



Dr. Harsimran Kaur

Personal Information

Name: **Dr. Harsimran Kaur**
Father's Name: **Mr. Surinder Singh**
Mother's Name: **Mrs. Jasbir Kaur**
Date of Birth: **1 February 1990**

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Ph.D. Details

Ph.D. Supervisor:
Dr. Ram Kuntal Hazra
Date of Registration:
09 Jan 2014
Date of Award:
17 Dec 2019
Enrollment Number:
SF-I/Ph.D./3778

Profile

I am a highly motivated and accomplished individual having a doctorate in Chemistry with specialization in physical chemistry. I have also done 2.5 years of post doctoral research at IIT Bombay. My experience as a researcher over the years has helped me develop a niche expertise in conducting thorough research and skills to analyze various scientific literature. I have published scientific papers extensively in journals of international repute. I possess excellent writing and communication skills.

I want to work in the field of Intellectual property rights as it is a thriving domain where innovation and preservation of human knowledge leads to advancement of society. It is also a highly intersectional field where one gets to be updated with the state of the art technology and science which aligns with my interests.

I have successfully qualified **Patent Agent examination 2023** (Applicant ID - 23005848). I have also qualified the written examination of WISE Internship in IPR (erstwhile WOS-C, KIRAN IPR), awaiting interview.

Work Experience

2020-2022 **Post Doctoral Fellow** **IIT Bombay**
2.5 years of experience as a post doctorate fellow at IIT Bombay

Education

2014-2019 **Doctorate of Philosophy (Ph.D.)** **Delhi University**
Awarded Ph.D. degree on December 17, 2019 from University of Delhi.
Thesis Title: "Some aspects of neutral and charged exciton complexes of 2-D and 3-D anisotropic quantum dots and transition metal dichalcogenides in magnetic field by exact multipole expansion of coulomb interactions"
Qualified Delhi University Ph.D entrance examination with 2nd rank in Physical Chemistry 2014

2018-2019 **Awarded Direct SRF from CSIR** **Delhi University**
Qualified for Direct Senior Reserach Fellowship (SRF) from CSIR and awarded the same in May 2018

2011 - 2013 **Master's Degree in Chemistry** **Hansraj College**
Completed Post graduation in MSc. Chemistry from Department of Chemistry University of Delhi while being attached to Hans Raj College with 74.28%.

2008 - 2011 **Bachelor's Degree with Honors in Chemistry** **Hansraj College**
Completed graduation in BSc.(H) Chemistry from Hans Raj College, University of Delhi with 76.4%.

2008 **Senior Secondary Certificate Examination** **Presentation Convent**
Passed Senior Secondary Certificate Examination from CBSE with 86% in the year 2008 from Presentation Convent, Delhi.

2006 **Secondary Certificate Examination** **Hans Raj Smarak School**
Passed Secondary Certificate Examination from CBSE with 89% in the year 2006 from Hans Raj Smarak School, Delhi.

OS Preference

GNU/Linux ★★★★★

Windows ★★★★★

Languages

Hindi

Proficient in English

Publications

- 1. Binding energies and chemical potential of neutral and charged exciton-complexes of transition metal dichalcogenides/anisotropic 2-D quantum dots in magnetic field by exact multi-pole expansion of coulomb correlations.**
Harsimran Kaur, Shivalika Sharma, Priyanka Aggarwal and Ram Kuntal Hazra
Physica E: Low-dimensional Systems and Nanostructures, 108, pp.347-357 (2019)
- 2. Strongly Correlated Excitons of Regular/Irregular Planar Quantum Dots in Magnetic Field: Size-Extensive Bi-and Triexciton (e-h-e-h and e-e-h/e-h-h) Systems by Multipole Expansion.**
Harsimran Kaur, Sunny Singh, Shivalika Sharma, Priyanka Aggarwal, Sambhav Yadav and Ram Kuntal Hazra
ACS Omega, 2(10), pp.7410-7423 (2017)
- 3. Multi-excitonic (n=1, 2 and 3) quantum dots in magnetic field: Analytical mapping of correlations (exchange) by multipole expansion.**
Sunny Singh, Harsimran Kaur, Shivalika Sharma, Priyanka Aggarwal and Ram Kuntal Hazra
Physica E: Low-dimensional systems and Nanostructures, 88, 289-297 (2017)
- 4. Addition energy and magnetization of 3-D multicarrier anisotropic quantum dots in magnetic field by exact multi-pole expansion of coulomb correlations.**
Shivalika Sharma, Priyanka Aggarwal, Harsimran Kaur, Sambhav Yadav and Ram Kuntal Hazra
Physica E: Low-dimensional Systems and Nanostructures, 104, pp.206-215 (2018)
- 5. Exact spectra of strong coulomb correlations of 3-D 2-e harmonic dots in magnetic field.** Priyanka Aggarwal, Shivalika Sharma, Harsimran Kaur, Sunny Singh, and Ram Kuntal Hazra
Physica E: Low-dimensional systems and Nanostructures, 85, 56-64 (2016)
- 6. Exact e-e (exchange) correlations of 2-D quantum dots in magnetic field: Size extensive-electron systems via multi-pole expansion.** Priyanka Aggarwal, Shivalika Sharma, Sunny Singh, Harsimran Kaur and Ram Kuntal Hazra
Physica E: Low-dimensional systems and Nanostructures, 88, 26-34 (2017)
- 7. Shell structure and paramagnetism of 3-DN-e anisotropic (ellipsoidal) quantum dots: Exact multi-pole expansion of coulomb interaction under fermionic exchange symmetry.** Shivalika Sharma, Priyanka Aggarwal, Harsimran Kaur and Ram Kuntal Hazra
AIP Advances, 8(9), p.095116 (2018)
- 8. Electronic spectra and chemical potential of 2-D multi-electron quantum dots in magnetic field: exact multi-pole expansion of coulomb correlation.** Priyanka Aggarwal, Shivalika Sharma, Harsimran Kaur, Sambhav Yadav and Ram Kuntal Hazra
Journal of Physics Communications, 3, 035011 (2019)
- 9. Analytical treatment to Helium isoelectronic ions via Green function expansion of Coulomb interactions: perturbation calculations of ground-state energies via Hydrogenic orbitals.** Shivalika Sharma, Aggarwal, Harsimran Kaur and Ram Kuntal Hazra
Journal of Indian Chemical Society, 96, 775 (2019)

I hereby declare that the above mentioned information is correct up to my knowledge and I bear responsibility for the authenticity of the above mentioned particulars.

Dr. Harsimran Kaur