC PROJECT:

- Synthesis of Trifluoromethylated Traizino Indole Hydrazone as potential Agrochemicals for the fulfillment of M.Sc. degree, at University of Delhi, New Delhi.

INDUSTRIAL PROJECT:

- Pesticide Residue data generation of different Industry sponsored project like Imidacloprid in Paddy, Imidacloprid in Tomato, Difenconazole in Paddy, Difenconazole in Chilli, Bifenthrin in Paddy, Bifenthrin in Cotton, Cypermethrin in Cotton, Gibberellic acid in Brinjal, Chlorthalonil in Potato, Gibberellic acid in Grapes , Pyraclostrobin in Tomato, Chlorthalonil in Groundnut etc.
- Extraction and Isolation of Azadirachtin-A from Neem seed. & Development of emulsifiable concentrate (EC) formulation
- Synthesis of commercial Technical pesticide like Phenthoate, Clodinafop propargyl, Chlorpyrifos methyl/ethyl, Triclopyr butotyl, Pendimethaline, Imidacloprid, Acetamiprid, Dimethyl thiophosphoryl chloride (DMTC), 3- Cyano propanoic acid (3-CPA), 3-CPAC, & Hydroxy phenoxy propanoic acid (D-HPPA)

TRAINING:

- Fire fighting training on 01st November 2022 at IPFT Gurugram by PEARL SAFETY EQUIPMENTS
- Training on general requirements for the competence of testing and calibrating laboratories as per ISO: IEC 17025:2017 from 1st-3rd June 2022 at Institute of Pesticide Formulation Technology Gurugram. India.
- Training course for study directors of GLP Test facilities from 24-26 August 2021 at National productivity council New Delhi

- Training operation and maintenance of DSC- TGA July 2021 at IPFT by TA instruments.
- Training on OECD principles of GLP from 22nd -24th January 2019 at Institute of Pesticide Formulation Technology Gurugram. India.
- Training on CWC analysis from 29th-30th March 2016 at DRDE Gwalior, India
- Training on reference material producers organized by EU-Indo capacity building initiative for trade development (CIDT) with collaboration of NABL from 24th -26th November 2014 at Hotel Royal Plaza, New Delhi.
- Training on pesticide residue analysis and basics operation of GC, GC-MS, HPLC from July 7th-11th 2014 at Punjab Agricultural University Ludhiana (Punjab)
- Training on use of fire fighting equipments and systems on 19th December 2012. at IPFT Gurugram, Haryana, India
- Training on Laboratory quality management system and Internal Audit NABL/ ISO :IEC 17025:2005 from 4th-7th September 2012 at Indian Institute of quality management Jaipur, Rajasthan, India
- Training on Inter lab comparison proficiency testing(ILC-PT) and evaluation of Z-score from 26- 27th September 2013 at BIS Kolkata, West Bengal, India
- NAIP sponsored training on extraction and Analysis of Nutraceuticals from vegetables, fruits nonfood crops from 22nd - 24th November 2012 at division of agrochemicals, IARI, New Delhi, India
- Two days training on basics of GC from 8-9th December, 2011 at Shimadzu Analytical India Pvt. Ltd, Rajendra Nagar, New Delhi, India.
- Two days training on basics of GC-MS from 12-13th July 2011 at Shimadzu Analytical India Pvt. Ltd, Rajendra Nagar, New Delhi, India.
- Training on **Monitoring of pesticide residue** from 22-26th November 2011 at PCC cell in I.A.R.I. PUSA New Delhi-12, India.

OTHER ACADEMIC QUALIFICATION:

- Post M.A diploma in Adult Education and Continuing Extension from University Delhi, India.
- Short term course in Science and Sports Journalism from University of Delhi 110007, India.
- Short term course in Counseling and Guidance from University of Delhi- 110007, India.
- Short term course in Research Methodology from Delhi University Delhi-110007, India.

COMPUTER SKILLS:

- Training in Basic computer concepts, MS-word, MS-Power Point, Internet Email Database concepts MS-access Data modeling with Oracle9i MS-Excel, Linux, from University of Delhi- 110007, India.
- Polytechnic in Computer Science and Application (1year) from New Government Polytechnic Patna, India

STRENGTHS:

- Objectivity, Team spirit, Self motivated, Open to take responsibilities, Successfully completed projects in Organic chemistry, Excellent analytical hand, Good written & communication skills, can work under pressure and able to meet deadlines.

This information furnished here is true to the best of knowledge and belief

Mukesh Kumar Singh

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Scientist (OPCW)