

# CURRICULUM VITAE

**Name : NISHA KUMARI**

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## EDUCATION:

**Ph.D. Chemistry – Bharathiar University**  
**Research topic:** Synthesis & Characterisation of Organophosphorous Compounds related to P-N & P-S bond. (Submitted in May 2017)

**: March 2012 – March 2017**

**Advisor:** Dr. Arvind Kumar Gupta ( Scientist-F).

**Institute:** Defence R&D Establishment, Gwalior, M.P.

**M.Sc. Organic chemistry – 1<sup>st</sup> Division - Osmania University**

**: June 2008 – June 2010**

**Institute:** Science College of OU Campus, Hyderabad, T.S.

**B.Sc. Chemistry Honours – 1<sup>st</sup> Division - Veer Kunwar Singh University**

**: July 2004 – July 2007**

**Institute:** DSSV College, Simri, Buxar, Bihar.

**Senior Secondary Education - Biology, Physics and Chemistry – 1<sup>st</sup> Division - State Board of Bihar**

**: June 2002 – June 2004**

**Institute:** Sumitra Mahila College, Dumraon, Buxar, Bihar.

**Secondary School Education – 1<sup>st</sup> Division - State Board of Bihar**

**: March 2001 – March 2002**

**Institute:** Maharani Usharani Girls High School, Dumraon, Buxar, Bihar.

## FELLOWSHIPS:

- **CSIR-UGC-NET-JRF**, March 2012 to March 2014
- **CSIR-UGC-SRF**, March 2014 to March 2017

## RESEARCH EXPERIENCE:

On the basis of NET-JRF qualification, I joined Defence R&D Establishment (DRDE), Nagpur as Junior Research Fellow (15<sup>th</sup> March 2012). Here, I started working in Synthetic and Analytical Laboratory under the supervision of Dr. Arvind Kumar Gupta, Sc. 'F'. I focused my interest for the development of efficient, clean and green methods for the synthesis of different organophosphorus compounds having application as pesticides, toxins and chemicals.

- Eco friendly, solvent free, surface mediated synthesis of hydrazides of organophosphorus acids.
- Microwave assisted synthesis of organophosphorus marine fish toxins.
- (Dichloroiodo)benzene mediated synthesis of thiophosphates through oxidative coupling of H-phosphonates with alkyl/aryl thiols.
- Synthesis of precursor for Chemical warfare Agents.

- Purification of the compounds by column chromatography & vacuum distillation.

## INSTRUMENTS HANDLED

My working laboratory was equipped with highly sophisticated analytical instruments such as;

- FT-NMR (BRUKER 400 MHz)
- GC-MS (Agilent)
- FT-IR (BRUKER)

I personally handle/operate and get expertise for the operation of these instruments. This expertise of analytical instruments such as GC-MS(CI & EI), FT-IR, NMR( $^1\text{H}$ ,  $^{13}\text{C}$ ,  $^{19}\text{F}$ ,  $^{31}\text{P}$ , DEPT-135, COSY, HSQC, NOESY) was used for the characterisation of organophosphorus compounds.

## ATTENDED SEMINAR:

- International Conference on “Frontiers at the chemistry-Allied Sciences Interface (FCASI-2016)” 25<sup>th</sup> to 26<sup>th</sup> April, 2016 held at **Center of Advanced Study, Department of Chemistry, University of Rajasthan, Jaipur (India)**.
- National seminar on “Modern Methods in Organic Synthesis (MMOS 2017)” 21<sup>st</sup> to 22<sup>nd</sup> March 2017 at **PG Teaching Department of Chemistry, RTMN University, Nagpur (India)**.

## PUBLICATIONS:

1. Microwave-Assisted Synthesis of bis-(N,N-dialkyl)/O-aryl N,N-dialkyl -2-(1- methyl / phenyl-2-oxopropylidene) Phosphorohydrazido Oximes on a Solid Support under Solvent Free Conditions: Marine Fish Toxin Analogues.  
**Nisha Kumari**, Naresh Vyas and Arvind K. Gupta  
*Phosphorus, Sulfur, Silicon and the related elements* Volume 192, Issue 7, 2017, PP 831-834
2. Calcium Oxide: An Inexpensive Solid Support for Solvent Free Synthesis of Phosphorohydrazides and Thiophosphorohydrazide at Room Temperature  
**Nisha Kumari**, Naresh Vyas, Hitendra.N.Karade and A.K.Gupta  
*International Journal of Advanced Research in Chemical Science (IJARCS)* Volume 3, Issue 1, January, 2016, PP 26-33
3. (Dichloroiodo) Benzene Mediated Synthesis of Thiophosphates through Oxidative Coupling of H-phosphonates with alkyl/aryl Thiols. (Communicated)  
**Nisha Kumari**, Naresh Vyas, Arvind Kumar Gupta and Hitendra N. Karade  
Manuscript under communication
4. Rapid, Efficient, and Facile Solvent Free Surface-mediated Method for Synthesis of Phosphorohydrazides at room temperature by using Calcium Oxide as a Solid Support.  
**Nisha Kumari**, Naresh Vyas and A. K. Gupta, *International Conference on Frontiers at the Chemistry-Allied Sciences Interface* held at Jaipur, April 25-26, 2016.(Poster presentation)
5. Development of Rapid and Efficient one-pot Method for the Synthesis of Bis (2-methoxyethyl) N,N-dialkyl phosphoramidates.  
Naresh Vyas, **Nisha Kumari** and A. K. Gupta, *International Conference on Frontiers at the Chemistry-Allied Sciences Interface* held at Jaipur, April 25-26, 2016.(Poster presentation)