Dr. Rahul Panwar

Office Address: Room no 1503, 50B-Dong, UNIST-Gil Eonyang-Eup, Ulju-Gun, ULSAN, Republic of South Korea

대한민국 울산광역시 울주군 언양읍 UNIST길 50B동 1503호.

Mobile: +919711014796 (WhatsApp)

E-mail: *rahulchemistry2010@gmail.com*

Current Position: I am working as a postdoctoral fellow at department of chemistry at the Ulsan National Institute of Technology (UNIST), Ulsan, South Korea

- Here, I am involved in medicinal chemistry projects, the design and synthesis of rheumatoid arthritis active medicinal compounds.

Research Interests:

I have a strong track record of achievement in organic synthesis, demonstrating deep knowledge of modern synthetic multistep organic chemistry and reaction mechanisms, exemplified by experience in methodology development, antibacterial agents, amphipathic peptides having surfactant properties.

My research Interest is;

- Organic Synthesis / Medicinal Chemistry
- Amino acid chemistry, total synthesis of natural products, asymmetric synthesis
- Development of a new synthetic method for the formation of new skeletons.
- To explore the chemistry of various precursors like Ketenedithioacetals, Keteneaminals and 2- Pyranones.
- Metal-catalyzed C-C, C-N, C-O, C-B and C-S bond forming reactions.
- Development of new catalytic system.
- Design, synthesis, and application of photo physical compounds.
- Synthesis of Biological active Natural and Unnatural products.

Academic Information:

- **PhD** in Organic Chemistry (**2019**), University of Delhi, North Campus, India.
- **The Thesis is entitled:** ***Synthesis of Functionalized Carbocycles and Azaheterocycles Compounds from Ketene dithioacetals.***

- Organic Synthesis, I have developed and optimized of a new methods for the synthesis of various biologically active, highly functionalized carbocycles and azaheterocycles molecules and their biological and photophysical applications.
- **Thesis Advisor:** Dr. Ramendra Pratap (Associate Professor)
- **2008-2010:** Master of Science with 1st division (PG, MSc), Organic Synthesis, C.C.S University, Meerut, India.
- **2005-2008:** Bachelor of Science with 1st division (UG, BSc**),** Chemistry, Zoology, Botany**,** C.C.S University, Meerut, India.

International Experience:

PhD Internship with Prof. P. Schollhammer **March 2016-July 2016**

University of UBO, Brest, France

- I worked preparation of Iron, Catalyst for the Application of Small molecules in the field of Organo metallic chemistry

Research Experience:

Postdoctoral Research **Oct 2019-31 May 2022**

IIT Kanpur, Kanpur, India

- I was involved in two different medicinal chemistry projects, the design and synthesis of antibacterial pyridinium oxime salts and the synthesis of amphipathic peptides having surfactant properties.

Ph.D. Research with Dr. Ramendra Pratap **Jan 2014-Aug 2019**

University of Delhi, India

- Development of new chemical entity from ring transformation reaction
- Metal-catalyzed and Metal-free synthesis of functionalized cabocycles and azaheterocycles molecules and their biological and photo physical applications

Project assistant with Dr. R. B. Mathur **July 2011-March 2012**

CSIR-NPL, New Delhi, India

- I worked preparation of High-Density Graphite, Graphene, and Carbon Nanotube for the Applications of Material Chemistry.

Manuscripts under preparation from Postdoc work

- R. Joshi, **R. Panwar**, R. Ramapanicker. (**Synthesis and Investigation of the Physicochemical Properties of Proline - Cyclopropane Derived Anionic Surfactants**).
- **R. Panwar**, Sidharth Chopra and R. Ramapanicker. (**Synthesis and study of the antibacterial activity of functionalized pyridinium oxime salts**).
- R. Joshi, **R. Panwar**, R. Ramapanicker. (**Synthesis and Investigation of the Physicochemical Properties of di-Proline Derived Anionic Surfactants).**

List of Publications: (Manuscript published From PhD)

Total Citations: 64 and h-index: 5

1. Elagamy, A.; Shaw, Ranjay Shaw.; **Panwar, R**.; Shally.; Ram, V. J.; Pratap, R. **(Synthesis of Highly Functionalized Spirobutenolides via Nitroalkane Mediated Ring Contraction of 2-Oxobenzo[h]chromenes through Denitration).** Accepted manuscript in *J. Org. Chem.*, DOI: 10.1021/acs.joc.8b02257. Impact factor: 4.80.
2. **Panwar, R**.; Shally.; Shaw, Ranjay.; Elagamy, A.; Shah, C.; Ram, V. J.; Pratap, R. **(Transition Metal Free Tactical Synthesis of Thiomethylated Benzenes from Aryl /heteroaryl / Cyclopropyl Methyl Ketones).** *Tetrahedron*, https://doi.org/10.1016/j.tet.2020.131183. Impact factor: 2.64.
3. Shally, Ismail Althgafi, Divya Singhal, **Rahul Panwar**, Ranjay, Shaw, Amar, Elagamy, Ramendra Pratap**. (Base-promoted regioselective synthesis of 1,2,3,4-terahydroquinolinesand quinolines from N-Boc-3-piperidone).** *Tetrahedron*, **2019**, *75*, 130695. Impact factor: 2.64.
4. **Panwar, R**.; Shally.; Shaw, R.; Pratap, R. **(Substituent dependent chemoselective synthesis of highly functionalized benzo[*h*]quinolines and 4-benzylpyrans from 2-methyl-5-nitro-benzonitrile**). *SynOpen.* **2018**, *2*, 276-284. Impact factor: 2.72
5. **Panwar, R.;** Shally.; Shaw, R.; Pratap, R. (**Base mediated chemoselective synthesis of *m*-teraryls through ring transformation of 2*H*-pyran-2-ones by 2-(1-arylethylidene) malononitriles**). *Org. Biomol. Chem.* **2018**, 16, 8984-9002. Impact factor: 3.56.
6. Althagafi, I.; Shaw, R.; Tang, C-R.; **Panwar, R.;** Shally, Sinha, C.; Kumar, A.; Zheng, Y-T.; Pratap, R. (**Chemoselective synthesis of isolated and fused fluorenones and their**

photophysical and antiviral properties). *Org. Biomol. Chem.* **2018**, 16, 7477-7487. Impact factor: 3.56

7. **Panwar, R.;** Singh, S.; Yadav, P.; Shally; Shaw, R.; Kumar, A.; Pratap, R. (**Synthesis of partially reduced imidazo[1,2-*a*] pyridines through an unprecedented base-Mediated (4+2) cyclization**). *Synlett*. **2017**, 28, 819-824. The article has been highlighted for its important insight in *Synfacts**, 2017***, 13, 0581. Impact factor: 2.36
8. Yadav, P.; Shaw, R.; **Panwar, R.;** Sahu, N, S.; Kumar, A.; Pratap, R. (**Chemoselective 6-*exo-trig* versus 6-*exo-dig* carbocyclization strategy for the synthesis of functionalized biaryls: An investigation of Baldwin's rule**). *Asian J. Org. Chem.* **2017**, *6*, 1394-1397. Impact factor: 2.78.
9. Singh, S.; Reddy, T. S.; **Panwar, R.;** Misra, R.; and Pratap, R. (**2- (2, 2- Bis- benzylamino-1-cyano vinyl) - benzonitrile: A selective Turn-off Fluorescent Cu^{+2} sensor**). *Chem Select***,** **2016**, *1*, 2576-2580. Impact factor: 1.71
10. Singh, S.; **Panwar, R.;** Yadav, P.; Athagafi, I.; Sahu S.N.; Pratap, R. (**Precursor directed regioselective synthesis of partially reduced benzo[*e*]indene through oxidative cyclization and benzo[*h*]quinolines**). *RSC Adv.* **2015**, *5*, 18335-18341. Impact factor: 3.04
11. Singh, S.; **Panwar, R.;** Althagafi, I.; Sharma, V.; Chaudhary, S.; Pratap, R. (**Base mediated regioselective synthesis of conjugated enones through molecular oxygen**). *Tetrahedron Lett.* **2015**, *56*, 5203–5208. Impact actor: 2.37
12. Sahu, S.N.; Gupta, M. K.; Singh, S.; Yadav, P.; **Panwar, R.;** Kumar, A.; Ram, V. J.; Kumar, B.; Pratap, R. (**One-pot synthesis of tetrasubstituted thiophenes: [3 + 2] annulation strategy**). *RSC Adv.* **2015**, *5*, 36979-36986. Impact factor: 3.04
13. Singh, S.; Althagafi, I.; Yadav, P.; **Panwar, R.;** Kumar, A.; Pratap, R. (**Base mediated synthesis of α-aminated aroyl/acetylnaphthalenes through [4+2]annulations**). *Tetrahedron*. **2014**, *70*, 8879-8884. Impact factor: 2.64

Book Chapter:

1. Batra, N.; **Panwar, R.;** Pratap, R.; Nath, M.; (**Microwave-assisted synthesis and functionalization of six-membered oxygen heterocycles**). Taylor & Francis Group, In book: Advance in microwave chemistry, pp. 217-256. DOI: 10.1201/9781351240499-5

Awards, Scholarships, and Achievements:

- **2015**: I was selected as a **Raman Charpak Fellowship** (The Raman-Charpak Fellowship is the only Indo-French bilateral Fellowship program jointly funded by the **DST**, **India** and Government of **France**.
- **2013: Secured 57th**All India Rank in Junior Research Fellowship (**JRF**) sponsored by Council of Scientific and Industrial Research (**CSIR-UGC) in Chemical Science.**
- **2013: Secured 1090th** All India Rank (**90.74** percentile) in **GATE (Graduate aptitude test of engineering)** sponsored by Indian Institute of Technology **(IIT)** Delhi in **Chemical Science.**

Poster and Oral Presentation at Conferences/ Symposia/workshops:

1. **Panwar, R.;** Pratap, R.; participated as a poster presentation (**Base induced Cascade Synthesis of Functionalized Benzo[*h*] Quinoline by Inter and Intra molecular C-C and C-N bond formation**) in the 9th National Conference on '**Solid State Chemistry and Allied Areas (ISCAS-2015)"** organized by **Bhaskaracharya College of Applied Sciences**, Department of Chemistry, **University of Delhi, North Campus, New Delhi, India**.
2. **Panwar, R**,; Pratap, R.; participated as a poster presentation (**Designed, Synthesis and Anticancer activity if benzo[*h*]quinolines**) in the International Conference on "**Current Challenge in Drug Delivery"**organized by Department of Chemistry **MNIT, Jaipur Rajasthan.**
3. **Panwar, R.;** Pratap, R.; participated as a poster presentation (**2- (2,2- Bis- benzylamino- 1 - cyano- vinyl)- benzonitrile: A Selective Turn-off Fluorescent Cu^{2+} sensors**) in the International Conference on "**New Frontier in Carbohydrate Chemistry and Biology"** organized by Department of Chemistry, **D.U, North Campus, New Delhi, India.**
4. **Panwar, R.;** Pratap, R.; participated as a poster presentation **(Synthesis of partially reduced imidazo[1,2-*a*] pyridines through an unprecedented base-Mediated (4+2) cyclization**) in the International Conference on "**CFOS-2017"** organized by Department of Chemistry, **IIT Roorkee, India.**
5. **Panwar, R.;** Pratap, R. Participate as a poster presentation **(Synthesis of partially reduced imidazo[1,2-*a*] pyridines through an unprecedented base-Mediated (4+2) cyclization**) in the International Conference on "**ICETCS-2018"** organized by Department of Chemistry, DDU Gorakhpur University, Gorakhpur, U.P-India

Technical and Experimental Skills:

- I can easily operate **NMR, HRMS, IR, UV** instruments and interpret the **^{1}H and ^{13}C NMR** data and other spectra. I have also learned how to operate **Cyclic Volt Ammeter**. I have also performed Microwave-mediated reactions. Other experimental techniques like **Column chromatography**, handling of air and moisture sensitive reagents in (**Glove box and Schlenk line**).

- I have extensive hands-on experience in synthesis, purification and analytical characterization including HPLC, MS, NMR, Comb flash, etc and also experience proficient in mining scientific literature using SciFinder, Reaxys, etc

References:

Dr. Ramendra Pratap (Asst. Prof.) **(Ph.D. Supervisor)** Department of Chemistry University of Delhi, North Campus Delhi-110007, (INDIA) **Mob. No**. +91-7840010870 **Email ID**:**rpratap@chemistry.du.ac.in** **ramendrapratap@gmail.com**	**Prof Ramesh Ramapanicker** **(Post doc Supervisor)** Department of Chemistry, Indian Institute of Technology (IITK), Kanpur, U.P, INDIA Mob. No. +91-9621745928 Email ID: rameshr@iitk.ac.in	**Prof. Dr. Schollhammer Philippe** **[Co-Director of the UMR-CNRS 6521]** Department of Chemistry, University of Brest BREST CEDEX 3 (FRANCE) **Email ID:** **philippe.schollhammer@univ-brest.fr**
Prof. Dr. Mahendra Nath (**PhD Committee Member**) Department of Chemistry University of Delhi, NorthCampus Delhi-110007, (INDIA) **Mob. No**. +91-9811889357 **Email ID**: **mnath@chemistry.du.ac.in** **mnathchemistry@gmail.com**		

The Declaration: I hereby declare that all the information furnished here is true, complete and correct to the best of my knowledge and belief.

Place: IIT, Kanpur **(RAHUL PANWAR)**