

# Curriculum Vitae

## Dr. Malik Abdul Waseem

M.Sc. Chemistry, M.Phil, Ph.D., P.doc  
University of Allahabad,  
A Central University 211002.  
Indian Institute of Integrative Medicine (IIIM), Jammu & Kashmir.  
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### Education:

Degree	Institution	Year of Passing	Subject(s)	Division
Master of Science	BU. India	2010	Chemistry,	I <sup>st</sup>
Master of Philosophy in Science	Sam Higginbottom Institute of Agriculture, Technology and Sciences, Allahabad, India	2011	Green Chemistry	I <sup>st</sup>
Research Scholar	University of Allahabad, Allahabad, India	2011-2016	Synthetic Organic Chemistry	
M.Phil*	Sam Higginbottom Institute of Agriculture, Technology and Sciences, Allahabad, India	2011	<i>*Thesis title</i> Synthesis of heterocyclic Compounds Using Schiff's bases as intermediates''	
Ph. D.*	University of Allahabad, A Central University 211002	2011-2016	<i>*Thesis title</i> "Ionic liquids in multicomponent reactions for new eco-compatible heterocyclic synthesis."	
PDF*	Medicinal Chemistry Division, Indian Institute of Integrative Medicine (IIIM), Jammu & Kashmir.	2016-2018	Synthesis and applications of N-heterocyclic carbenes towards biologically potent heterocyclic scaffolds	

**M.Phil. Supervisor:** Dr. Amit Chattree, Head Department of chemistry, Sam Higginbottom Institute of Agriculture, Technology and Sciences, Allahabad 211002, India

**\*D.Phil. Supervisor:** Prof.I.R.Siddiqui, Department of Chemistry University of Allahabad Allahabad 211002, India

**PDF Mentor:** Dr. Bilal Ahmad Bhat, CSIR IIIM Jammu & Kashmir

### **Highlights of Qualification:**

• Strong academic career • High level research achievements in the field of synthetic organic chemistry • Ever-learning attitude to explore modern synthetic chemistry and applications • Hard-working capability with excellent bench skills • Publications in internationally reputed journals • Extensive experience in project management and team management.

### **Awards:**

➤ Project Fellow (UGC)	2011- 2013
➤ Senior Research Fellow (CSIR)	2013-2015
➤ National Postdoctoral Fellow (NPDF)	2016-2017
➤ Best paper of the year award in (TL)	2013
The methodology were highlighted in synfacts	
➤ Best paper presentation award	2015
➤ Best paper presentation award	2017

**Project Handled:** PI of CSIR DST Sponsored project (N-PDF), Total cost of project 19,60,000/ Rs

### **Research Interests**

- **Synthetic Organic Chemistry and Asymmetric Synthesis**  
Development of new methodologies for stereoselective synthesis of bioactive molecules.
- **Medicinal Chemistry & Drug Discovery**  
Design and synthesis of small molecules as new therapeutic agents, primarily anti-tubercular, anti- bacterial, anti-fungal and anti-cancer agents.  
Design and synthesis of novel molecular entities in the form of heterocycle-sugar and heterocycle- heterocycle hybrid molecules.
- **Green & Sustainable Chemistry**  
Design of novel green synthetic pathways to biologically important heterocyclic molecules, with the emphasis on use of bio-renewable and recyclable ecofriendly solvents and catalysts.  
Organic synthesis using photochemical activation.  
Design and synthesis of new solid supported catalysts.
- **Chemistry of Natural Products**  
Currently I am working as a mentor researcher at, Department of Chemistry, University of Kashmir, on isolation , synthetic modification and characterization of natural products,

## **Research Experience:**

### **Post Ph.D Research Experience – 2 years**

- Medicinal Chemistry Division, Indian Institute of Integrative Medicine (IIIM), Jammu & Kashmir.190005, India.

### **Teaching Experience: - 5 years at University of Kashmir Dargah Hazratbal Srinagar.**

5 years of teaching experience at University of Kashmir, Dargah Hazratbal Srinagar, 190006

### **Instruments handled**

- Modern methods of analysis such as UV-Vis, IR and NMR spectroscopy, Mass spectrometry, CHN analysis, specific rotation using polarimeter, colorimetry etc.
- Special skills in interpretation of 1D and 2D NMR data.
- Handling NMR instrument from last 1-1/2 years. Expertise in recording NMR experiments like, <sup>1</sup>HNMR, <sup>13</sup>CNMR, DEPTs, <sup>19</sup>F, <sup>31</sup>P experiments. Additionally of COSY, TOCSY, HSQC, HMBC, HMQC and ROESY experiments.
- Expertise in maintaining NMR instrumentation and refilling of liquid Nitrogen. I can handle accurately NMR .
- General techniques for separation and purification of organic compounds like TLC, column chromatography, crystallization, flash chromatography, HPLC etc.
- Lab management including lab safety management.
- Writing research papers, review articles, patent applications and research grant applications.
- Evaluation of PhD theses and reviewing of research articles from prestigious international journals (On behalf of PhD supervisor and postdoctoral mentor)
- Use of online scientific databases such as Sci-finder, Reaxys, Chemspider, Web of Science, Scopus etc.

Softwares Handled: Chem Draw, MestReNova, Topspin, MS Word, MS Excel, MS PowerPoint, Origin etc

### **Research Skills:**

- Multi-step organic synthesis of complex organic molecules.
- Handling of air, moisture sensitive and hazardous reagents and performing reactions under inert atmosphere.
- Experienced in performing multistep reactions from milligram to multigram scale.
- Well versed with modern synthetic organic techniques and transformations like Sonogashira coupling, Suzuki coupling, hetero-Ullman coupling, Wolf-Kishner reduction, Grignard reaction, Aza-Michael addition, *n*-BuLi reactions, Aldol condensation, hydrogenation, elimination, multicomponent reactions, oxidation,

reduction, functional group transformations, functional group protection-deprotection reactions etc.

- Highly experienced in using techniques such as column chromatography and TLC for reaction monitoring and purification of compounds.
- Expertise in handling air and moisture sensitive reactions.
- High level of skill in interpretation of spectroscopic data viz FT-IR, Mass,  $^1\text{H}$  NMR,  $^{13}\text{C}$  NMR,  $^1\text{H}$ - $^1\text{H}$  COSY, HMQC, HMBC, HSQC and NOSEY spectra.

**Project Handled:** PI of CSIR DST Sponsored project, Total cost of project 196000/ Rs

## Research Publications and Patents

(a) Total Publications - 37

(b) Abstracts - 2

(c) Papers/posters presented in conferences / symposia / seminar

- **Papers and Review Articles Published - 37**  
(Cumulative Impact Factor – 91.07)  
(Total Citations - 245); Source: Google Scholar (Address Malik Waseem)

## Publications:

1. Tahirah Khaliq, **Malik A. Waseem**, Sameer A. Mir, Fayaz A. Malik, Phalisteen Sultan and Qazi Parvaiz Hassan. "Isolation and Characterization of Pharmaceutically Versatile Molecules from *Rumex dentatus* and Evaluation of Their cytotoxic activity against Human Cancer cell lines." *Natural Product Research*, June, 2022,
2. Aadil Yaseen, **Malik A. Waseem**, Mahapara Qadir, Parvaiz A Dar, Shariqah Hijazi, Mir Ashiq Hussain and Wajahat A Shah. "PEG-400 Catalyzed N-C,O-C & C-S Bond Formations: A Robust Sonication Promoted Synthesis of Benzo[d] oxazole-2(3H)-thioe & Benzo[d]thiazole-2(3H)-thione Hybrids." *Analytical Chemistry Letters*, April, 2022, 302-309
3. Catalyst free synthesis of 2-Aryl-2H-benzo[b][1,4]oxazines and 3-Aryl-2H-benzo[b][1,4]thiazin-2-ones: An ultrasonication-assisted strategy, Bisma Teli, **Malik Abdul Waseem**, Showkat Rashid, Bilal Ahmad Ganaie, Bilal A Bhat, *Journal of Heterocyclic Chemistry*, 2021
4. K Ansari, M Nazeef, S Ali, **M A Waseem**, WA Shah, S Ansari, IR Siddiqui; ,A metal-free visible light promoted three-component facile synthesis of 4-oxo-tetrahydroindoles in ethanol–*Journal of Heterocyclic Chemistry* 58 (2), 622-629, 2021
5. Anmbiya Qadir<sup>[a]</sup>, **Malik A Waseem**<sup>[a]</sup>, Mohammad A Khuroo<sup>\*[a]</sup>, Efficient Metal-Free Process: A Facile Synthesis of Biologically, Versatile Harmol-Linked Benzothiazoline Hybrids, *Chemistry Select* 5 (2), 834-838, 2020
6. **Malik Abdul Waseem**,<sup>†</sup>Ali Mohd Lone,<sup>†</sup> Bisma Teli,<sup>†‡</sup> and Bilal A. Bhat,<sup>†‡\*</sup>Catalyst free selective monobenzoylation of diols with benzoyl cyanide: A robust and regioselective strategy , *Chemistry Select*, 3 (2), 828-83

7. **MA Waseem**, F Ibad, A Ibad, RA Rather, M Saquib, I.R Siddiqui\*, *New Journal of Chemistry NJC*. 42 (14), 11280-11284.
8. **Malik A. Waseem**, Shireen, Khursheed Ansari, Farah Ibad, Afshan Ibad, Jagdamba Singh, I.R. Siddiqui., [bmIm]OH catalyzed coupling: Green and efficient synthesis of 2,8 dioxacyclopenta [a] inden-3-one derivatives in an aqua media. *Tetrahedron Letters Available online 21 September 2018*.
9. Afshan Ibad<sup>[a]</sup>, **Malik A Waseem**<sup>[a]</sup>, Farah Ibad<sup>[a]</sup>, Khursheed Ansari<sup>[a]</sup>, Ali Mohd Lone<sup>[a]</sup>, Geeta Watal<sup>[b]</sup>, I.R.Siddiqui<sup>[a]\*</sup>. A Green Access to Tetrahydro-1H-pyrano[2,3-d]pyrimidines: Visible-Light-Triggered and Ethylene-Glycol-Mediated Multicomponent One-Pot Process. *Chemistry Select*, May 2017.
10. **Malik A. Waseem**,<sup>a</sup> Ali Mohd Lone,<sup>c</sup> Farah Ibad,<sup>b</sup> Afshan Ibad,<sup>b</sup> Vijay B. Yadav,<sup>a</sup> Khursheed Ansari,<sup>a</sup> Bashir Ahamad Shairjogrey,<sup>c</sup> Geeta Watal,<sup>c</sup> and I.R. Siddiqui\*<sup>a</sup> Double Hydroamination of Alkyne via PTC and Microwave-activated Diastereoselective Synthesis of 2,3-dihydroimidazo[1,2-a]pyridine in an Aqueous Media. *J. Heterocyclic Chem.*, 00, 00 (2017). DOI 10.1002/jhet
11. **Malik Abdul Waseem**, Shireen, Rahila, Arjita Srivastava, Anjali srivasatava, I.R.Siddiqui\*, [bmIm]OH: an efficient basic catalyst for the synthesis of 4H-benzo[d][1,3-]oxazin-4-one derivatives in solvent-free conditions, *Tetrahedron letters*, 2014, 55, 6072-6076 (Impact Factor **2.193**).
12. T Khaliq, **MA Waseem**, AM Lone, QP Hassan, Microbial pathogenesis 118, 211-213 *Oscimum sanctum* extract inhibits growth of Gram positive and Gram negative bacterial strains, *Molecular Pathogenesis*, 2018
13. **Malik.A.Waseem**, Shireen, Afaf. A. H. Abumahdi, Arjita Srivastava, Anjali Srivastava, Rahila, I.R.Siddiqui\*, [bmIm]OH catalyzed hetero-cyclization of o-halobenzoic acid and alkyne: A green approach to synthesize isocoumarins, *Catalysis Communications*, 2014, 55, 70-73 (Impact factor-**3.330**).
14. I.R.Siddiqui\*, **Malik A. Waseem**, Shayna Shamim, Shireen, Arjita Srivastava, Anjali Srivastava. *Recyclable [bmIm]OH promoted one-pot heterocyclisation: Synthesis of substituted benzofurans*. *Tetrahedron Letters*, 2013, 32, 4154-4158. (Impact factor-**2.193**), **Best paper of year in Tetrahedron Letters, and the methodology has been published in SYNFACTS**.
15. **Malik Abdul Waseem**, Afshan Ibad, Farah Ibad, Shamsun Neha, I.R. Siddiqui\*, Efficient [bmIm]OH catalyzed novel and diastereoselective synthesis of imidazopyridine via microwave activation in an aqueous media, Accepted in *Journal of Heterocyclic Chemistry*, July. 2015,
16. **Malik A. Waseem**, Shireen, Arjita Srivastava, Anjali Srivastava, Rahila, I.R. Siddiqui\* Water and ionic liquid synergy: A novel approach for the synthesis of benzothiazole-2(3H)-one, *Journal of Saudi Chemical Society*, 2014, 19, 334-339 (Impact factor-**2.88**)
17. I.R.Siddiqui\*, Farah Ibad, Afshan, Ibad, **Malik Abdul Waseem**, Geeta Watal, Eco-friendly Strategy: Design and Synthesis of biologically potent Benzimidazole-amine hybrids via visible-light generated oxidative C-H arylamylation of analenic amidines, Published in *Tetrahedron Letters Dec. 2015*. (Impact factor **2.193**)
18. I.R.Siddiqui\*, Shamsun Neha, **Malik Abdul Waseem**, Hozefa Sageer, Aqua mediated multicomponent reaction under phase transfer catalysis: A novel and green approach to access fused pyrazoles, published, *Arabian Journal of Chemistry 2015*, (Impact Factor **4.553**)

19. I.R. Siddiqui\*, Shayna Shamim, **Malik A. Waseem**, Arjita Srivastava, Rahila *Diastereoselective synthesis of fuopyranopyridine in ionic liquid/water without additional catalyst. RSC Advances*, **2013**, 3, 14423-14427. (Impact factor-**3.101**)
20. I.R. Siddiqui\*, Anjali Srivastava, Shayna Shamim, **Malik A. Waseem**, Arjita Srivastava, Shireen, Afaf A.H. Abumhdi, Rahila, Anushree Srivastava Pragati Rai and R.K.P. Singh. *Ionic liquid promoted four-component one-pot synthesis of highly functionalized benzimidazo [2,1-b][1,3] thiazine: A sequential and facile construction of N-fused heterocycles. Asian J. Org. Chem.* **2013**, 2, 519-524, impact factor (**2.77**)
21. I.R. Siddiqui\*, Rahila, Pragati Rai, **Malik A. Waseem**, Afaf A.H. Abumhdi, InBr<sub>3</sub> catalyzed tandem construction of C–C, C–O and C–N bonds: a concise, convenient and atom-economical strategy for the synthesis of spiro oxazolidine oxindole derivatives, *Tetrahedron Letters*, **2015**, doi:10.1016/j.tetlet.2015.05.088, impact factor (**2.193**).
22. I.R. Siddiqui\*, Arjita Srivastava, Shayna Shamim, **Malik A. Waseem**, Shireen, Anjali Srivastava, Rahila, Anushree Srivastava, Pragati Rai and Afaf A.H. Abumhdi *Microwave accelerated facile and efficient synthesis of piperido[3',4':5,6]pyrano[2,3-d]pyrimidinones catalyzed by basic ionic liquid [BMIM]OH, Journal of Molecular Catalysis A: Chemical*, **2014**, 382, 126-135 (Impact factor-**3.96**)
23. I.R. Siddiqui\*, Anjali Srivastava, Shayna Shamim, Arjita Srivastava, **Malik A. Waseem**, Shireen, and R.K.P. Singh. *Highly Diastereoselective NHC-catalyzed [4+3] annulations of enals, aldehydes and N-phenyl urea/thiourea for synthesis of monocyclic trans-1,3-diazepines. Synlett*, **2013**, 24, 2586-2590. (Impact factor-**2.70**).
24. I. R. Siddiqui\*, Rahila, Pragati Rai, Hozeyfa Sagir and Malik Abdul Waseem, Molecular iodine catalysed domino cyclization in aqueous medium: A simple and efficient synthetic route to 1,4-dihydropyridazines, *RSC Advances*, **2015**, DOI: 10.1039/C5RA05370F (Impact Factor--**3.101**).
25. I.R. Siddiqui\*, Rahila, Pragati Rai, Shireen, **Malik A. Waseem**, Shireen, Basic ionic liquid promoted domino Knoevenagel-thia-Michael reaction: An efficient and multicomponent strategy for synthesis of 1,3-thiazines, *Journal of Heterocyclic chemistry*, **2015**, Accepted, In press (Impact Factor: **0.893**)).
26. I.R. Siddiqui\*, Arjita Srivastava, Anjali Srivastava, **Malik A. Waseem**, Shireen, An efficient one-pot regioselective approach towards the synthesis of thiopyrano[2,3-d]thiazole-2-thiones catalyzed by basic ionic liquid under microwave irradiation, *Journal of Heterocyclic chemistry*, **2014**, Accepted, In Press (Impact factor 1.23).
27. **Malik Abdul Waseem**, Amit Chattree, I. R. Siddiqui\*, A novel and environmentally benign synthesis of Imidazolinone derivatives. *J. Appl. Chem.* **2013**, 2, 171-174., impact factor (2.23)
28. I.R. Siddiqui\*, Arjita Srivastava, Anjali Srivastava, **Malik A. Waseem**, Shireen, Rahila, Ionic liquid promoted one pot approach for the synthesis of pyrido[1,2-c][1,3,5]thiadiazine-4-ones and thiazolo[3,2-c][1,3,5]thiadiazin-4-ones in water, *Arabian journal of chemistry*, doi:10.1016/j.arabjc.2014.07.015 (Impact factor-**4.553**).
29. I.R. Siddiqui\*, Rahila, Shayna Shamim, Pragati Rai, Shireen, **Malik A. Waseem**, Afaf A.H. Abumhdi, *An InBr<sub>3</sub> catalyzed one-pot three component synthesis of functionalized spirodihydrofuran oxindoles via intramolecular alkyne carbonyl metathesis, Tetrahedron Letters*, (Impact factor-**2.193**)

30. I.R. Siddiqui\*, Shireen, Shayna Shamim, **Malik A. Waseem**, Afaf A.H. Abumhdi, Arjita Srivastava, Anjali Srivastava. *Basic ionic liquid promoted heterocyclization to access fused imidazopyridines*. **Tetrahedron Letters**, **2013**, 37, 5083-5086. (Impact factor-**2.193**).
31. I.R. Siddiqui\*, Afaf A.H. Abumhdi, Shayna Shamim, Shireen, **Malik A. Waseem**, Rahila, Anjali Srivastava and Arjita Srivastava. *[bmim]OH promoted hydroalkylation of nitrile and intramolecular hydroamination of carbon-carbon multiple bond: An efficient and eco-compatible strategy for synthesis of indolizines*. **RSC Advances**, **2013**, 3, 10173-10176. (Impact factor--**3.101**)
32. I. R. Siddiqui\*, Shireen, Shayna Shamim, Afaf A. H. Abumhdi, **Malik A. Waseem**, Arjita Srivastava, Rahila and Anjali Srivastava, *Ionic liquid promoted spiroannulation via hetero-Michael addition and intramolecular heterocyclisation*. **New Journal of Chemistry**, 2013, **37**, 1258-1263. Impact factor (**3.29\***).
33. I.R. Siddiqui\*, Shayna Shamim, Devesh Kumar, Shireen, **Malik A. Waseem**. *Tandem imino-pinacol coupling-aza-Michael reaction promoted by Zn/InCl<sub>3</sub>: A novel multicomponent strategy for diastereoselective synthesis of monocyclic 1,4-diazepine in water*, **New Journal of Chemistry**, 2012, **36**, 2209–2214. Impact factor (**3.269\***).
34. I.R. Siddiqui\*, Sanjay Yadav, Shayna Shamim, Shireen, **Malik A. Waseem**, Arjita Srivastava, Solid-Supported Cyclocondensation of Arylglyoxal on Ribosylthiourea under Microwave Activation: A Novel and Efficient Synthesis of N-Glycosylated-2-thiohydantoin, **Bulletin of The Chemical Society Of Japan**, 2014, (Impact Factor **1.35**)
35. I.R. Siddiqui, S Shamim, D Kumar, MA Waseem *Tandem imino-pinacol coupling-aza-Michael reaction promoted by Zn/InCl<sub>3</sub>: a novel multicomponent strategy for diastereoselective synthesis of monocyclic 1, 4-diazepine in water*, **New Journal of Chemistry** 36 (11), 2209-2214, (Impact Factor **3.29**)
36. A Green Access to Tetrahydro-1H-pyrano [2, 3-d] pyrimidines: Visible-Light-Triggered and Ethylene-Glycol-Mediated Multicomponent One-Pot Process. A Ibad, **MA Waseem**, F Ibad, K Ansari, AM Lone, G Watal, IR Siddiqui **ChemistrySelect** 2 (17), 4587-4592
37. Double Hydroamination of Alkyne via PTC and Microwave-activated Diastereoselective Synthesis of 2, 3-dihydroimidazo [1, 2-a] pyridine in an Aqueous Media. **MA Waseem**, AM Lone, F Ibad, A Ibad, VB Yadav, K Ansari, ... **Journal of Heterocyclic Chemistry** 54 (5), 2733-2739

#### (b) Book

1. Dr. Malik Abdul Waseem, Dr Ali M Lone, Role of carbohydrate derived compounds in tuberculosis treatment.

#### (d) Papers/posters presented in conferences / symposia/ seminar – 11

1. **Oral Presentation**, Best paper and best presentation award in “Science and Technology for National Development. (Indian Science Congress Association).” **11-13**, February **2017**, at University of Allahabad. , India.
2. **Oral Presentation** , Best paper and best presentation award in “Science and Technology for Human Development” March **2015**, at University of Allahabad.
3. **Oral Presentation**, at the Allahabad Chapter of ISCA held at Allahabad University, on March 30-31, **2014**., India

4. **Poster Presentation**, in the National Symposium on “**Organic synthesis and advanced Materials-2014**” Organized by Chemistry Department held at BHU, Varanasi 01-02 March 2014 India.
5. **Oral Presentation, National Seminar** on “Innovations in Science and Technology for Inclusive Development” (30, 31 March, 2014), University of Allahabad, Allahabad, India.
6. **Poster Presentation, 14th International Conference** on “Chemistry-biology for discovery: Perspectives and challenges” (15-18 January, 2010), University of Allahabad.
7. **Oral Presentation**, Presented paper in Innovations in Science and Technology for Inclusive Development” **2014**.
8. **Paper Presentation** 82<sup>nd</sup> Annual Session and National Symposium on “**Nano-science & Technology for Mankind**” Organized by The National Academy of Sciences, India held at BHU, Varanasi 29<sup>th</sup> Nov-1<sup>st</sup> Dec, **2012**.
9. **Oral Presentation**, at National seminar on “Emerging trends in science” University of Allahabad **2012**.
10. **Poster Presentation**, Interface of Industry, Biology and Chemistry Research in 21<sup>st</sup> Century” **2011**, India.
11. **Paper Presentation**, at **National Symposium** on “Emerging Trends and Advances in Chemical Research” **2009** India.

### **Personal Information**

Citizenship: Indian  
 Sex: Male  
 Marital status: Unmarried  
 Languages: English (fluent), Urdu, Hindi (native speaker)

### **Name and Contact Details of Three Referees**

#### **1. Prof. I R Siddiqui (PhD supervisor)**

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#### **2. Prof. Jagdamba Singh**

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#### **3. Dr. Khursheed Ahmad Bhat**

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#### **Place:**

Jammu & Kashmir (India)



**(Malik Abdul Waseem)**

Date: 04-03 -2022