

Neha Aggarwal
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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. Eight 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.

Papers Published:

- **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) DOI: 10.1021/acs.jced.8b00681. **ISSN No. 0021-9568; Impact Factor 2.323.**
- 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.**
- 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.**
- 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 3.648.**

- 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 3.648.**
- 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 3.648.**
- 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 4.529.**
- 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:

- 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.
- 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.
- 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.**
- 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.

- 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.
- 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.
- 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.
- 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.
- **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.
- 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.
- 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.
- 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.

- 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.
- 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.
- 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.
- 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.
- **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.
- 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.
- 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.

- 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.

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 April 1988
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