# **Curriculum Vitae**

## Sheena Mahajan

Senior Project Associate,
NPMC Division,
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Personal: Born on August01, 1988 in Jammu (J & K) and Married

**Objective:** To work and develop in any system where I can use my intelligence and creativity for achieving the targets of the institution in the best possible, sincere and honest way.

## **Educational Qualification:**

- 2022 **Ph. D** in Organic Chemistry, under the supervision of Prof. Kamal K. Kapoor, Department of Chemistry, University of Jammu, Jammu. Thesis entitled: "Synthesis of quinoxaline containing heterocyclic compounds for anti-cancer evaluation".
- M.Phil. in Organic Chemistry (Heterocyclic synthesis) with O gradeunder the supervision of Prof. Kamal K. Kapoor, Department of Chemistry, University of Jammu, Jammu. Dissertation entitled: "A solvent free one-pot conversion of ketones to amides *via* a formal Beckmann rearrangement".
- M.Sc. in Chemistry (specialization: Organic Chemistry) with First Division(72.98 %), University of Jammu, Jammu.
- Bachelor's Degree in Maths, Chemistry, Physics with Distinction(82.78%), with overall 7<sup>th</sup> Rank in the State, University of Jammu, Jammu.
  - ✓ 11 years of research experience in synthetic and medicinal chemistry.

#### Research experience after Ph.D

- Presently working as **Senior Project Associate** in Project entitled, "Synthesis of Reference Standards and in-vitro and in-vivo studies (PK studies) on the metabolites and long term metabolites" (GAP-3102)-reg.w.e.f 08.04.2021 till present.
- Senior Project Associate in Project entitled, "Proposal for novel corona virus (2019-nCoV) testing in human clinical samples at CSIR Indian Institute of Integrative Medicine (IIIM), Jammu" MLP-110014-reg.w.e.f from 14.10.2020 to 31.03.2021.

#### **Computer Skills**

18 months higher diploma in Software Engineering.

# **Fellowships**

**JRF** in a UGC sponsored Research Project entitled, "Unprecedented cascade reactions between ninhydrin and active methylenes: Synthesis of novel and structurally challenging propellanoids, linearly- and spiro-fused heterocyclic compounds for biological evaluation" vide No. F.No.43-193/2014(SR) dated 30.10.2015, from **February 1, 2017-October 17, 2017**.

Selected	Selected Patent and Publications				
S. No.	Authors	Title	Publication's Detail (Journal, Year, Volume, Pages)		
01.	Qazi Naveed Ahmed, Dumbala Srinivasa Reddy, <b>Sheena</b> <b>Mahajan</b> , Giri Teja Illa, Kapendra Sahu, Arpit Soni, Puran Lal Sahu, Zabeer Ahmed	"The Synthesis of 17- Ketoprostanozol molecule"	Patent under Process.		
02.	Dr. Riyaz Ahmed, Gulshan Kumar, <b>Dr. Sheena Mahajan</b> , Dr. Praveen Kumar Verma, Pankaj Singh Cham, Dr. D. Srinivasa Reddy, Dr. Ravi Shankar, Dr. Parvinder Pal Singh	"TCT-Mediated Process for the Preparation of Nafamostat Mesylate and Camostat Mesylate"	Chemistry Select, <b>2023</b> , 8(18), e202300214. DOI: 10.1002/slct.202300214 Publisher: Wiley-VCH		
03.	Rajneesh Paul Sharma, <b>Sheena Mahajan</b> , and Kamal K. Kapoor	"FeCl <sub>3</sub> as an efficient catalyst for the synthesis of styrylquinoxalin-2(1H)-ones"	Synthetic Commun., 2022, 52(7), 1069-1078. DOI: 10.1080/00397911.2022.20 70435 Publisher: Taylor and Francis Online		
04.	Riyaz Ahmed, Gulshan Kumar, <b>Sheena Mahajan</b> , Praveen Kumar Verma, Pankaj Singh Cham, Amit Kumar, Qazi Naveed Ahmed, Dumbala Srinivasa Reddy, Ravi Shankar, Parvinder Pal Singh	"Process for the preparation of NAFAMOSTAT, CAMOSTAT and their derivatives"	No. RMBD & IST/Patents/315 filed on 07, September, <b>2021.</b> Nef No. 0217NF2021		
05.	Varun Sharma, Nancy Slathia, <b>Sheena Mahajan</b> , Kamal K. Kapoor & Vivek Kumar Gupta	"Synthesis, Characterization, Crystal Structure, Molecular Docking Analysis and Other Physico-Chemical Properties of (E)- 2-(3,4- Dimethoxystyryl)Quinoli ne"	Polycyclic Aromatic Compounds, 2021, 1-25. DOI: 10.1080/10406638.2021.19 96409 Publisher: Taylor and Francis Ltd.		
06.	Mahesh K. Zilla, <b>Sheena Mahajan</b> . Rajni Khajuria. Vivek K. Gupta, Kamal K. Kapoor and Asif Ali	"An efficient synthesis of 4-phenoxy-quinazoline, 2-phenoxy-quinoxaline, and 2-phenoxy-pyridine derivatives using aryne chemistry"	RSC advances, 2021, 11(6), 3477-3483 DOI: 10.1039/D0RA09994E Publisher: Royal Society of Chemistry (United Kingdom)		

07.	Sheena Mahajan, Nancy Slathia, Vijay K. Nuthakki,Sandip B. Bharate andKamal K. Kapoor	"Malononitrile-activated synthesis and anti- cholinesterase activity of styrylquinoxalin-2(1H)- ones"	RSC Advances, 2020, 10, 15966-15975. DOI: 10.1039/D0RA02816A Publisher: Royal Society of Chemistry (United Kingdom)
08.	Sheena Mahajan, Nancy Slathia, Kamal K. Kapoor	"Beckmann rearrangement: Thiamine hydrochloride as a remarkable catalyst for one-pot synthesis of amides from ketones"	Tetrahedron Letters, 2020, 61, 151859. DOI: 10.1016/j.tetlet.2020.15185 9 Publisher: Elsevier (United Kingdom)
09	Yeshwinder Saini, <b>Sheena Mahajan</b> , Kamal K. Kapoor, Geeta Hundal and Saikat Kumar Seth	"Diverse structural assemblies of a series of ninhydrin derivatives: Quantitative analyses from experimental and theoretical studies"	Journal of Molecular Structure, <b>2020</b> , 1224, 128920. DOI: 10.1016/j.molstruc.2020.12 8920 Publisher: Elsevier
10.	Rajni Khajuria, <b>Sheena Mahajan</b> , Ambica and Kamal K. Kapoor	"Expeditious synthesis of coumarin-pyridone conjugates molecules and their anti-microbial evaluation"	Journal of Chemical Sciences, 2017, 129(10), 1549-1557. DOI: 10.1007/s12039-017- 1362-7 Publisher: Springer Science+Business Media on behalf of the Indian Academy of Sciences (India)
11.	Bhavana Sharma, <b>Sheena Mahajan</b> and Kamal K Kapoor	"Alum catalysed synthesis of tetrahydrocarbazoles and indoles under ultrasonication"	Indian Journal of Chemistry-B, 2017, 56B, 431-437. http://nopr.niscair.res.in/han dle/123456789/41189 Publisher: CSIR-NISCAIR
12.	Sheena Mahajan, Bhavana Sharma and Kamal K. Kapoor	"A solvent-free one step conversion of ketones to amides via Beckmann rearrangement catalysed by FeCl <sub>3</sub> ·6H <sub>2</sub> O in presence of hydroxylamine hydrochloride"	Tetrahedron Lett., 2015,56(14), 1915-1918. DOI: 10.1016/j.tetlet.2015.02.110 Publisher: Elsevier (United Kingdom)

# **Skills & Experience**

- Compatible in using NMR, IR, Microwave, Chromatography and other lab instruments. Compatible in using basic computer softwares *viz*. Microsoft Word, Microsoft Powerpoint, Microsoft Excel etc.

- Compatible in using Chemistry softwares such as MestReNova, ChemDraw, Mercury etc.
- Experienced in organic synthesis, column chromatography, microwave reactions, NMR and IR spectroscopy equipment, light, temperature and air sensitive synthesis.
- Synthesized various organic compounds such as reference standards including long-term metabolites involved in doping, API synthesis, amides, quinoxalinones, styrylquinoxalin-2(1H)-ones, furo[2,3-b]quinoxalines, 3-(3-substituted phenylimidazo[1,2-a]pyridin-2-yl)quinoxalin-2(1H)-ones, tetrahydrocarbazoles, indoles, coumarin-pyridone conjugates molecules indenopyrans, indenofurans, spiro compounds and various other heterocyclic compounds.
- Experienced in growing solid crystals of organic compounds and their characterization by single-crystal X-ray crystallographic studies.
- Characterization of the synthesized compounds using of <sup>1</sup>H-NMR, <sup>13</sup>C-NMR, DEPT NMR, mass, IR and other spectroscopic techniques.
- Competent at using literature search software, like Sci-finder and Reaxys to obtain published research papers. Representation of scientific work in the form of presentations, posters, seminars and written reports.
- Competent at using computer and have 10 year experience of laboratory work.

#### Presentation/Participation in Symposia/conferences

- 1. **Participated** at the North Zone meeting, 22-24 September, 2011 of the Chemical Research Society of India, held at the Department of Chemistry, University of Jammu, Jammu.
- 2. **Participated** in the 7<sup>th</sup> JK Science Congress (JKSC-11), 13-15 October, 2011, organized by University of Jammu, Jammu in collaboration with J&K State Council for Science and Technology.
- 3. **Poster presentation** in 10<sup>th</sup> JK Science Congress, 14-16 March, 2015, organized by University of Jammu, Jammu, in collaboration with J&K State Council for Science and Technology, Govt. of J&K.

**Title**: FeCl<sub>3</sub>. H<sub>2</sub>O catalysed solvent free one-step conversion of ketones to amides *via* Beckmann rearrangement.

Authors: Sheena Mahajan and Kamal K. Kapoor

- 4. **Participated** in Writing Research Proposal For Funding, 30-31 May, 2016, organized by Faculty of Science, University of Jammu, Jammu, in collaboration with J&K State Science Technology & Innovation Council, Department of Science and Technology, Govt. Of J&K.
- 5. **Oral presentation** in 4<sup>th</sup> J&K Women Science Congress, 1-3 September, 2016, on Focal theme, Career in Science for Women Challenges and Opportunities, held at Govt. College for Women, Gandhi Nagar, Jammu in collaboration with J&K State Science Technology & Innovation Council, Department of Science and Technology

**Title**: Agar: Greener, Novel and Environmental Benign protocol for the synthesis of heterocyclic scaffolds

Authors: Sheena Mahajan and Kamal K. Kapoor

6. **Poster Presentation** in 11<sup>th</sup> National Conference of The Indian Thermodynamics Society on Advances in Chemical Sciences and Thermodynamics, 2-3 December, 2016 organized by Department of Chemistry, University of Jammu, Jammu.

**Title**: Generation of non-conventional electronically depleted olefins

Authors: Sheena Mahajan and Kamal K. Kapoor

7. **Poster Presentation** in 12<sup>th</sup> JK Science Congress, 2-4 March, 2017, on the theme, Science and Technology: Emerging Trends and Innovations, organized by University of Jammu, Jammu, in collaboration with J&K State Science Technology & Innovation Council.

**Title**: Ninhydrin as a versatile synthon for the synthesis of spiro-fused heterocyclic scaffolds.

**Authors**: Sheena Mahajan and Kamal K. Kapoor

8. **Poster Presentation** in National Symposium on Recent Trends in Biotechnology and Drug Discovery, 30-31 March, 2017, held at Department of Biotechnology, Shri Mata Vaishno Devi University, Katra.

Title: Expeditious synthesis of amides and their synthetic applications.

Authors: Sheena Mahajan and Kamal K. Kapoor

9. **Poster Presentation** at International Multi-Stream Conferenceon Research and Society, 29 October, 2017 held at Gujranwala Guru Nanak Institute of Management and Technology, Civil Lines, Ludhiana.

**Title**: Exploration of quinoxaline based heterocyclic motifs.

Authors: Sheena Mahajan and Kamal K. Kapoor

10. **Poster Presentation** in two days National Science Conference on Science, Society and Sustainable Development, 25-26 November, 2017, organized by Poonch Campus, University of Jammu, in collaboration with Govt. Degree College, Poonch.

Title: Greener synthetic approach towards synthesis of heterocyclic scaffolds

Authors: Sheena Mahajan and Kamal K. Kapoor

11. **Poster Presentation** in National Conference on "Skill Enhancement Courses and Employment Generation", 19 December, 2017 organized by Department of Chemistry, Government Degree College Kathua, J&K, India.

**Title**: Greener approach for the syntheses and transformation of quinoxaline derivatives.

Authors: Sheena Mahajan and Kamal K. Kapoor

12. **Poster Presentation**in the international conference on Emerging Trends in Drugs Development and Natural-Products (ETDDNP - 2018), 12-14 January, 2018, organized by the Department of Chemistry, University of Delhi.

**Title**: Greener access to quinoxalines based heterocyclic frameworks involving ninhydrin **Authors**: Sheena Mahajan, Sonakshi Sasan and Kamal K. Kapoor

13. **Poster Presentation** in the two days international conference on Advances in Mathematical, Physical and Computer Sciences (ICAMPCS-2018), 12-13 February 2018, organized by Department of Mathematics, Physics, Chemistry and Computer Science & IT, S.G.G.S. Khalsa College, Mahilpur, Distt. Hoshiarpur, Punjab.

**Title**: Exploration of greener routes for the synthesis of aryl and heteroaryl motifs.

Authors: Sheena Mahajan and Kamal K. Kapoor

14. **Poster Presentation** in National Level Seminar on Science and Technology for the Unreached: Notions, Values and Applicability, 20-21 April, 2018, organized by Govt. Degree College, Samba J&K under the aegis of Indian Science Congress Association (ISCA).

**Title**: Greener approach for the generation of substituted 3,4-dihydroquinoxalin-2-yl-3',3'*a*-dihydrospiro[indene-2,2'-indeno[1,2-*b*]furantriones and 3,4-dihydroquinoxalin-2-yl-9*H*-fluorene-2-carbonitrile derivatives.

Authors: Sheena Mahajan and Kamal K. Kapoor

15. **Poster Presentation** in 6<sup>th</sup> Biennial **international conference** on New developments in drug discovery from natural products and traditional medicines, 15-17 November, 2018, organized by the Department of Natural Products, National Institute of Pharmaceutical Education and Research (NIPER), Sector-67, S.A.S. Nagar, Punjab, India.

**Title**: Synthesis of novel indeno[1,2-b]furan and pyran-3-carbonitrile derivatives of quinoxalinones.

Authors: Sheena Mahajan, Usha Kumari Verma and Kamal K. Kapoor

- 16. Attended two invited lectures entitled "(a) Introduction to Free and Open Source Software, (b) Applications of Free and Open Source Software in General and Research in particular," 3<sup>rd</sup> December, 2018, organized by Department of Computer Science and IT, University of Jammu, Jammu.
- 17. **Poster Presentation** in the **international conference** on "Recent advances in Interdisciplinary Sciences", 11-12 January, 2019, organized by the Department of Electronics, University of Jammu, Jammu in collaboration with IEEE EDS Delhi Chapter and IETE Jammu Centre.

**Title**: Synthesis and Biological evaluation of 3-substituted styryl quinoxaline-2(1*H*)-ones. **Authors**: Sheena Mahajan, Vijay Kumar Nuthakki, Sandip B. Bharate and Kamal K. Kapoor

18. **Oral Presentation** in the 6<sup>th</sup> J&K Women Science Congress on focal theme "Research & Women in Science, Technology and Mathematics — Representation, Challenges & Opportunities", 26-28 February, 2019, held at Govt. P.G. College for Women Gandhi Nagar, Jammu in collaboration with J&K State Science Technology & Innovation Council, Department of Science and Technology.

**Title**: Exploration of greener routes for the synthesis and biological evaluation of nitrogen containing fused heterocyclic motifs

Author: Sheena Mahajan

19. **Poster Presentation** in the National Conference on "Emerging trends in Chemical Sciences (ETCS-2019), 14-15 March, 2019, organized by the Department of Chemistry and Chemical Sciences, Central University of Jammu, Rahya-Suchani (Bagla), Samba, J&K.

**Title**: Organo-SulfurCatalyzed Solvent Free One-Step Conversion of Ketones to Amides *via* Beckmann Rearrangement

Authors: Sheena Mahajan, Rajneesh Paul Sharma and Kamal K. Kapoor

- 20. Attended one day awareness seminar on "Protection of women against sexual harassment at work place", 25 March, 2019, organized by the office of JUICCASH, University of Jammu, Jammu.
- 21. **Poster Presentation** in the **international conference** on "Recent Advances in Fundamental and Applied Sciences (RAFAS 2019)", 5-6 November, 2019, organized by School of Chemical Engineering and Physical Sciences, Lovely Faculty of Technology and Science, Lovely Professional University, Punjab.

**Title**: Synthesis And Molecular Docking Studies Of Quinoxalinone Analogs As Potential Cholinesterase Inhibitors For Alzheimer's disease.

Authors: Sheena Mahajan and Kamal K. Kapoor

22. **Oral Presentation** inNational Level Seminar on Science and Technology: Rural Development, 10-11 December, 2019, organized by Govt. Degree College, Samba, J&K under the aegis of Indian Science Congress Association.

**Title:** Facile synthesis of styrylquinoxalinones*via* polymer supported metal catalyst.

Authors: Lalita Devi, Rajneesh Paul Sharma, Sheena Mahajan and Kamal K. Kapoor

23. **Oral Presentation** in the 14<sup>th</sup> JK Science Congress 2019, A National Event on the theme, "Science and Technology for a sustainable future", 20-22 December, 2019, organized by the University of Jammu, Jammu.

**Title**: Expeditious synthesis and biological evaluation of quinoxalinone analogs.

Authors: Sheena Mahajan and Kamal K. Kapoor

24. **Oral Presentation** in the two day seminar on Sustainable Living: An Environmental Challenge, 19-20 February, 2020, organized by Govt. College for Women, Parade Ground Jammu, J&K under the aegis of Internal Quality Assurance Cell sponsored by Dept. of Higher Education, J&K.

**Title**: Synthesis of Nitrogen containing heterocyclic molecules and their biological evaluation.

Authors: Sheena Mahajan, Lalita Devi, Rajneesh Paul Sharma and Kamal K. Kapoor

- 25. **Participated** in webinar on "How to access Taylor and Francis Journals", 19 May 2020, organized by Taylor and Francis group.
- 26. **Participated** in AWSAR (Augmenting Writing Skills for Articulating Research) webinar on Popular Science Writing, 25 June 2020 organized by the Department of Science and Technology (DST), Government of India and Vigyan Prasar (VP).
- 27. **Participated** in **international webinar** on Role of Science and Technology to combat Covid-19, 21 July 2020, organized by Internal Quality Assurance Cell, Hans Raj Mahila Vidyalaya, Mahatma Hans Raj Marg, Jalandhar (Punjab) India.
- 28. **Participated** in AWSAR (Augmenting Writing Skills for Articulating Research) webinar on Popular Science Writing, 22 July 2020 organized by the Department of Science and Technology (DST), Government of India and Vigyan Prasar (VP).
- 29. **Participated** 3 days virtual workshop on Research Writing Effectively, Efficiently and Expeditiously: Exploring Advance features of MS-Word, 23-25 July 2020 organized by Khalsa College for Women, Sidhwan Khurd, Ludhiana, India
- 30. **Participated** in AWSAR (Augmenting Writing Skills for Articulating Research) webinar on Popular Science Writing, 24 July 2020 organized by the Department of Science and Technology (DST), Government of India and Vigyan Prasar (VP).
- 31. **Poster presentation** in three days virtual **international conference** on Emerging Research Trends in Chemical Sciences (ERTCS-2020), 24-26 July 2020, organized by PG Department of Chemistry, Govt. Post Graduate College Rajouri, Jammu, India.

**Title**: Malononitrile activated synthesis of styrylquinoxalin-2(1H)-ones and their biological evaluation as cholinesterase inhibitors for Alzheimer's disease treatment

Author: Sheena Mahajan

32. **Participated** in AWSAR (Augmenting Writing Skills for Articulating Research) webinar on Popular Science Writing, 27 July 2020 organized by the Department of Science and Technology (DST), Government of India and Vigyan Prasar (VP).

- 33. **Participated** in workshop titled "Deep Eutectic Solvents for Environmental Remediation and Energy Storage" sponsored by Scheme For Promotion of Academic and Research Collaboration (SPARC) through Ministry of Human Resource Development (MHRD), Government of India, 29-30 July 2020, organized by Indian Institute of Technology, Guwahati, Assam, India.
- 34. **Attended** online webinar on "Better Things-For-Better-Living-Through-Chemistry" with theme "Scope, Importance, Applications and Career options, 1 August 2020, organized by Department of Chemistry and Pharmaceutical Chemistry, Dolphin (P.G.) Institute of Biomedical and Natural Sciences, Manduwala, Dehradun, India.
- 35. **Attended** webinar on "Pharmacovigilance: A Drug Safety Initiative", 4 August 2020, organized by Guru Gobind Singh College of Pharmacy.
- 36. **Participated** in two-day webinar series on Advances in Pure and Applied Chemistry, 6-7 August, 2020through a virtual platform, organized by Presidency College, Chennai.
- 37. **Participated** in AWSAR (Augmenting Writing Skills for Articulating Research) webinar on Popular Science Writing, 7 August 2020 organized by the Department of Science and Technology (DST), Government of India and Vigyan Prasar (VP).
- 38. **Participated** in one day National Webinar on "Recent trends in Rough Set, Fuzzy Set Theory and Material Science", 08 August, 2020, organized by Dept. of Mathematics & Dept. of Physics in Collaboration with IQAC, Shri Vyankatesh College, Deulgaon Raja, Dist. Buldana.
- 39. **Attended** the full agenda of ACS on Campus India Virtual Event on 10 August, 2020.
- 40. **Participated** in Webinar On "How to Read Scientific Literature?", 11 August, 2020 organized by MANAV The Human Atlas Initiative and successfully completed the online evaluation including the English Proficiency Test.
- 41. Attended Two Days online Training Workshop on "Intellectual Property Rights" under CSIR-Integrative Skill Initiatives From 7<sup>th</sup> to 8<sup>th</sup>March 2022 at CSIR-IIIM, Jammu.
- 42. Successfully completed the course spanning over 12 modules of Energy Literacy Training of the Energy Swaraj Foundation organized by CSIR-IIIM on 18<sup>th</sup> April 2023.

#### **Achievements**

**3<sup>rd</sup> prize** for **best poster presentation** in 6<sup>th</sup> Biennial international conference on "New developments in drug discovery from natural products and traditional medicines", 15-17 November, 2018, organized by the Department of Natural Products, National Institute of Pharmaceutical Education and Research (NIPER), Sector-67, S.A.S. Nagar, Punjab.

1<sup>st</sup> prize for oral presentation in 14<sup>th</sup> JK Science Congress 2019, A National Event On The Theme, "Science and Technology for a sustainable future", 20-22 December, 2019, organized by University of Jammu, Jammu.

**2<sup>nd</sup> prize** for **best poster presentation** in three days virtual **international conference** on Emerging Research Trends in Chemical Sciences (ERTCS-2020), 24-26 July 2020, organized by PG Department of Chemistry, Govt. Post Graduate College Rajouri, Jammu, India.

#### Referees:

# (a) Dr. Kamal K. Kapoor,

Professor and Head of the Department of Chemistry, University of Jammu, Jammu,

INDIA

(e-mail: kamalkka@gmail.com)

### (b) Dr. D. Srinivasa Reddy,

Director,

CSIR-Indian Institute of Chemical Technology, Hyderabad,

INDIA

(e-mail: reddy.ds@iiim.res.in)

#### (c)Dr. Qazi Naveed Ahmed

Principal Scientist and Head Natural Products & Medicinal Chemistry Division,

CSIR-Indian Institute of Integrative Medicine,

Canal Road, Jammu,

**INDIA** 

(e-mail: naqazi@iiim.ac.in)

# (d) Dr.Sandip B. Bharate

Senior Principal Scientist

CSIR-Indian Institute of Chemical Technology, Hyderabad,

**INDIA** 

(e-mail: sbharate@iiim.ac.in)

#### (e) **Dr.Parvinder Pal Singh**

**Principal Scientist** 

Natural Products & Medicinal Chemistry Division,

CSIR-Indian Institute of Integrative Medicine,

Canal Road, Jammu,

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