

Dr. Neha Aggarwal
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Ambala Cant.-133001
Haryana

Objective:

I inspire to work in a challenging and responsible position where I can offer the best of my services and at the same time improve myself. Seeking a position to utilize my skills and abilities in your university that offers professional growth while being resourceful, innovative and flexible.

Educational Profile:

Degree	School/College	University/Board	Percentage/ C.G.P.A
CSIR-NET Qualified (2011)	CHEMISTRY		
Ph.D. in Physical Chemistry (2017)	Guru Nanak Dev University, Amritsar	G.N.D.U	
Pre-Ph.D. course work (2011)	Guru Nanak Dev University, Amritsar	G.N.D.U	10.00
MSc (Hons. School) Chemistry (2011)	Guru Nanak Dev University, Amritsar	G.N.D.U	83%
BSc (Hons. School) Chemistry (2009)	Guru Nanak Dev University, Amritsar	G.N.D.U	77%
12 th (2006)	Khalsa Collegiate Sen.Sec. School, Amritsar	C.B.S.E	83%
10 th (2004)	Manav Public school, Amritsar	C.B.S.E	93%

Achievements :

1. CSIR-NET qualified in first attempt
2. Merit position in 10th C.B.S.E board exams.
3. Gold medalist in BSc (Hons. School) Chemistry.
4. Gold medalist in MSc (Hons. School) Chemistry
5. Awarded Shri Shyam Sunder Nayyar Memorial Trophy for standing first in university in MSc (Hons. School) Chemistry.
6. Eleven publications in international journals.
7. Best poster award in **8th National Conference on Thermodynamics of Chemical, Biological and Environmental Systems** at Babasaheb Bhimrao Ambedkar University, Lucknow, India, 25-26th Nov, 2013.
8. Best poster award in **One day National Seminar on Emerging Trends in Physical and Chemical Science in Modern Era** at Markanda National College, Shahabad Markanda on 3rd Nov, 2018.
9. Dr. Neha Aggarwal received certificate of appreciation for performing outstanding in National level chemistry quiz based on corona virus organized by M.N. College, Shahabad on 28th April,2020.
10. Dr. Neha Aggarwal received certificate of appreciation for performing outstanding in Online National Awareness program on COVID-19 organized by Indian Association of Physics Teachers, Regional Council, Madhya Pradesh on 13th May,2020.

Papers Published:

1. Neha Aggarwal, Micellization Behaviour of Cationic Surfactants in the Presence of Food Additives: Conductance and Spectroscopic Investigations, Current Physical Chemistry, UGC approved Journal (2020) 1877-9476.
2. H. Kaur, Neha Aggarwal, A. K. Sood, T. S. Banipal, Analysis of micellar, thermodynamic and structural parameters of gemini surfactants in aqueous solutions of vitamins, Journal of molecular liquids 310 (2020) 113237. **ISSN No. 0167-7322; Impact Factor 4.561.**
3. Neha Aggarwal, Interactions between Saccharides and Phosphate-based Salts: A Mini Review on their Physicochemical Properties, JCSE, 2(2) 102-104. **ISSN No. 2642-0406.**
 - a. **A Mini-review in Journal of Chemical science and Engineering.**
4. N. Kaur, P. Sharma, T. S. Banipal, P. K. Banipal, **Neha Aggarwal**, Effect of Caffeine on the Physicochemical Properties of Neurotransmitter GABA: Thermodynamic and Theoretical

Approach, *J. Chem. Eng. Data* **2019**, **64**, 3919-3932. ISSN No. 0021-9568; Impact Factor 2.323.

5. **Neha Aggarwal**, Micellization Behaviour of Sodium Dodecylsulfate in Mixed Aqueous Solutions of Phosphate-based Inorganic Salts at Different Temperatures, *Gyan Vimarsh: An Inter-Disciplinary Research Journal*, RNI No. HARMUL/2018/75879, ISSN: 2581-6845.
6. **Neha Aggarwal**, M. Sharma, T. S. Banipal, P. K. Banipal, Influence of phosphate based salts on enthalpy of dilution and isentropic compressibility properties of saccharides and their derivatives in aqueous solutions, *J. Chem. Eng. Data* 2019, 64, 2, 517-528. ISSN No. 0021-9568; Impact Factor 2.323.
7. P. K. Banipal, M. Sharma, **Neha Aggarwal**, T. S. Banipal, Investigations to explore interactions in (polyhydroxy solute + L-ascorbic acid + H₂O) solutions at different temperatures: Calorimetric and viscometric approach, *J. Chem. Thermodyn.* 102 (2016) 322-332. ISSN No. 0021-9614; Impact Factor 2.726.
8. P. K. Banipal, **Neha Aggarwal**, T. S. Banipal, Viscosities of Some Saccharides in Aqueous Solutions of Phosphate-Based Inorganic Salts, *J. Chem. Eng. Data* 61 (2016) 1992-2001. ISSN No. 0021-9568; Impact Factor 2.323.
9. P. K. Banipal, **Neha Aggarwal**, T. S. Banipal, Calorimetric and isentropic compressibility studies on (saccharide/methyl glycoside/deoxy-derivative + KH₂PO₄ + H₂O) solutions at different temperatures, *J. Mol. Liq.* 215 (2016) 603-611. ISSN No. 0167-7322; Impact Factor 4.561.
10. P. K. Banipal, **Neha Aggarwal**, T. S. Banipal, Effects of phosphate-based monobasic and tribasic inorganic salts on hydration characteristics of saccharides and their derivatives, *J. Mol. Liq.* 211 (2015) 78-89. ISSN No. 0167-7322; Impact Factor 4.561.
11. P. K. Banipal, **Neha Aggarwal**, T. S. Banipal, Study on interactions of saccharides and their derivatives with potassium phosphate monobasic (1:1 electrolyte) in aqueous solutions at different temperatures, *J. Mol. Liq.* 196 (2014) 291-299. ISSN No. 0167-7322; Impact Factor 4.561.
12. P. K. Banipal, V. Singh, **Neha Aggarwal**, T. S. Banipal, Hydration behaviour of some mono-, di-, tri- saccharides in aqueous sodium gluconate solutions at (288.15, 298.15, 308.15 and 318.15) K, *Food Chem.* 168 (2015) 142-150. ISSN No. 0308-8146; Impact Factor 5.399.

13. P. K. Banipal, A. K. Hundal, **Neha Aggarwal**, T. S. Banipal, Studies on the interactions of Saccharides and Methyl Glycosides with Lithium Chloride in aqueous solutions at (288.15 to 318.15) K, *J. Chem. Eng. Data* 59 (2014) 2437-2455. **ISSN No. 0021-9568; Impact Factor 2.323.**

Papers presented in conferences:

1. Dr. Neha Aggarwal participated in one day international webinar on production of radionuclides and their applications in medical imaging & therapy organized by department of chemistry, Chaudhary Bansi Lal University, Bhiwani, Haryana on 10th June, 2020.
2. Dr. Neha Aggarwal participated in one day national webinar on Coronavirus: Myth exploded organized by alumni association of GMN College, Ambala Cantt. On 8th June, 2020.
3. Dr. Neha Aggarwal participated in webinar on climate change: International developments, National Actions and way forward organized by botanical association, DAV College, sector-10, Chandigarh on 5th June, 2020.
4. Dr. Neha Aggarwal presented a paper entitled “ Impact of COVID-19 on science and technology” in International webinar on Psychosocial and political impact of COVID-19 on 29th May, 2020 organised by GMN College, Ambala Cantt.
5. Dr. Neha Aggarwal participated in one day webinar on Enhancing research effectiveness using Scopus, Science direct and Mendeley organized by Faculty development center, Kurukshetra University, Kurukshetra in collaboration with ELSEVIER on 1st May, 2020.
6. Presented a paper, “ Contribution of Sir Chhotu Ram in scientific reforms in Agriculture” in Two day national seminar on Relevance of Sir Chhotu Ram’ s Philosophy in the 21st century on 28-29 February, 2020 at GMN College, Ambala Cantt. Sponsored by DGHE.
7. Presented a paper ,” Relevance of assessment and accreditation in higher education: An overview” in one day national seminar on role of stakeholders in imparting quality higher education on 7th November, 2019 at GMN college, Ambala Cantt.
8. Presented a paper, “ Scientific significance of sanskars in hinduism” in one day interdisciplinary national seminar and shankaracharya samman samaroh on importance of sanskar in modern era on 28th August, 2019 at GMN college, Ambala Cantt,

9. Presented a paper “ Calorimetric and compressibility studies of saccharides and their derivatives in aqueous solutions of potassium phosphate monobasic at different temperatures” in 2nd International conference on innovations in chemical, biological and environmental sciences on 27-28 February, 2019 at Arya (P.G) College, Panipat, Haryana.
10. Presented a paper “ Sacrificial role of women of India in 19th and 20th century” at one day national seminar on challenges in gender sensitisation, at GMN College, Ambala Cantt on 23rd February, 2019.
11. Presented a paper “ Role of science and technology in Swachh Bharat” at one day interdisciplinary national seminar on relevance of Swachh Bharat Internship scheme: A cleanliness drive in Haryana, at GMN College, Ambala Cantt on 22nd February, 2019.
12. Dr Neha Aggarwal presented a paper “ Road Safety Education: Need of the hour“ at one day national seminar on issues and challenges in road safety at GMN College, Ambala Cantt on 16th February, 2019.
13. Dr. Neha Aggarwal presented a paper “ Ethnomedical practices of tribal populations of India” at one day interdisciplinary national seminar on science of Ayurveda: Possibilities and Challenges, at GMN College, Ambala Cantt on 5th November, 2018.
14. Dr. Neha Aggarwal presented a paper “ Physico-chemical and Micellization Behaviour of Sodium Dodecylsulfate in Mixed Aqueous Solutions of Phosphate Salts” at one day national seminar on emerging trends in physical and chemical science in modern era at Markanda National College, Shahabad Markanda on 3rd November, 2018. **Dr. Neha Aggarwal bagged best poster award in chemical sciences.**
15. Dr. Neha Aggarwal presented a paper “ Sanskrit and Computational Linguistics“ at national seminar on Computational Sanskrit and Machine Translation: Possibilities & Challenges on 12th April, 2018.
16. Dr. Neha Aggarwal presented a paper ” Need for patenting in chemical sciences” at Two day national seminar on role of Intellectual property rights in present scenario at GMN College, Ambala Cantt 30-31st March, 2018.
17. Dr. Neha Aggarwal presented a paper “ Scientific significance of music” at National seminar on Art and Culture: Tradition, Circumstance and Possibilities at GMN College, Ambala Cantt on 22nd March, 2018.

18. Dr Neha Aggarwal presented a paper " Understanding the mechanism of taste chemoreception and taste quality of saccharides/derivatives with phosphate salts via physicochemical studies at different temperatures" at National seminar on emerging trends and challenges in Biosciences at GMN College, Ambala Cantt on 10th March, 2018.
19. Dr. Neha Aggarwal presented a paper " Calorimetric studies of saccharides and their derivatives in aqueous solutions of different phosphate-based inorganic salts" at 16th National conference on chemical and environmental sciences: Innovations and Advances-2018 at Punjabi University, Patiala on 15-16th Feb, 2018.
20. **Dr. Neha Aggarwal** participated in GIAN course (No. 161012B14) entitled " **Single Molecule Magnetism**" from 6-10th August, 2017 at Guru Nanak Dev University, Amritsar, Punjab, India.
21. Comparison of calorimetric studies of saccharides/derivatives in aqueous solutions of phosphate-based inorganic salts. Neha Aggarwal, P. K. Banipal, T. S. Banipal, at **3rd National Seminar on Recent Advances in Chemical Sciences** at Khalsa College, Amritsar, Punjab, India, 8th April, 2017.
22. Comparison of volumetric and viscometric studies of saccharides/derivatives in aqueous solutions of phosphate-based inorganic salts. Neha Aggarwal, P. K. Banipal, T. S. Banipal, at **VIth National Symposium on Advances in Chemical Sciences** at Guru Nanak Dev University, Amritsar, Punjab, India, 6-7th March, 2017.
23. Physicochemical behavior of saccharides and their derivatives in aqueous solutions of ammonium phosphate monobasic ($\text{NH}_4\text{H}_2\text{PO}_4$) at different temperatures: Volumetric, Calorimetric and Acoustic approach. **Neha Aggarwal**, P. K. Banipal, T. S. Banipal, at **18th CRSI National Symposium in Chemistry** at Panjab University, Chandigarh, India, 5-7th Feb, 2016.
24. Physicochemical behavior of saccharides/derivatives in aqueous solutions of potassium phosphate tribasic (K_3PO_4) at different temperatures: Volumetric, Calorimetric and Acoustic approach. P. K. Banipal, **Neha Aggarwal**, T. S. Banipal, at **Vth National Symposium on Advances in Chemical Sciences** at Guru Nanak Dev University, Amritsar, Punjab, India, 2-3rd Feb, 2016.
25. Physicochemical behavior of saccharides and their derivatives in aqueous solutions of sodium phosphate monobasic (NaH_2PO_4) at different temperatures: Volumetric,

- Calorimetric and Acoustic approach. P. K. Banipal, **Neha Aggarwal**, T. S. Banipal, at **International Conference on Nascent Developments in Chemical Sciences** at BITS, Pilani, Rajasthan, 16-18th Oct, 2015.
26. Hydration behavior of saccharides and their derivatives in phosphate-based monobasic and tribasic inorganic salts. P. K. Banipal, **Neha Aggarwal**, T. S. Banipal, at **10th National Conference on Thermodynamics of Pharmaceutical, Chemical and Biological Systems** at Panjab University, Chandigarh, India, 20-21st Nov, 2015.
27. Effect of phosphate based salts on the volumetric properties of some saccharides in aqueous solutions over temperature range (288.15 to 318.15) K. P. K. Banipal, **Neha Aggarwal**, T. S. Banipal, at **4th National Symposium on Advances in Chemical Sciences** at Guru Nanak Dev University, Punjab, Amritsar, India 27-28th Feb, 2014.
28. **Best Poster Award** for presenting the paper “ Interactions of some saccharides and their derivatives with potassium phosphate monobasic in aqueous solutions from (288.15 to 318.15) K: Volumetric and Viscometric Approach.” P. K. Banipal, **Neha Aggarwal**, T. S. Banipal, at **8th National Conference on Thermodynamics of Chemical, Biological and Environmental Systems** at Babasaheb Bhimrao Ambedkar University, Lucknow, India, 25-26th Nov, 2013.
29. Thermodynamic properties of some saccharides in aqueous solutions of potassium phosphate monobasic and their role in taste behavior. P. K. Banipal, **Neha Aggarwal**, T. S. Banipal, at **International Conference on Interdisciplinary Areas with Chemical Sciences** at Panjab University, Chandigarh, India, 30th Oct -1st Nov, 2013.
30. Volumetric properties of some monosaccharides and their derivatives in aqueous potassium phosphate monobasic solutions at (288.15-318.15) K and at atmospheric pressure. P. K. Banipal, **Neha Aggarwal**, T. S. Banipal, at **National Symposium on Recent Trends in Chemistry** at Guru Nanak Dev University, Amritsar, Punjab, India, 28 March, 2013.
31. Volumetric and transport properties of some saccharides in aqueous solutions of thiourea at 298.15 K. P. K. Banipal, **Neha Aggarwal**, Parul, Binaypal, Neetu, Sapna, T. S. Banipal, at **7th National Conference on Thermodynamics of Chemical, Biological and Environmental Processes** at S. V. University, Tirupati, Andhra Pradesh, 10-12th Dec. 2012.

Participation in workshops

- Dr Neha Aggarwal participated in a workshop on “ Standardization & Calibration for realization of Make in India, Skill India and Startup India” in collaboration with HARTRON in GMN college, Ambala Cantt. On 3rd & 4th October, 2019.

Book chapter

- Published a book chapter entitled “ **Sacrificial role of women of India in 19th and 20th century**” in the book entitled challenges in gender sensitization by Aryan Publication, New Delhi, **ISBN No. 978-93-86695-12-3** in 2019.
- Published a book chapter entitled “ Examination stress and time management strategies” in the book entitled Positive Parenting: Joy of raising kids by Atharv Publications, New Delhi, **ISBN No. 978-81-941394-8-5 in January, 2020.**

Faculty Development Programme

- Dr. Neha Aggarwal participated in One week online Faculty Development programme on MOODLE organized by GMN College, Ambala Cantt. From 27-04-2020 to 01-05-2020.
- Dr Neha Aggarwal participated in 5 days faculty development program on E-content development organized by GMN college, ambala Cantt. In association with International institute of organized research held from 30th May,2020 to 3rd June,2020.

Life Members

- Life member of Indian Thermodynamic Society
- Life member of Indian Science Congress

Orientation Programme

Dr. Neha Aggarwal participated in general orientation programme from 13-11-2018 to 10-12-2018 at Guru Nanak Dev University HRDC, Amritsar and secured A grade.

Refresher course

Dr. Neha Aggarwal participated in winter school (Interdisciplinary Refresher course) from 11-12-2019 to 24-12-2019 at Guru Nanak Dev University HRDC, Amritsar and secured A+ grade

Acted as a REVIEWER

- Reviewed a manuscript entitled,” Prediction of sand kinematic pressure and fluid-particle interaction coefficient as means of preventing sand-induced corrosion in crude oil

pipelines” for Ain Shams Engineering Journal, Elsevier journal on 5th Nov,2017. Ref. No. ASEJ-D-17-00666.

- Reviewed a manuscript entitled,” Design, preparation and characterization of a novel room temperature amino acid ionic liquid and its application in the synthesis of xanthenediones in water” for Combinatorial chemistry & High Throughput Screening on 24th Nov,2019. Ref. No. BMS-CCHTS-2019-153.

Brief description of Ph.D. topic:

Ph.D. TOPIC: Study on Interactions of Saccharides in Aqueous Phosphate-Based Inorganic Salt Solutions.

Saccharides being integral components of glycoproteins, glycolipids, nucleic acids and polysaccharides have great diversity of their biological functions such as signaling, cell-cell recognition etc. The hydration characteristics of saccharides in aqueous solutions are of direct relevance for understanding the role of glycoproteins and glycolipids in molecular recognition. These properties play a pivotal role in the study of the reaction conditions e.g. feasibility and optimization of currently employed industrial processes.

It has been realized from the literature that there is relatively little information available on the enthalpy, heat capacity and volumetric properties related to different anomeric forms of the saccharides and their derivatives. In the light of above facts, physicochemical properties for different classes of saccharides and their derivatives in aqueous solutions of various cosolutes have been studied as a function of temperature, pressure and concentration.

Therefore, precise and accurate new fundamental physicochemical properties data has been generated on the saccharides and their derivatives in aqueous solutions of cosolutes such as electrolytes; salts of alkali and alkaline earth metals (phosphates, tetraborates, acetates, citrates, etc.). The data will be useful in characterizing the hydration characteristics of saccharides, which are further useful in explaining the protective efficacy and protein stabilization of these compounds. These data are also needed in the optimization of the reaction conditions in the current industrial processes such as enzymatic conversion of biomass to useful chemicals and fuels.

Instruments like Vibrating-Tube Digital Densimeter, Multifrequency Ultrasonic Interferometer, Viscometer, Tensiometer, Differential Scanning Calorimeter, Isothermal Titration

microcalorimeter, UV-absorption spectrophotometer, HPLC, NMR etc. have been operated and used by me during my Ph.D. work.

Strengths:

- Good communication skills
- Good planning & monitoring skills
- Able to work under pressure of deadline
- Willingness to work
- Problem solving and quick decision making skills.
- Time management and ability to prioritize.

Medical Fitness:

Medically fit and there is no existing disease and in past too.

Personal Details:

Father' s Name: Mr. Naresh Aggarwal
Mother' s Name: Mrs. Sunita Aggarwal
Husband' s Name: Late Mr. Nitin Goel
Date of Birth : 3rd April1988
Religion : Hindu
Sex : Female
Marital Status : Widow
Language : English, Hindi, Punjabi

Declaration:

The information provided above is true to the best of my knowledge. Hope you will give me a chance to prove myself.

Thanking you,

Place: INDIA

Sincerely Yours
Neha Aggarwal